SUPELCO®
Solutions within.™

Chromatography Applications

Searchable by technique, industry, and analyte

Volume 1: HPLC, UHPLC, LC-MS, SFC, SPE
Volume 2: GC, GC-MS, SPME, Air Monitoring
Volume 3: Chiral

Explore the Solutions Within

Method development can be a time-consuming part of the chromatographic process. Finding the best column, sample prep technique, mobile phase or carrier gas, and detection method is a challenging process. Just having a starting point can go a long way in reducing method development time.

Sigma-Aldrich has developed thousands of applications showing commonly analyzed compounds across many fields of research and testing.

This tool is interactive, searchable, and organized by research market focus within analytical technique, analyte, compound class, and key word. Each application includes links to the website which features additional information and convenient ordering.

This tool demonstrates how Sigma-Aldrich's analytical brands—Supelco, Fluka, Cerilliant, and RTC—are uniquely able to provide customers with a wide spectrum of chromatographic components across the analytical workflow:

- Sample collection and sample prep devices
- UHPLC, HPLC, LC-MS columns
- GC columns
- Chiral columns
- Mobile phase solvents
- Buffers and additives
- Derivitization reagents
- Analytical standards

Sigma-Aldrich continually adds new applications to its portfolio. If you have a suggestion for an application not found in this notebook, contact **techservice@sial.com**.

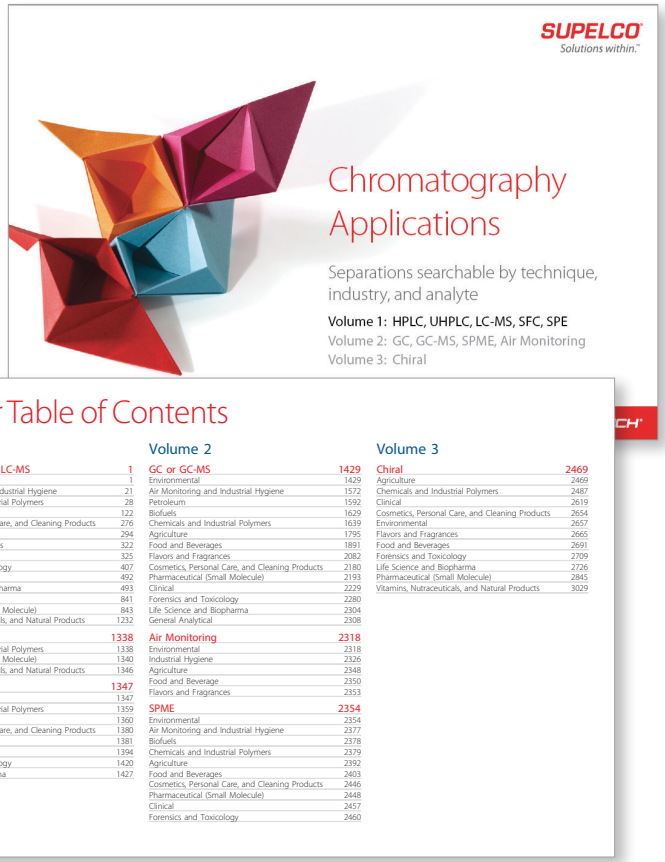
Expanded Publication

Learn How to Navigate the New Format

This expanded edition of the Chromatography Applications Notebook consists of three separate, but linked, volumes. Note that the application pages are numbered consecutively, **Volume 1** through **Volume 3**, beginning with 1.

Inside each volume is a **Master Table of Contents** and a comprehensive **Analyte Index**. These pages can be used to navigate from one volume to another.

When searching in the index, the page number(s) will help indicate the correct volume to visit. Volume page number keys are found in the index footer.



SUPELCO
Solutions within.™

Chromatography Applications

Separations searchable by technique, industry, and analyte

Volume 1: HPLC, UHPLC, LC-MS, SFC, SPE
Volume 2: GC, GC-MS, SPME, Air Monitoring
Volume 3: Chiral

Master Table of Contents

Volume 1

HPLC, UHPLC or LC-MS	**1**
Agriculture	1
Air Monitoring and Industrial Hygiene	21
Chemicals and Industrial Polymers	28
Clinical	122
Cosmetics, Personal Care, and Cleaning Products	276
Environmental	294
Flavors and Fragrances	322
Food and Beverages	325
Forensics and Toxicology	407
General Analytical	492
Life Science and Biopharma	493
Petroleum	841
Pharmaceutical (Small Molecule)	843
Vitamins, Nutraceuticals, and Natural Products	1232
SFC	**1338**
Chemicals and Industrial Polymers	1338
Pharmaceutical (Small Molecule)	1340
Vitamins, Nutraceuticals, and Natural Products	1346
SPE	**1347**
Agriculture	1347
Chemicals and Industrial Polymers	1359
Clinical	1360
Cosmetics, Personal Care, and Cleaning Products	1380
Environmental	1381
Food and Beverages	1394
Forensics and Toxicology	1420
Pharma and Biopharma	1427

Volume 2

GC or GC-MS	**1429**
Environmental	1429
Air Monitoring and Industrial Hygiene	1572
Petroleum	1592
Biofuels	1629
Chemicals and Industrial Polymers	1639
Agriculture	1795
Food and Beverages	1891
Flavors and Fragrances	2082
Cosmetics, Personal Care, and Cleaning Products	2180
Pharmaceutical (Small Molecule)	2193
Clinical	2229
Forensics and Toxicology	2280
Life Science and Biopharma	2304
General Analytical	2308
Air Monitoring	**2318**
Environmental	2318
Industrial Hygiene	2326
Agriculture	2348
Food and Beverage	2350
Flavors and Fragrances	2353
SPME	**2354**
Environmental	2354
Air Monitoring and Industrial Hygiene	2377
Biofuels	2378
Chemicals and Industrial Polymers	2379
Agriculture	2392
Food and Beverages	2403
Cosmetics, Personal Care, and Cleaning Products	2446
Pharmaceutical (Small Molecule)	2448
Clinical	2457
Forensics and Toxicology	2460

Volume 3

Chiral	**2469**
Agriculture	2469
Chemicals and Industrial Polymers	2487
Clinical	2619
Cosmetics, Personal Care, and Cleaning Products	2654
Environmental	2657
Flavors and Fragrances	2665
Food and Beverages	2691
Forensics and Toxicology	2709
Life Science and Biopharma	2726
Pharmaceutical (Small Molecule)	2845
Vitamins, Nutraceuticals, and Natural Products	3029

Master Table of Contents

Volume 1

HPLC, UHPLC or LC-MS 1
Agriculture 1
Air Monitoring and Industrial Hygiene 21
Chemicals and Industrial Polymers 28
Clinical 122
Cosmetics, Personal Care, and Cleaning Products 276
Environmental 294
Flavors and Fragrances 322
Food and Beverages 325
Forensics and Toxicology 407
General Analytical 492
Life Science and Biopharma 493
Petroleum 841
Pharmaceutical (Small Molecule) 843
Vitamins, Nutraceuticals, and Natural Products 1232

SFC 1338
Chemicals and Industrial Polymers 1338
Pharmaceutical (Small Molecule) 1340
Vitamins, Nutraceuticals, and Natural Products 1346

SPE 1347
Agriculture 1347
Chemicals and Industrial Polymers 1359
Clinical 1360
Cosmetics, Personal Care, and Cleaning Products 1380
Environmental 1381
Food and Beverages 1394
Forensics and Toxicology 1420
Pharma and Biopharma 1427

Volume 2

GC or GC-MS 1429
Environmental 1429
Air Monitoring and Industrial Hygiene 1572
Petroleum 1592
Biofuels 1629
Chemicals and Industrial Polymers 1639
Agriculture 1795
Food and Beverages 1891
Flavors and Fragrances 2082
Cosmetics, Personal Care, and Cleaning Products 2180
Pharmaceutical (Small Molecule) 2193
Clinical 2229
Forensics and Toxicology 2280
Life Science and Biopharma 2304
General Analytical 2308

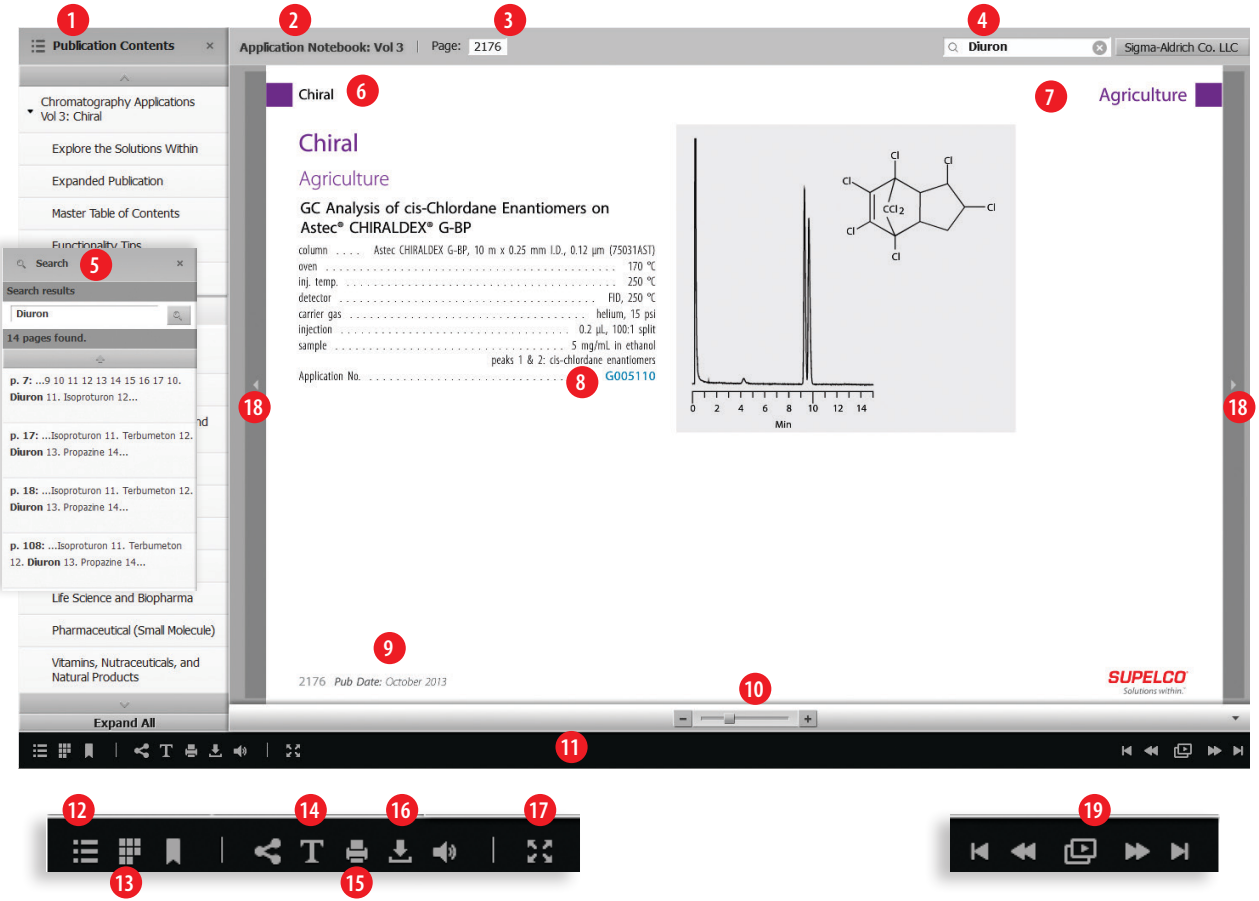
Air Monitoring 2318
Environmental 2318
Industrial Hygiene 2326
Agriculture 2348
Food and Beverage 2350
Flavors and Fragrances 2353

SPME 2354
Environmental 2354
Air Monitoring and Industrial Hygiene 2377
Biofuels 2378
Chemicals and Industrial Polymers 2379
Agriculture 2392
Food and Beverages 2403
Cosmetics, Personal Care, and Cleaning Products 2446
Pharmaceutical (Small Molecule) 2448
Clinical 2457
Forensics and Toxicology 2460

Volume 3

Chiral 2469
Agriculture 2469
Chemicals and Industrial Polymers 2487
Clinical 2619
Cosmetics, Personal Care, and Cleaning Products 2654
Environmental 2657
Flavors and Fragrances 2665
Food and Beverages 2691
Forensics and Toxicology 2709
Life Science and Biopharma 2726
Pharmaceutical (Small Molecule) 2845
Vitamins, Nutraceuticals, and Natural Products 3029

Functionality Tips



Legend

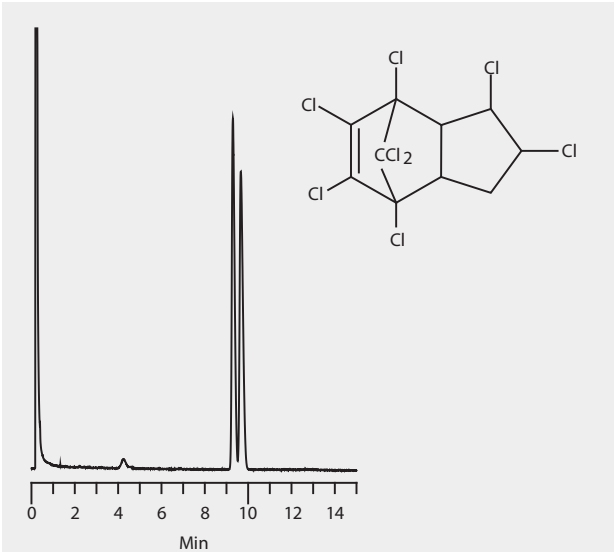
1. Content navigation
2. Publication title
3. Current page no. (accurate for chromatograms only)
4. Search field
5. Search results panel with search word(s) highlighted (will replace table of contents window)
6. Analytical technique
7. Market focus
8. Link to website product details
9. Publication issue date
10. Zoom bar
11. Bottom menu
12. Display publication contents (see Item 1)
13. Display page thumbnails
14. Select text
15. Print options (best printed in landscape orientation)
16. Download PDF options
17. Full screen mode
18. Page navigation arrows: forward/back
19. Bottom menu navigation: to start; back 1; slide show; forward 1; to end

Chiral

Agriculture

GC Analysis of cis-Chlordane Enantiomers on Astec® CHIRALDEX® G-BP

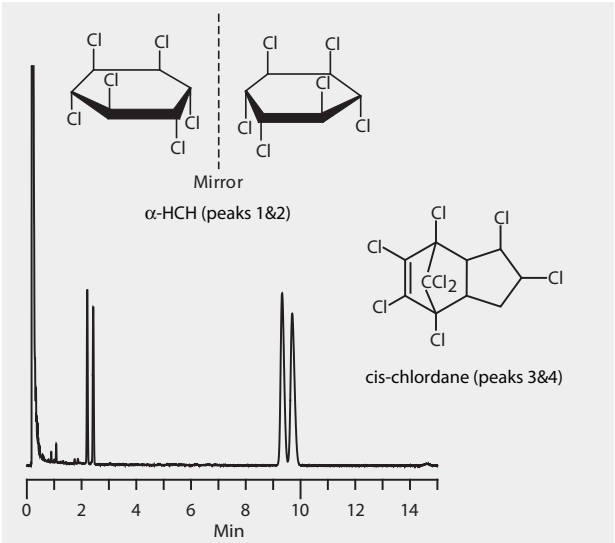
column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 100:1 split
sample . . . . . 5 mg/mL in ethanol
peaks 1 & 2: cis-chlordane enantiomers
Application No. G005110



SUPELCO® Solutions within.™

GC Analysis of α-Hexachlorocyclohexane (α-HCH) and cis-Chlordane Enantiomers on Astec® CHIRALDEX® G-BP

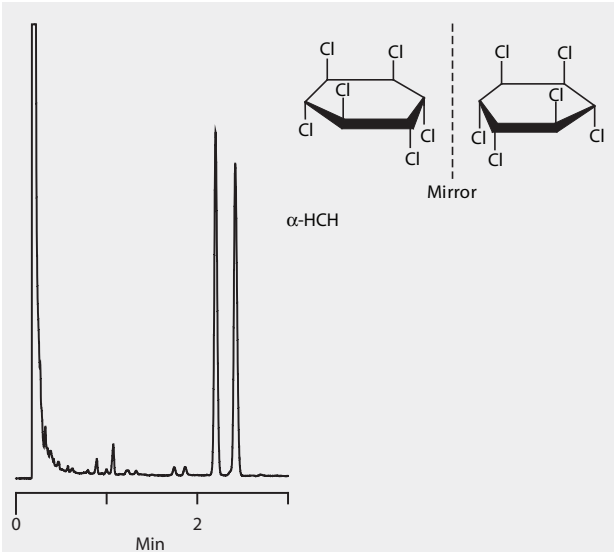
column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 100:1 split
sample . . . . . 5 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
peaks 3 & 4: cis-chlordane enantiomers
Application No. G005050



SUPELCO® Solutions within.™

GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-BP

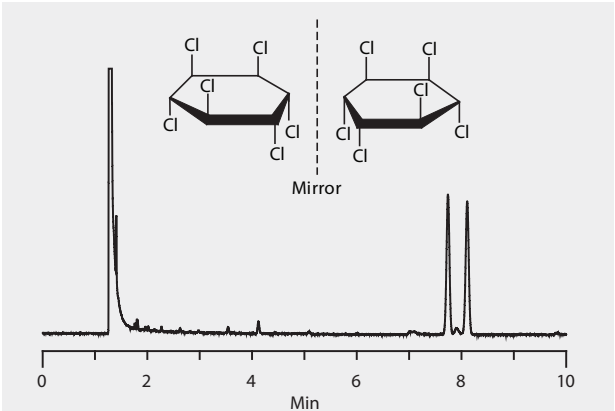
column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005109



SUPELCO®
Solutions within.™

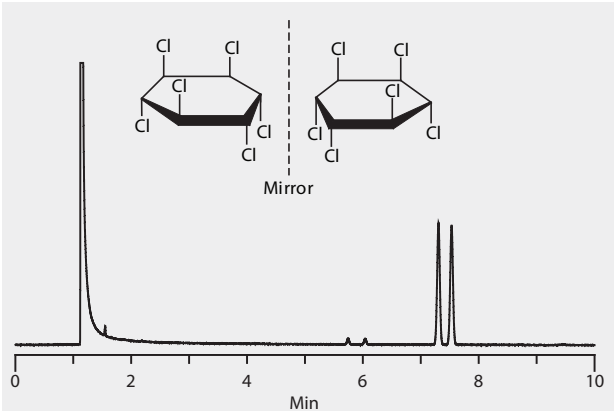
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-DM

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005114



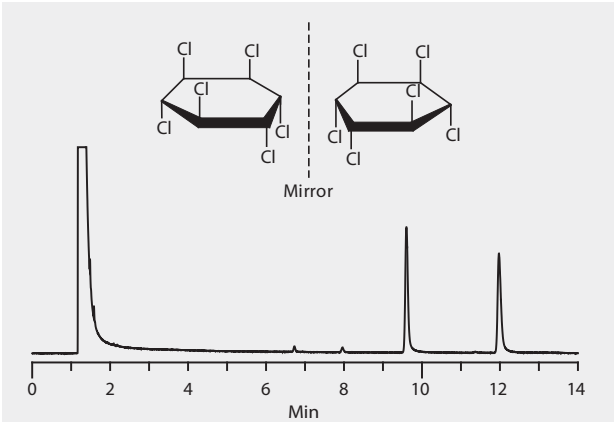
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005112



GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-DP

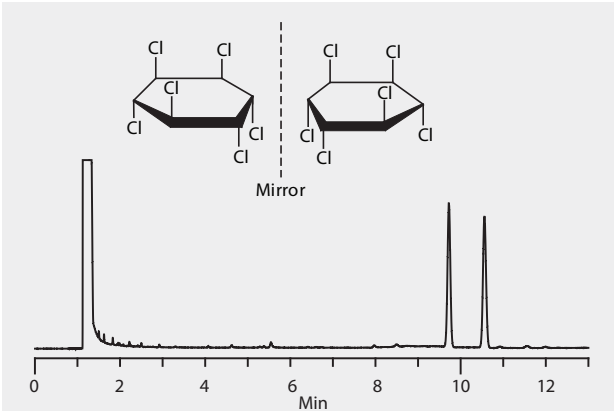
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005051



SUPELCO® Solutions within.™

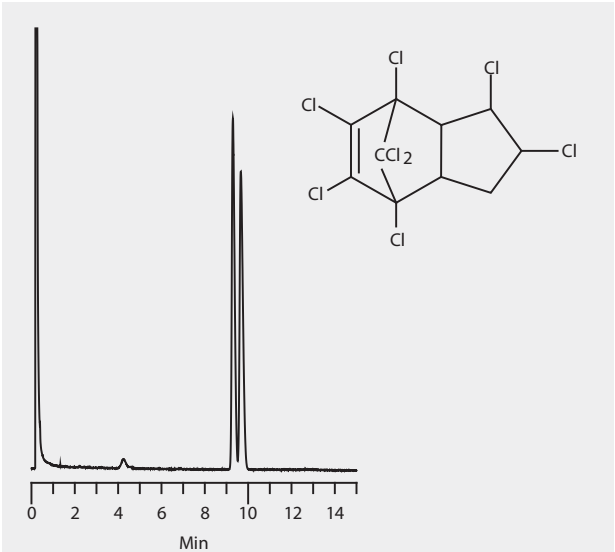
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-PN

column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005113



GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-TA

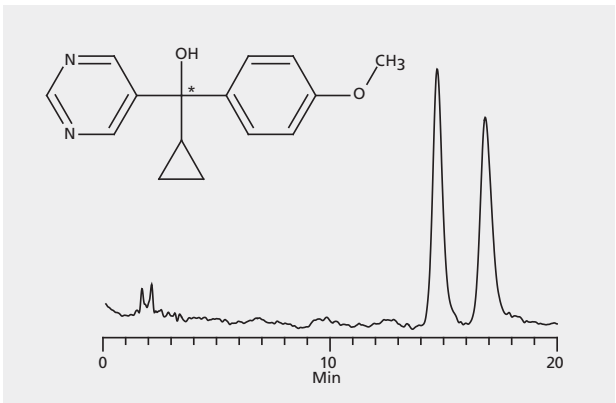
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample preparation . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005111



SUPELCO® Solutions within.™

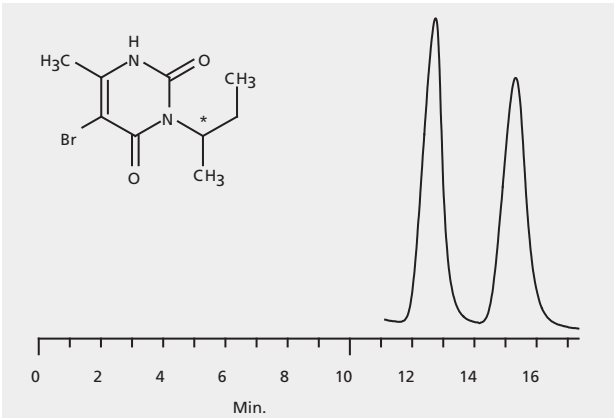
HPLC Analysis of Ancymidol Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . (A) 5 mM ammonium acetate, pH 6.0; (B) acetonitrile; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 35 °C
detector . . . . . UV, 215 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004684



HPLC Analysis of Bromacil Enantiomers on Astec® CHIROBIOTIC® T2

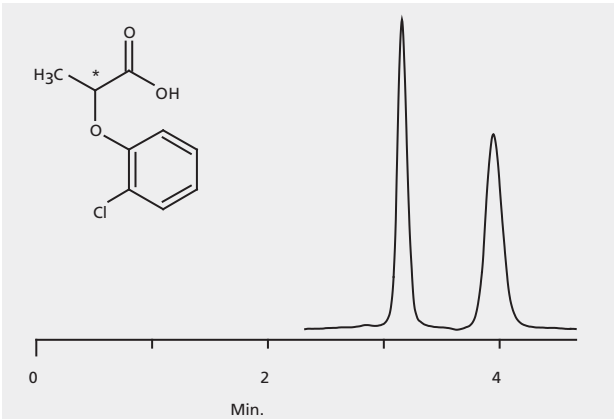
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . (A) water; (B) ethanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004595



SUPELCO®
Solutions within.™

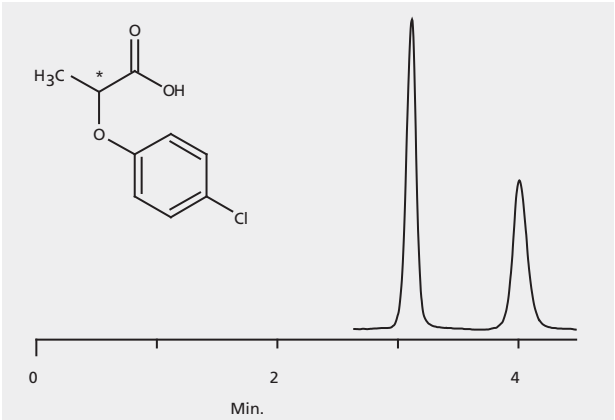
HPLC Analysis of 2(2-Chlorophenoxy) Propionic Acid Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 235 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004579



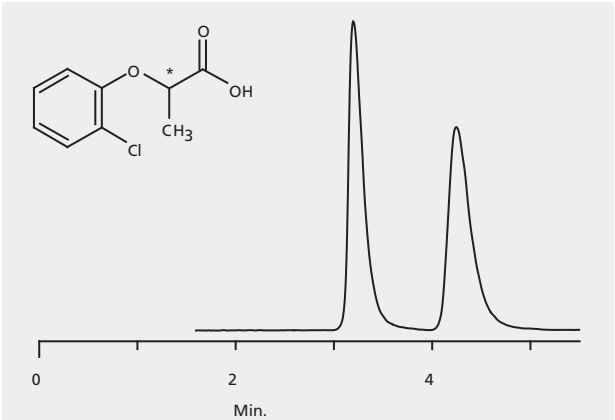
HPLC Analysis of 2(4-Chlorophenoxy) Propionic Acid Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 235 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004580



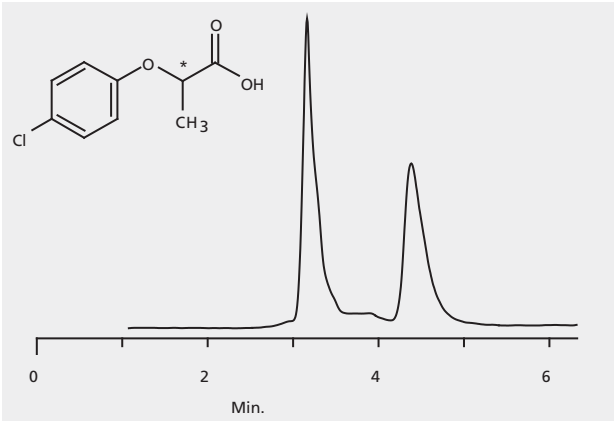
HPLC Analysis of 2(2-Chlorophenoxy) Propionic Acid Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . 0.1 wt% ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004606



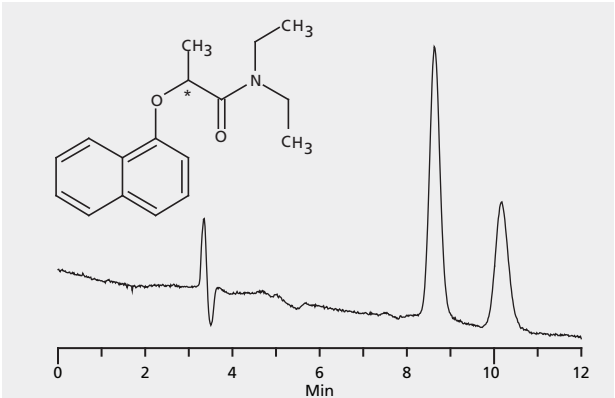
HPLC Analysis of 2(4-Chlorophenoxy) Propionic Acid Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . 0.1 wt% mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004607



HPLC Analysis of Devrinol (Napropamide) Enantiomers on Astec® CHIROBIOTIC® V

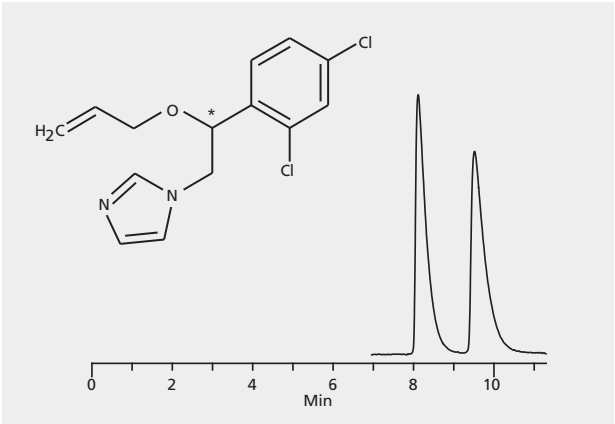
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 0.1% triethylamine, pH 5.0; (B) THF; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004622



SUPELCO®
Solutions within.™

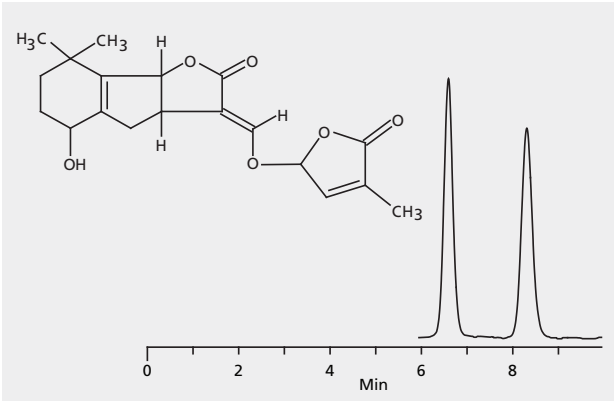
HPLC Analysis of Enilconazol (Imazalil) Enantiomers on Astec® CYCLOBOND® I 2000

column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . (A) 0.1% triethylamine acetate, pH 4.1; (B) acetonitrile; (90:10, A:B)
flow rate . . . . . 0.7 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004690



HPLC Analysis of Strigol Enantiomers on Astec® CYCLOBOND® I 2000 RSP

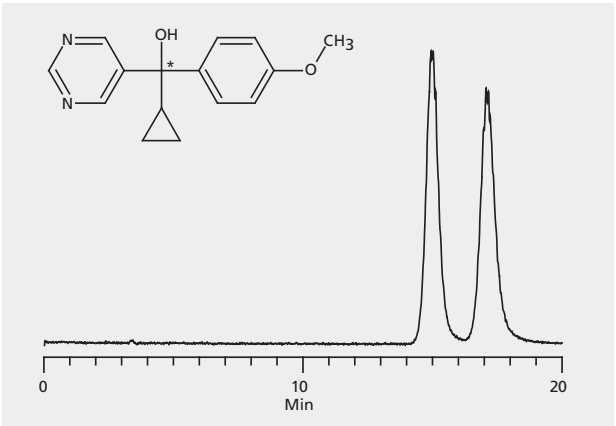
column . . CYCLOBOND I 2000 RSP, 25 cm x 4.6 mm I.D., 5 µm particles (20324AST)
mobile phase . . . . . (A) 0.1% triethylamine, pH 4.1; (B) acetonitrile; (75:25, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 240 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004707



SUPELCO®
Solutions within.™

LC-MS Analysis of Ancymidol Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

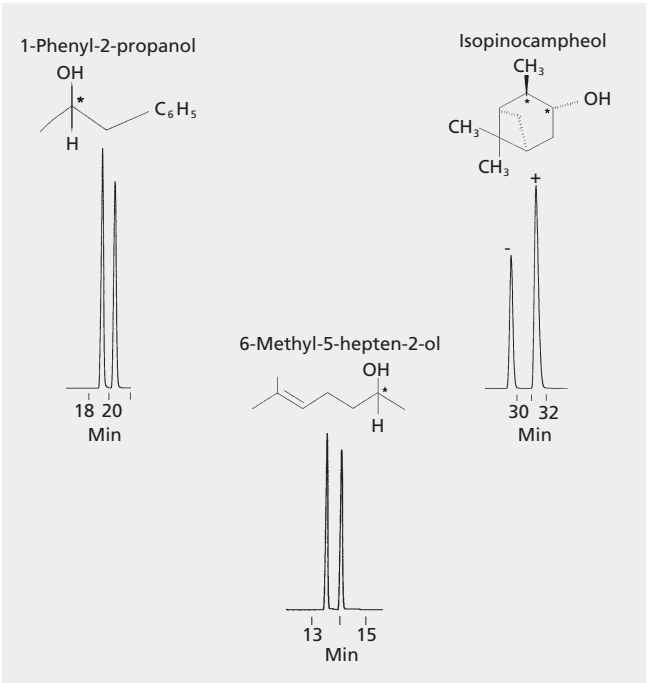
column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . (A) 5 mM ammonium acetate, pH 6.0; (B) acetonitrile; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 35 °C
detector . . . . . MS (m/z = 257)
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004683



Chemicals and Industrial Polymers

GC Analysis of Alcohol Enantiomers on β-DEX™ 325

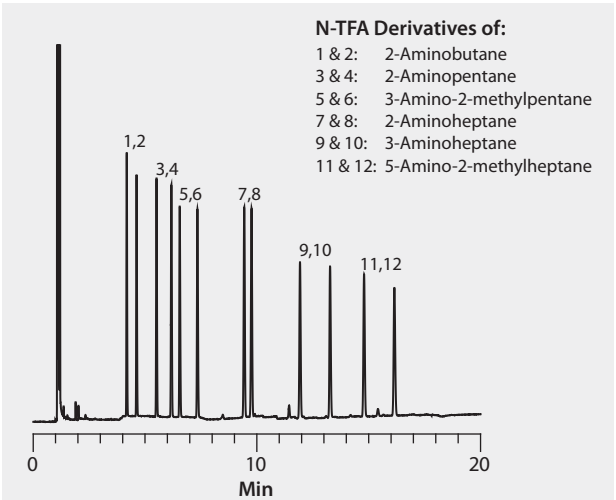
column . . . . . β-DEX 325, 30 m × 0.25 mm I.D., 0.25 µm (24308)
oven . . . . . 110 °C, 1-phenyl-2-propanol; 100 °C, isopinocampheol; 90 °C, 6-methyl-5-hepten-2-ol
inj. temp. . . . . 220 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 20 cm/sec @ analysis temperature
injection . . . . . 1 µL 100:1 split
sample . . . . . 1 mg/mL in methylene chloride
Application No. 797-0020



SUPELCO® Solutions within.™

GC Analysis of Alkylamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® B-TA

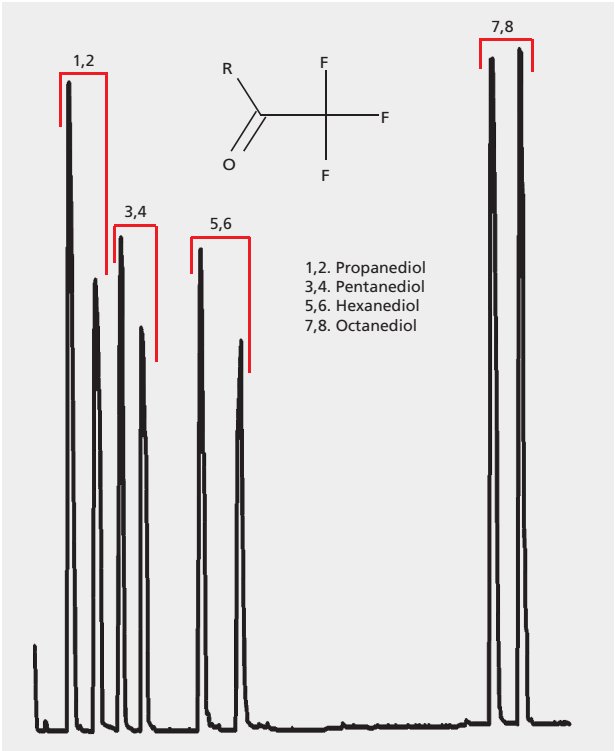
column . . . . Astec CHIRALDEX B-TA, 30 m x 0.25 mm I.D., 0.12 µm (73023AST)
gradient . . . . . 80 °C, 2 °C/min to 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.6 µL, 80:1 split
sample . . . . . 2.5 mg/mL each racemate in methanol (N-TFA derivatives)
Application No. G005092



SUPELCO® Solutions within.™

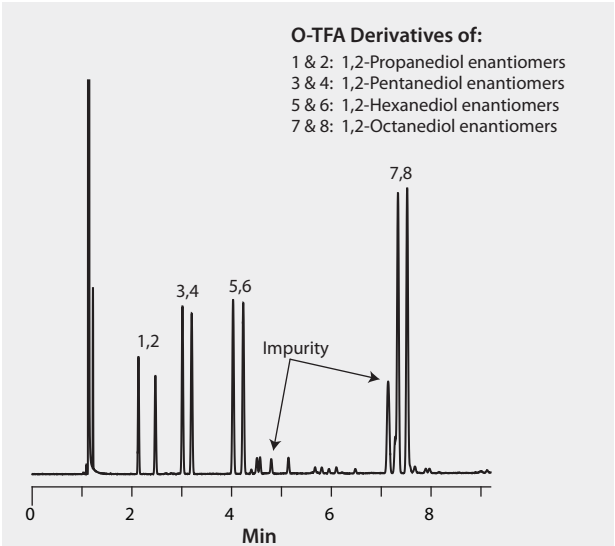
GC Analysis of Alkyldiol Enantiomers on Astec® CHIRALDEX® G-TA

column . . . . Astec CHIRALDEX G-TA, 40 m x 0.25 mm I.D., 0.12 µm (73034AST)
oven . . . . . 80 °C (5 min), 5 °C/min to 130 °C
carrier gas . . . . . hydrogen, 25 psi
injection . . . . . 1 µL, 100:1 split
sample . . . . . peaks 1-2: propanediol (1.96 and 2.44 min)
peaks 3-4: pentanediol (2.87 and 3.27 min)
peaks 5-6: hexanediol (4.33 and 5.03 min)
peaks 7-8: octanediol (9.68 and 10.18 min)
Application No. G004397



GC Analysis of 1,2-Alkyldiol Enantiomers (O-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-TA

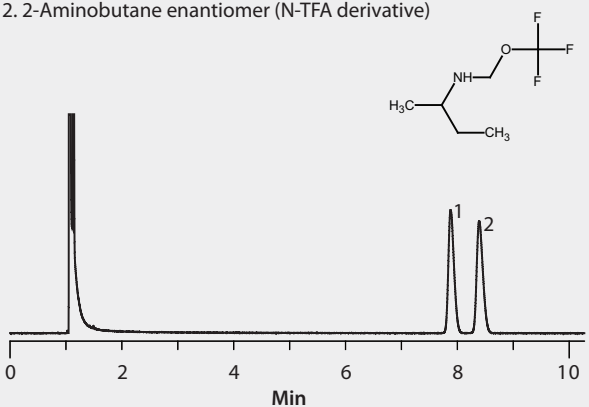
column .... Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven ..... 80 °C, 5 °C/min to 130 °C
inj. temp. ..... 250 °C
detector ..... FID, 250 °C
carrier gas ..... helium, 30 psi
injection ..... 1 µL, 80:1 split
sample ..... various alkyldiol enantiomers (O-TFA derivatives)
Application No. G005093



GC Analysis of 2-Aminobutane (2-Butylamine) Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-TA

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 80 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 2-aminobutane enantiomers (N-TFA derivatives)
Application No. G005039

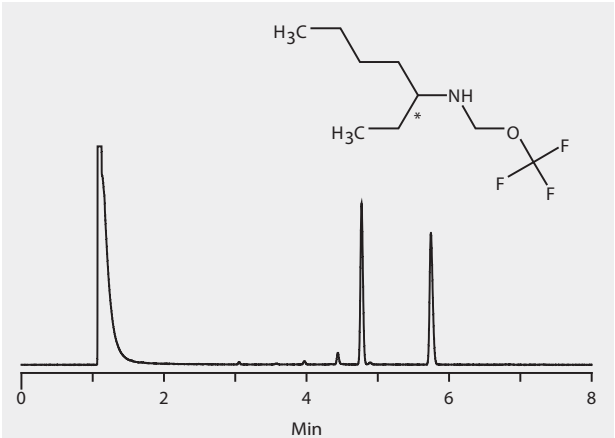
1. 2-Aminobutane enantiomer (N-TFA derivative)
2. 2-Aminobutane enantiomer (N-TFA derivative)



SUPELCO® Solutions within.™

GC Analysis of 3-Aminoheptane Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DP

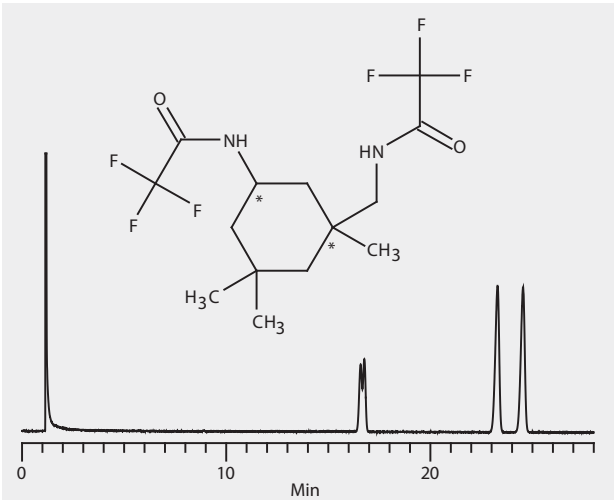
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . peaks 1 & 2: 3-aminoheptane enantiomers (N-trifluoroacetyl derivatives)
Application No. G005047



SUPELCO
Solutions within.™

GC Analysis of 5-Amino-1,3,3-Trimethylcyclohexanemethylamine Enantiomers (N-TFA Derivatives) on Astec® CHIRALDEX® A-TA

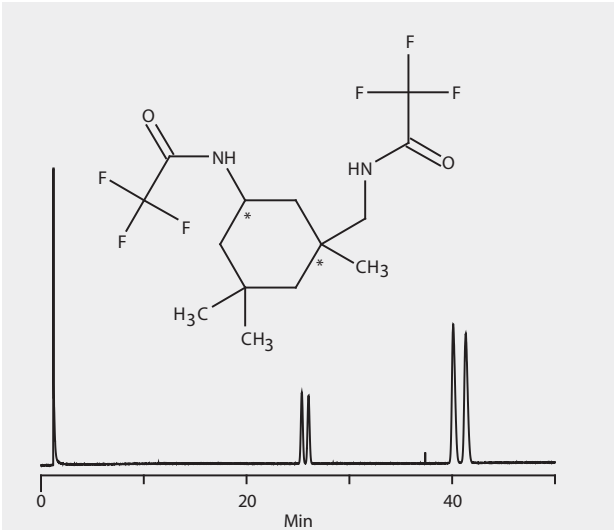
column . . . . Astec CHIRALDEX A-TA, 30 m x 0.25 mm I.D., 0.12 µm (73003AST)
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL racemate in methanol
peaks 1 & 2: first enantiomer pair
peaks 3 & 4: second enantiomer pair
Application No. G005105



SUPELCO
Solutions within.™

GC Analysis of 5-Amino-1,3,3-Trimethylcyclohexanemethylamine Enantiomers (N-TFA Derivatives) on Astec® CHIRALDEX® B-TA

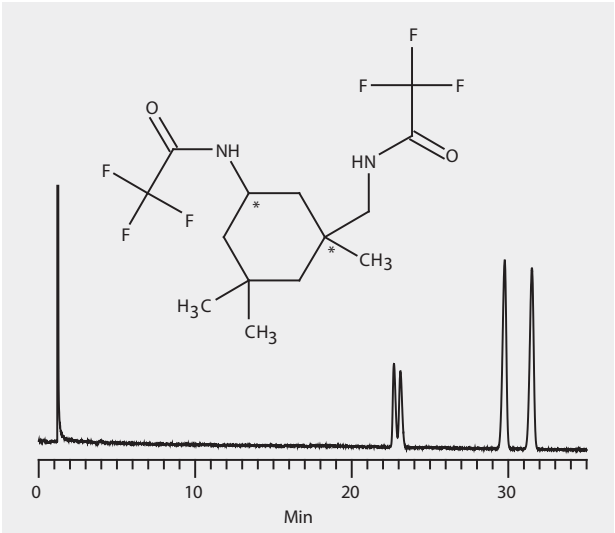
column . . . . Astec CHIRALDEX B-TA, 30 m x 0.25 mm I.D., 0.12 µm (73023AST)
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL racemate in methanol
peaks 1 & 2: first enantiomer pair
peaks 3 & 4: second enantiomer pair
Application No. G005104



SUPELCO® Solutions within.™

GC Analysis of 5-Amino-1,3,3-Trimethylcyclohexanemethylamine Enantiomers (N-TFA Derivatives) on Astec® CHIRALDEX® G-TA

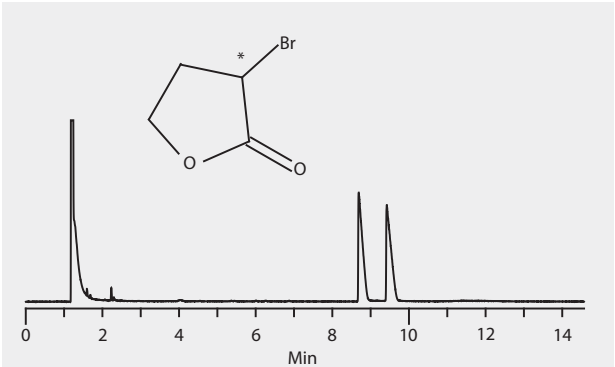
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample gas . . . . . 3 mg/mL racemate in methanol
peaks 1 & 2: first enantiomer pair
peaks 3 & 4: second enantiomer pair
Application No. G005103



SUPELCO
Solutions within.™

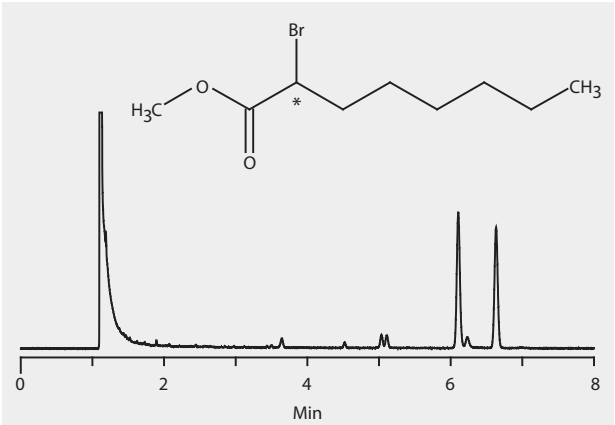
GC Analysis of α-Bromo-γ-Butyrolactone Enantiomers on Astec® CHIRALDEX® G-DP

column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: α-bromo-γ-butyrolactone enantiomers
Application No. G005084



GC Analysis of 2-Bromooctanoic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® G-DP

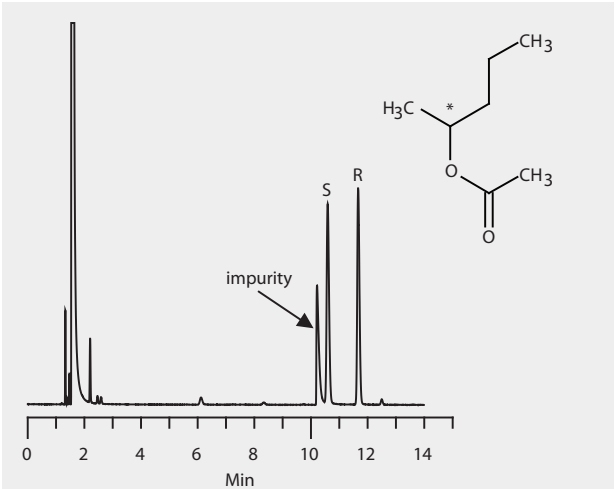
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 2-bromooctanoic acid methyl ester
Application No. G005145



GC Analysis of 2-Butanol Enantiomers (O-Acetyl Derivatives) on Astec® CHIRALDEX® G-TA

Elution order reversal by using the O-TFA derivative on CHIRALDEX G-TA.

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
gradient . . . . . 30 °C (5 min), 5 °C/min to 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2 mg/mL each racemate in methylene chloride
peak 1: impurity
peak 2: (S)-2-butanol (O-acetyl derivative)
peak 3: (R)-2-butanol (O-acetyl derivative)
Application No. G005096

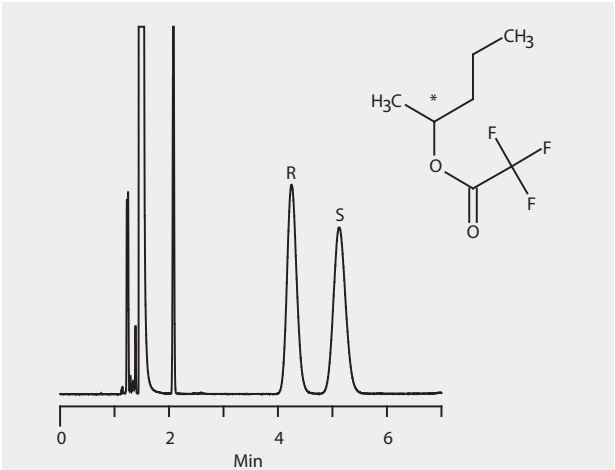


SUPELCO® Solutions within.™

GC Analysis of 2-Butanol Enantiomers (O-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-TA

Elution order reversal by using the O-Acetyl derivative on CHIRALDEX G-TA.

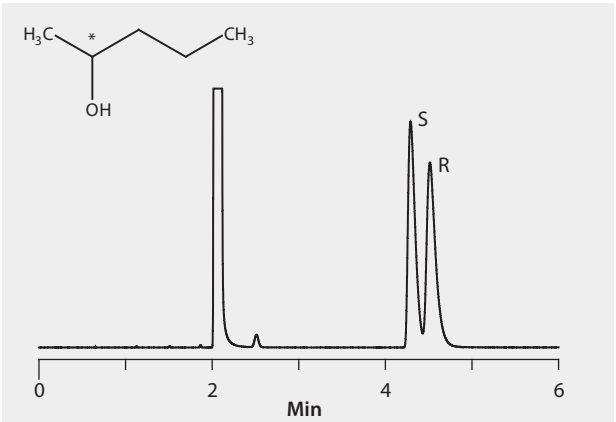
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
gradient . . . . . 30 °C (5 min), 5 °C/min to 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . peak 1: R(-)-2-butanol (O-TFA derivative)
peak 2: S(+)-2-butanol (O-TFA derivative)
Application No. G005095



SUPELCO® Solutions within.™

GC Analysis of 2-Butanol Enantiomers (Underivatized) on Astec® CHIRALDEX® G-TA

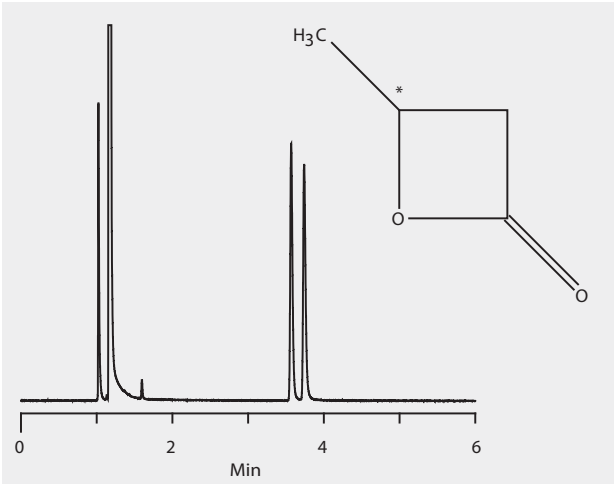
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
gradient . . . . . 30 °C (5 min), 5 °C/min to 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2 mg/mL each racemate in methylene chloride
peak 1: S(+)-2-butanol
peak 2: R(-)-2-butanol
Application No. G005094



SUPELCO
Solutions within.™

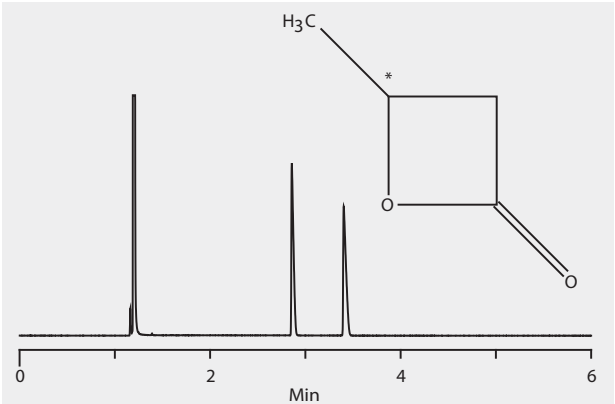
GC Analysis of β-Butyrolactone Enantiomers on Astec® CHIRALDEX® B-DM

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: β-butyrolactone
Application No. G005062



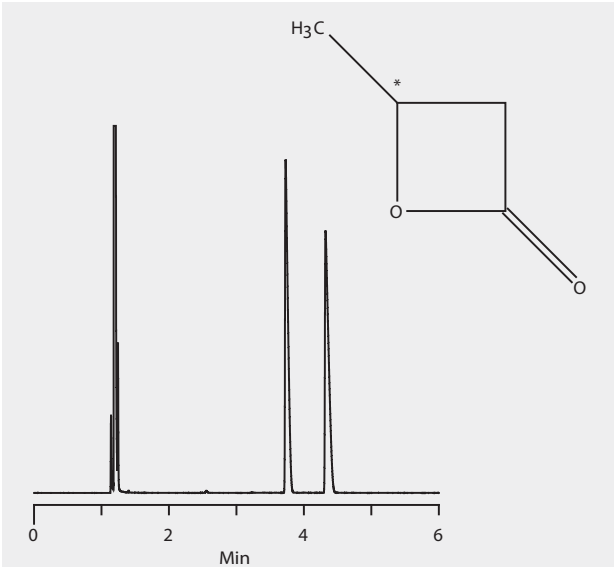
GC Analysis of β-Butyrolactone Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 140 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: β-butyrolactone
Application No. G005057



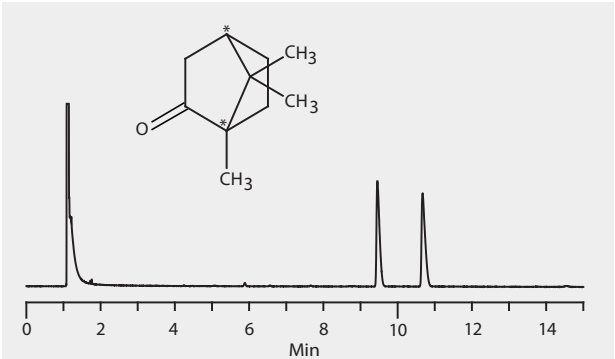
GC Analysis of β-Butyrolactone Enantiomers on Astec® CHIRALDEX® G-TA

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: β-butyrolactone
Application No. G005056



GC Analysis of Camphor Enantiomers on Astec® CHIRALDEX® G-DP

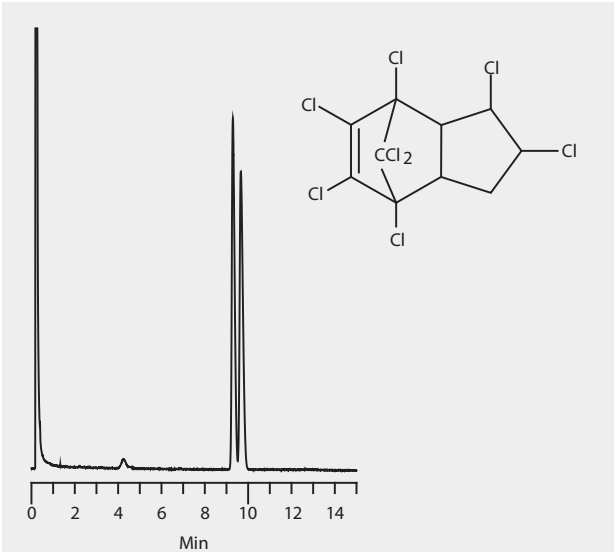
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 100 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: camphor enantiomers
Application No. G005058



SUPELCO® Solutions within.™

GC Analysis of cis-Chlordane Enantiomers on Astec® CHIRALDEX® G-BP

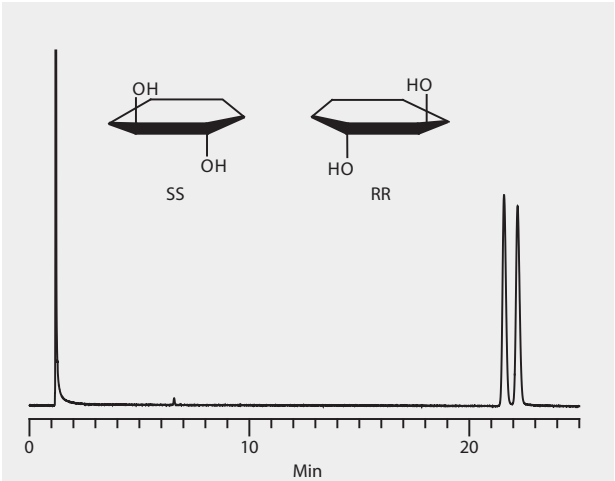
column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 100:1 split
sample . . . . . 5 mg/mL in ethanol
peaks 1 & 2: cis-chlordane enantiomers
Application No. G005110



SUPELCO® Solutions within.™

GC Analysis of trans-1,2-Cyclohexanediol Enantiomers on Astec® CHIRALDEX® B-PH

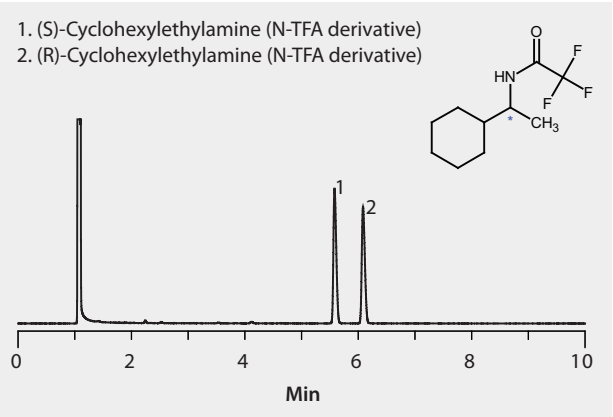
column . . . . Astec CHIRALDEX B-PH, 30 m x 0.25 mm I.D., 0.12 µm (71023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: trans-1,2-cyclohexanediol enantiomers
Application No. G005083



SUPELCO® Solutions within.™

GC Analysis of 1-Cyclohexylethylamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® B-DP

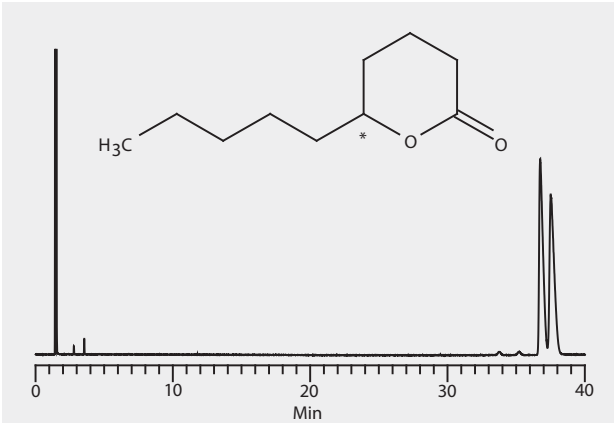
column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 130 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peak 1: S(+)-cyclohexylethylamine (N-TFA derivative)
peak 2: R(-)-cyclohexylethylamine (N-TFA derivative)
Application No. G005034



SUPELCO
Solutions within.™

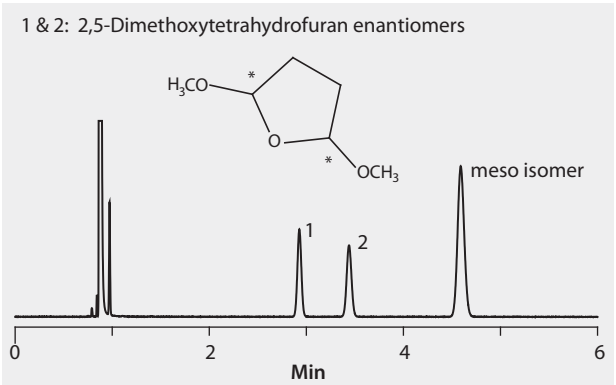
GC Analysis of δ-Decanolactone Enantiomers on Astec® CHIRALDEX® G-TA

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . helium, 24 psi
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
sample . . . . . peaks 1 & 2: δ-decanolactone enantiomers
Application No. G005146



GC Analysis of 2,5-Dimethoxytetrahydrofuran Enantiomers on Astec® CHIRALDEX® G-BP

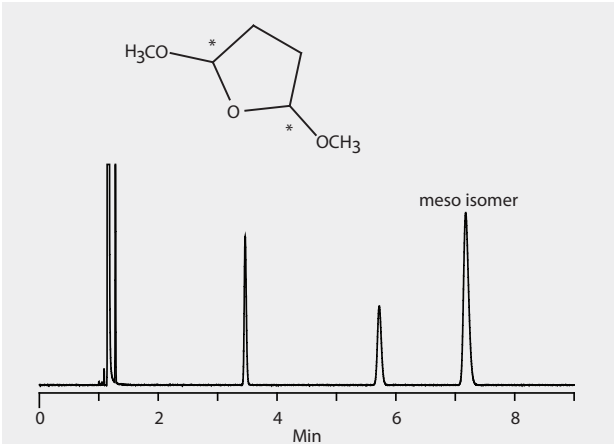
column . . . . Astec CHIRALDEX G-BP, 20 m x 0.25 mm I.D., 0.12 µm (75032AST)
oven . . . . 60 °C
inj. temp. . . . . 250 °C
detector . . . . FID, 250 °C
carrier gas . . . . helium, 20 psi
injection . . . . 0.2 µL, 80:1 split
sample gas . . . . 2 mg/mL in ethanol
peaks 1 & 2: 2,5-dimethoxytetrahydrofuran enantiomers
peak 3: meso-isomer
Application No. G005060



SUPELCO® Solutions within.™

GC Analysis of 2,5-Dimethoxytetrahydrofuran Enantiomers on Astec® CHIRALDEX® G-TA

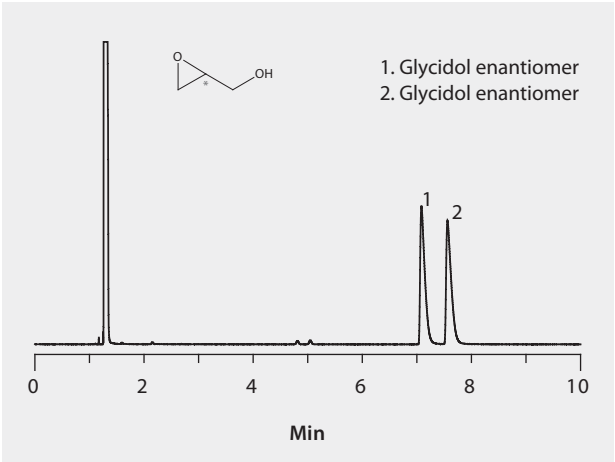
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: 2,5-dimethoxytetrahydrofuran enantiomers
peak 3: meso-isomer
Application No. G005122



SUPELCO® Solutions within.™

GC Analysis of Glycidol Enantiomers on Astec® CHIRALDEX® A-TA

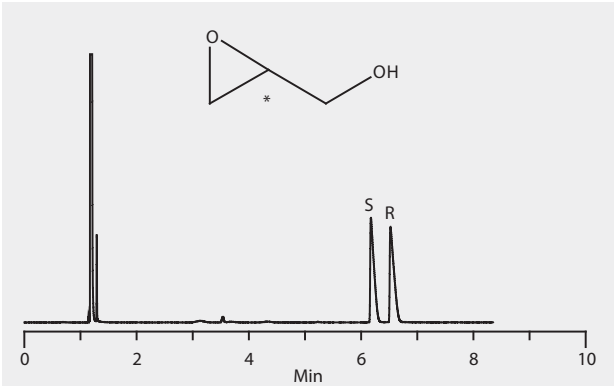
column .... Astec CHIRALDEX A-TA, 30 m x 0.25 mm I.D., 0.12 µm (73003AST)
oven ..... 65 °C
inj. temp. ..... 250 °C
detector ..... FID, 250 °C
carrier gas ..... helium, 30 psi
sample ..... peak 1: R(+)-glycidol
peak 2: S(-)-glycidol
Application No. G005030



GC Analysis of Glycidol Enantiomers on Astec® CHIRALDEX® B-TA

Elution order reversal on CHIRALDEX A-TA and CHIRALDEX G-TA.

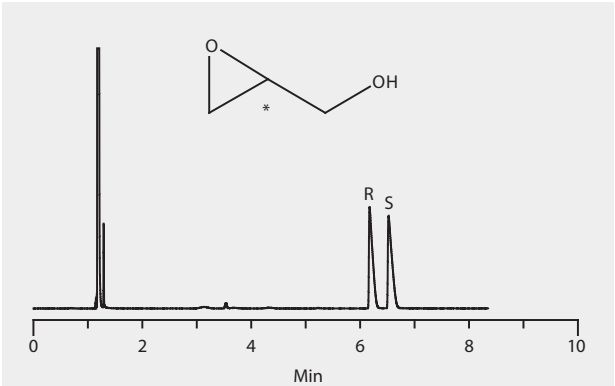
column . . . . Astec CHIRALDEX B-TA, 30 m x 0.25 mm I.D., 0.12 µm (73023AST)
oven . . . . . 80 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peak 1: S(-)-glycidol
peak 2: R(+)-glycidol
Application No. G005126



GC Analysis of Glycidol Enantiomers on Astec® CHIRALDEX® G-TA

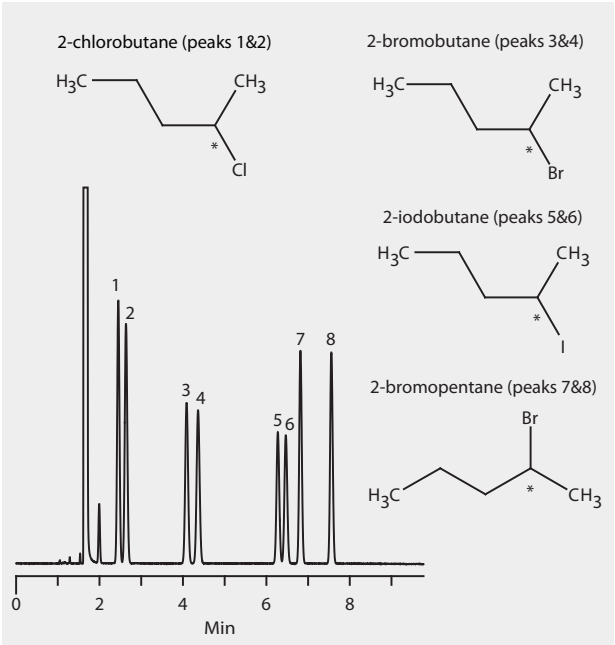
Elution order reversal on CHIRALDEX B-TA.

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 70 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
inj. temp. . . . . 250 °C
sample . . . . . peak 1: R(+)-glycidol
peak 2: S(-)-glycidol
Application No. G005131



GC Analysis of 2-Halohydrocarbon Enantiomers on Astec® CHIRALDEX® G-TA

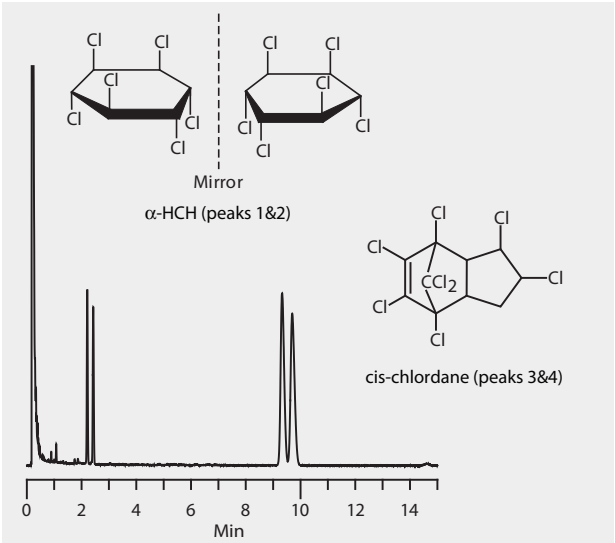
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
gradient . . . . . 30 °C (3 min), 5 °C/min to 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2.5 mg/mL of each compound
Application No. G005064



SUPELCO® Solutions within.™

GC Analysis of α-Hexachlorocyclohexane (α-HCH) and cis-Chlordane Enantiomers on Astec® CHIRALDEX® G-BP

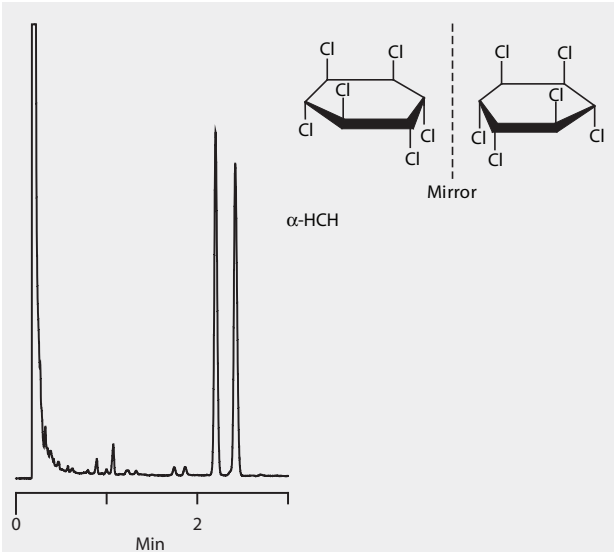
column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 100:1 split
sample . . . . . 5 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
peaks 3 & 4: cis-chlordane enantiomers
Application No. G005050



SUPELCO® Solutions within.™

GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-BP

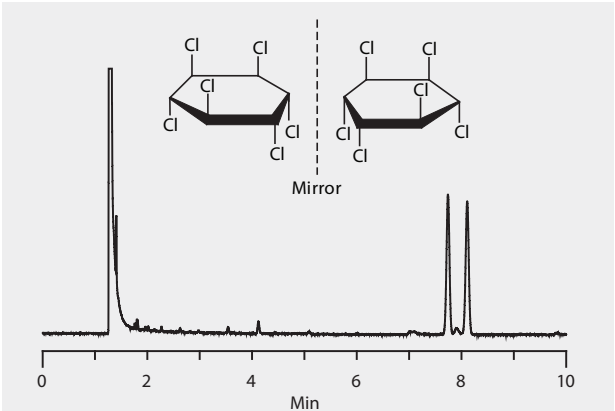
column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005109



SUPELCO®
Solutions within.™

GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-DM

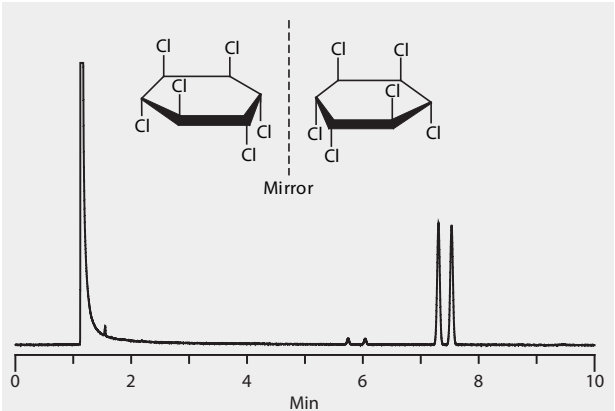
column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005114



SUPELCO® Solutions within.™

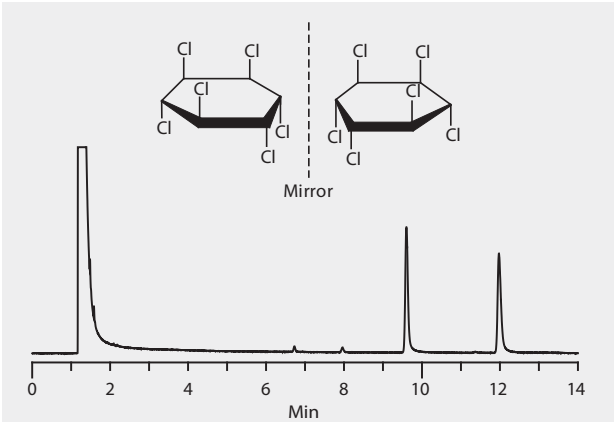
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005112



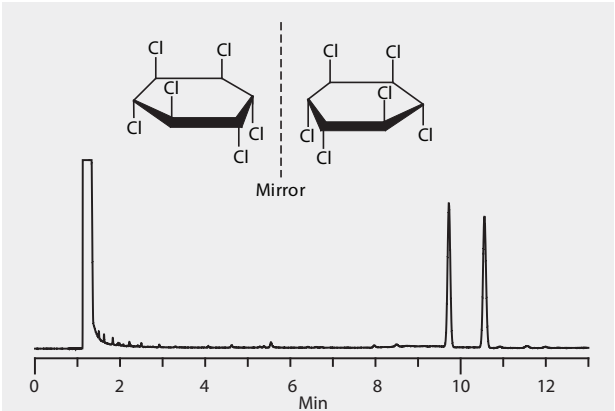
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-DP

column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005051



GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-PN

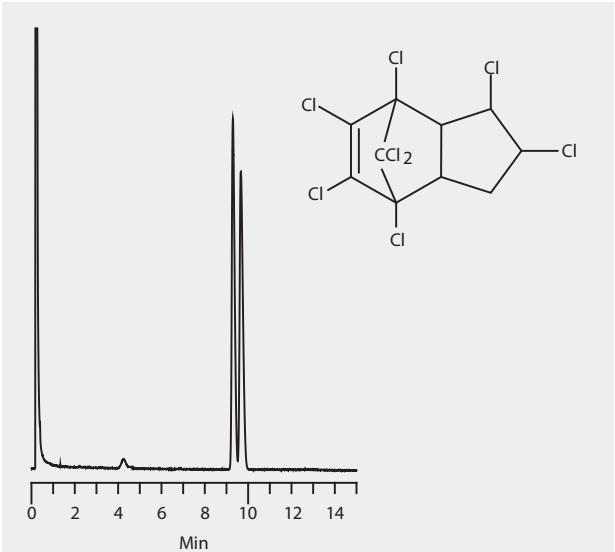
column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005113



SUPELCO® Solutions within.™

GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-TA

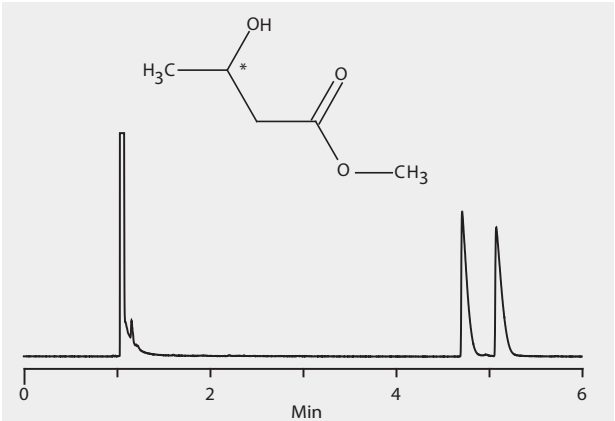
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample preparation . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005111



SUPELCO® Solutions within.™

GC Analysis of 3-Hydroxybutyric Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

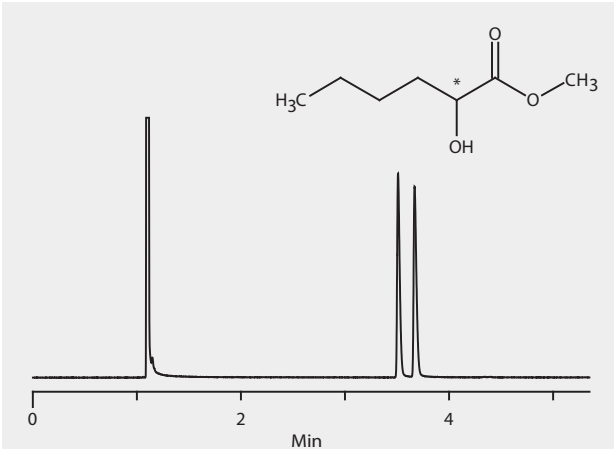
column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 80 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 3-hydroxybutyric acid methyl ester enantiomers
Application No. G005048



SUPELCO®
Solutions within.™

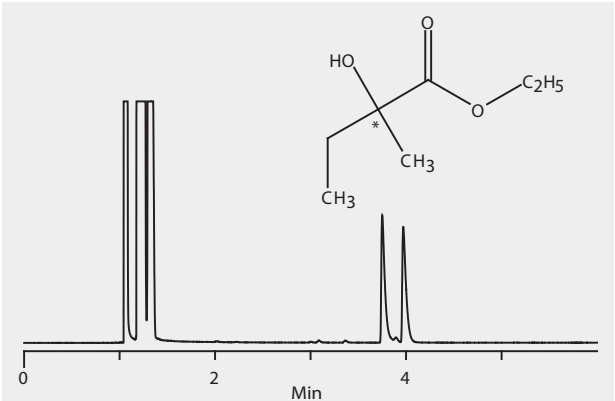
GC Analysis of 2-Hydroxycaproic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 100 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 2-hydroxycaproic acid methyl ester enantiomers
Application No. G005045



GC Analysis of 2-Hydroxy-2-Methyl Butyric Acid Ethyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

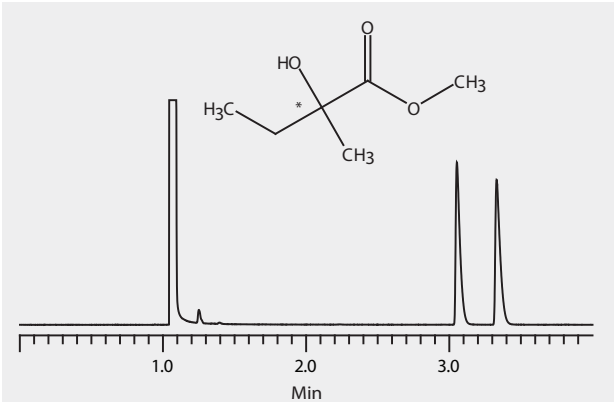
column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
sample . . . peaks 1 & 2: 2-hydroxy-2-methyl butyric acid ethyl ester enantiomers
Application No. G005044



SUPELCO®
Solutions within.™

GC Analysis of 2-Hydroxy-2-Methyl Butyric Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

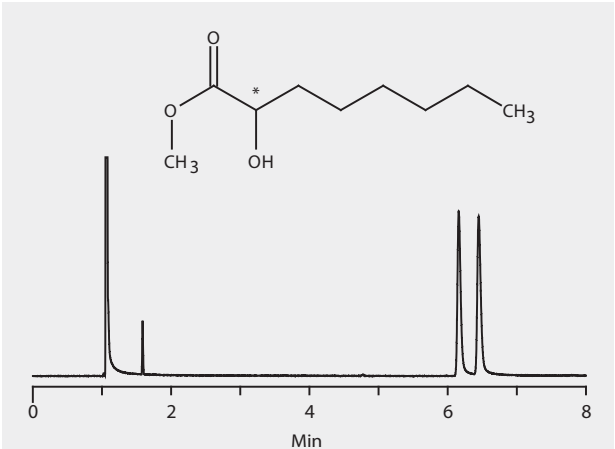
column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . peaks 1 & 2: 2-hydroxy-2-methyl butyric acid methyl ester enantiomers
Application No. G005043



SUPELCO
Solutions within.™

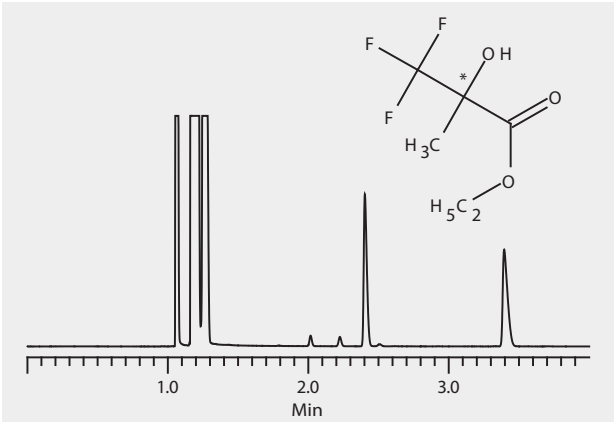
GC Analysis of 2-Hydroxyoctanoic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 2-hydroxyoctanoic acid methyl ester enantiomers
Application No. G005046



GC Analysis of 2-Hydroxy-2-Trifluoromethyl Propionic Acid Ethyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

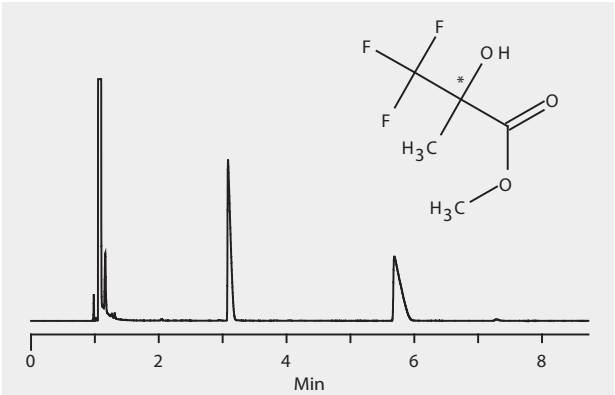
column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 75 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 2-hydroxy-2-trifluoromethyl propionic acid ethyl ester enantiomers
Application No. G005040



SUPELCO
Solutions within.™

GC Analysis of 2-Hydroxy-2-Trifluoromethyl Propionic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

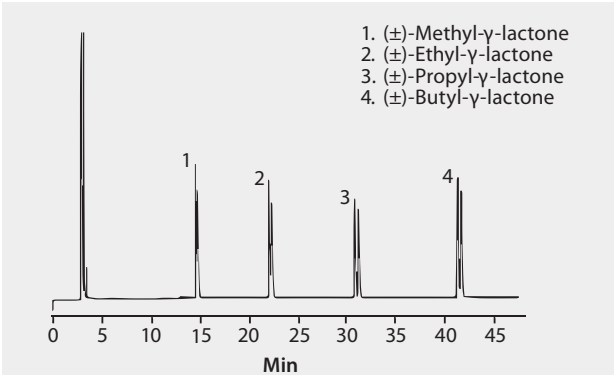
column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
sample . . . . . peaks 1 & 2: 2-hydroxy-2-trifluoromethyl propionic acid methyl ester enantiomers
Application No. G005041



SUPELCO
Solutions within.™

GC Analysis of Lactone Enantiomers on β-DEX™ 110

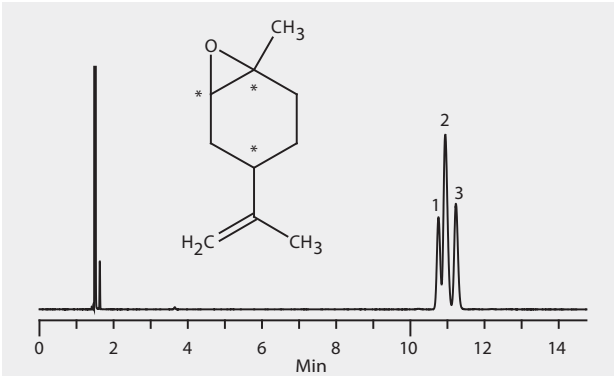
column . . . . . β-DEX 110, 30 m × 0.25 mm I.D., 0.25 µm (24301)
oven . . . . . 90 °C, 1 °C/min to 200 °C
inj. temp. . . . . 300 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 20 cm/sec @ 90 °C
injection . . . . . 1 µL, 100:1 split
sample . . . . . 0.5 mg/mL in methylene chloride
Application No. 712-0266



SUPELCO® Solutions within.™

GC Analysis of cis/trans Limonene Oxide Enantiomers on Astec® CHIRALDEX® B-PH

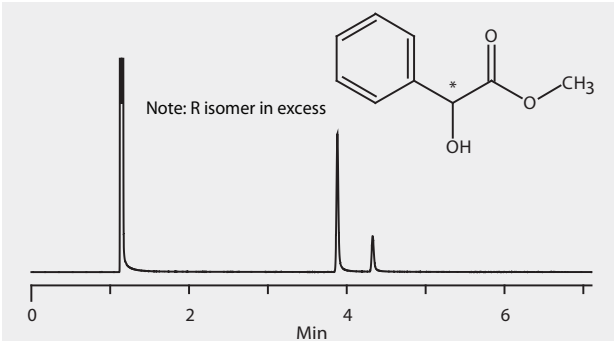
column . . . . Astec CHIRALDEX B-PH, 30 m x 0.25 mm I.D., 0.12 µm (71023AST)
oven . . . . . 90 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: d-cis or d-trans limonene oxide
peak 2: l-cis and trans limonene oxide
peak 3: d-trans or d-cis limonene oxide
Application No. G005066



SUPELCO® Solutions within.™

GC Analysis of Mandelic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 140 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peak 1: R(-)-methyl mandelate
peak 2: S(+)-methyl mandelate
Application No. G005068

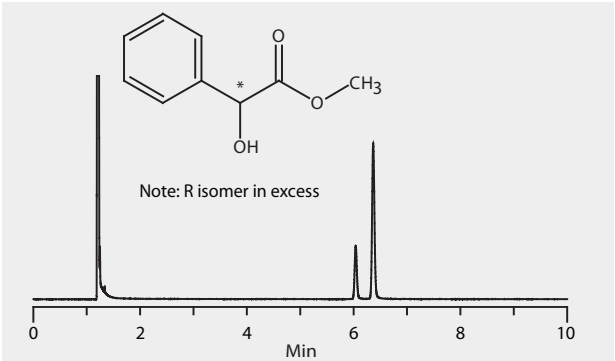


SUPELCO
Solutions within.™

GC Analysis of Mandelic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® G-TA

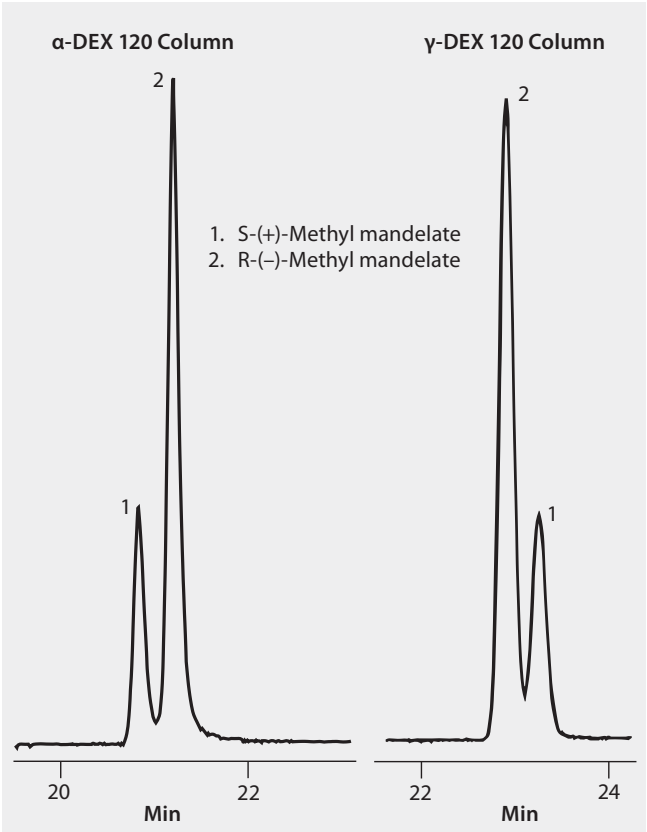
Elution order reversal on CHIRALDEX B-DP.

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 140 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
inj. temp. . . . . 250 °C
sample . . . . . peak 1: S(+)-methyl mandelate
peak 2: R(-)-methyl mandelate
Application No. G005067



GC Analysis of Mandelic Acid Methyl Ester Enantiomers on α-DEX™ 120 and γ-DEX™ 120

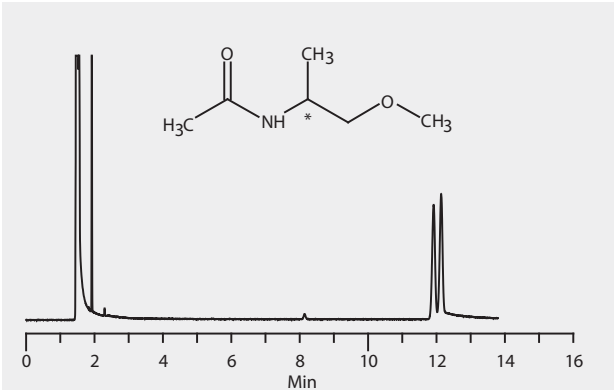
column	α-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24310)
column	γ-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24307)
oven	130 °C
inj. temp.	250 °C
detector	FID, 300 °C
carrier gas	helium, 35 cm/sec
injection	1 µL, 100:1 split
sample	1 mg/mL in methylene chloride
Application No.	794-0282



SUPELCO® Solutions within.™

GC Analysis of 1-Methoxy-2-Propylamine Enantiomers (N-Acetyl Derivatives) on Astec® CHIRALDEX® B-PH

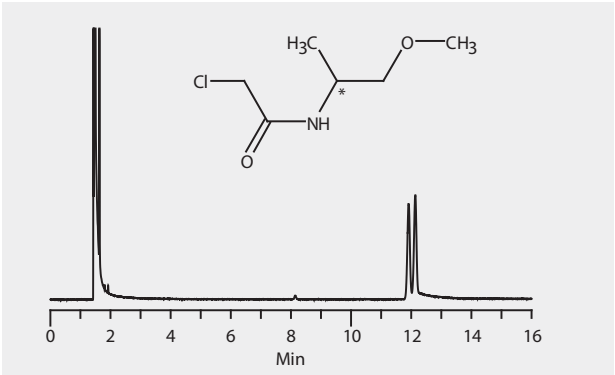
column . . . . Astec CHIRALDEX B-PH, 30 m x 0.25 mm I.D., 0.12 µm (71023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methanol
peaks 1 & 2: 1-methoxy-2-propylamine enantiomers (N-acetyl derivatives)
Application No. G005089



SUPELCO®
Solutions within.™

GC Analysis of 1-Methoxy-2-Propylamine Enantiomers (N-Chloroacetyl Derivatives) on Astec® CHIRALDEX® B-PH

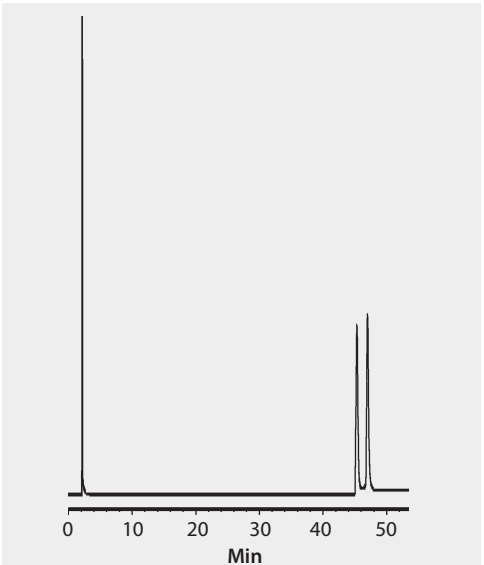
column . . . . Astec CHIRALDEX B-PH, 30 m x 0.25 mm I.D., 0.12 µm (71023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methanol
peaks 1 & 2: 1-methoxy-2-propylamine enantiomers (N-chloroacetyl derivatives)
Application No. G005091



SUPELCO®
Solutions within.™

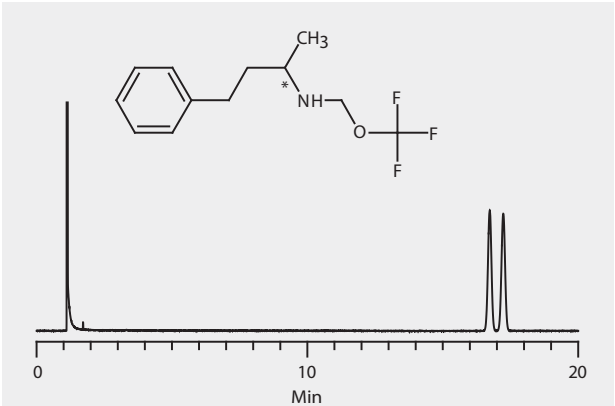
GC Analysis of 4-Methyloctanoic Acid Enantiomers on γ-DEX™ 120

column	γ-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24307)
oven	115 °C
inj. temp.	220 °C
detector	FID, 300 °C
carrier gas	helium, 20 cm/sec
injection	1 µL, 100:1 split
sample	~1 mg/mL each enantiomer in methylene chloride
Application No.	797-0225



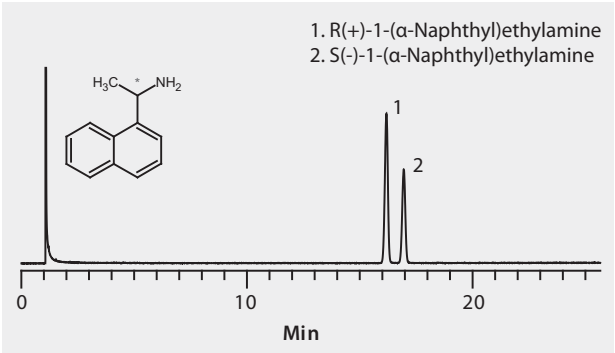
GC Analysis of 1-Methyl-3-Phenylpropylamine (4-Phenyl-2-Butylamine) Enantiomers (N-TFA Derivatives) on Astec® CHIRALDEX® G-TA

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 130 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . peaks 1 & 2: 1-methyl-3-phenylpropylamine (4-phenyl-2-butylamine) enantiomers (N-TFA derivatives)
Application No. G005049



GC Analysis of 1-(α-Naphthyl)ethylamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® B-DA

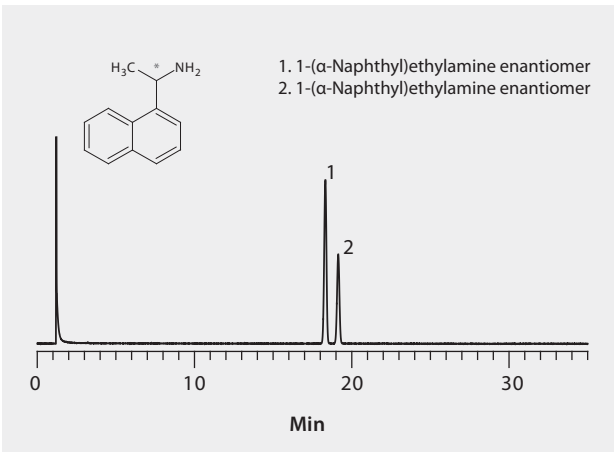
column . . . . Astec CHIRALDEX B-DA, 30 m x 0.25 mm I.D., 0.12 µm (72023AST)
oven . . . . . 160 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 35 psi
sample . . . . . peak 1: R(+)-1-(α-naphthyl)ethylamine
peak 2: S(-)-1-(α-naphthyl)ethylamine
Application No. G005032



SUPELCO®
Solutions within.™

GC Analysis of 1-(α-Naphthyl)ethylamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DA

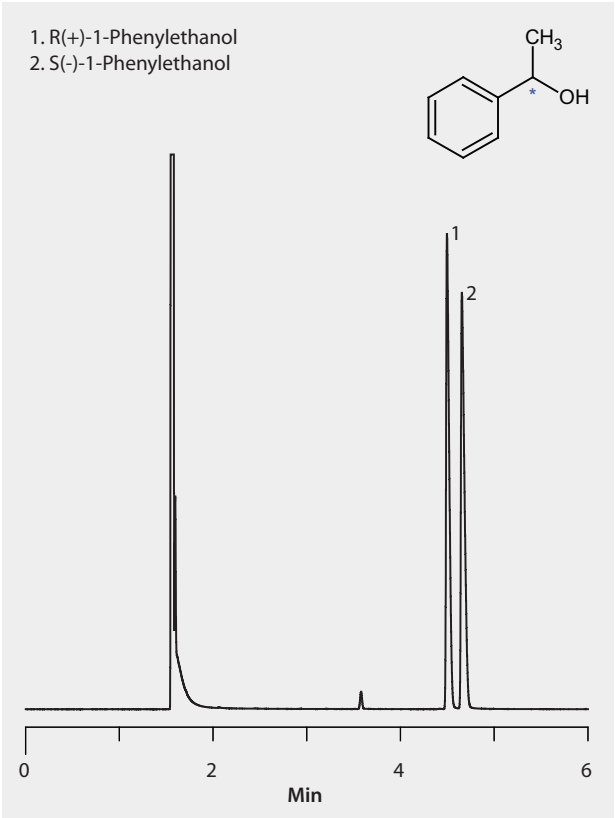
column . . . . Astec CHIRALDEX G-DA, 30 m x 0.25 mm I.D., 0.12 µm (72033AST)
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 35 psi
sample . . . . . peak 1: R(+)-1-(α-naphthyl)ethylamine
peak 2: S(-)-1-(α-naphthyl)ethylamine
Application No. G005031



SUPELCO® Solutions within.™

GC Analysis of 1-Phenylethanol Enantiomers on Astec® CHIRALDEX® B-PM

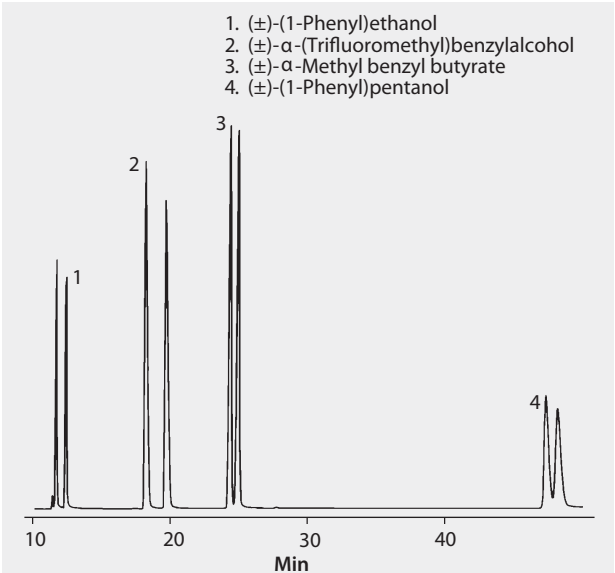
column . . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methanol
peak 1: R(+)-1-phenylethanol
peak 2: S(-)-1-phenylethanol
Application No. G005035



SUPELCO® Solutions within.™

GC Analysis of Phenylethanol Enantiomers on β-DEX™ 120

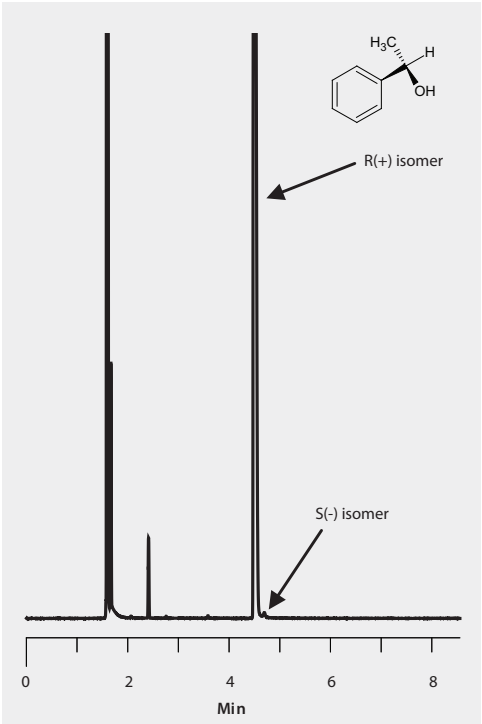
column	β-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24304)
oven	120 °C
inj. temp.	200 °C
detector	FID, 300 °C
carrier gas	helium, 20 cm/sec
injection	1 µL, 100:1 split
sample	0.5 mg/mL each analyte in methylene chloride
Application No.	94-0340



SUPELCO® Solutions within.™

GC Analysis of (R)-(+)-1-Phenylethanol on Astec® CHIRALDEX® B-PM

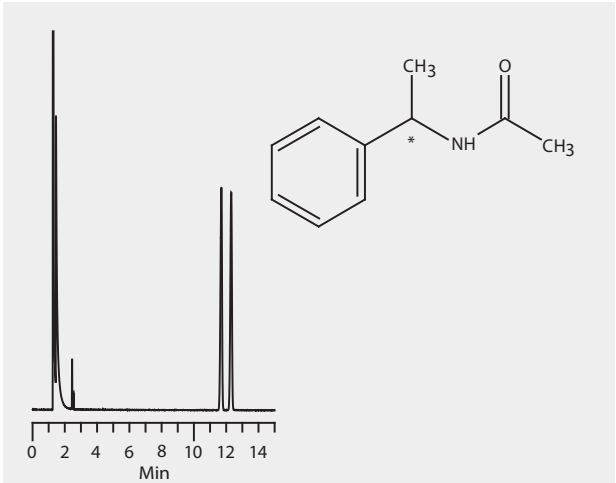
column . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm (76023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: (R)-(+)-1-phenylethanol
Application No. G005036



GC Analysis of 1-Phenylethylamine Enantiomers (N-Acetyl Derivatives) on Astec® CHIRALDEX® B-DM

Can reverse elution order by using CHIRALDEX G-PN, or by using the N-TFA derivative on the B-DM column.

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 135 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: S(-)-1-phenylethylamine (N-acetyl derivative)
peak 2: R(+)-1-phenylethylamine (N-acetyl derivative)
Application No. G005081

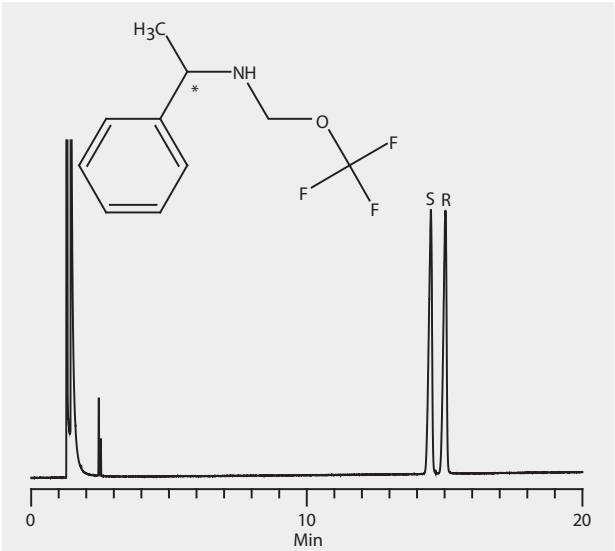


SUPELCO® Solutions within.™

GC Analysis of 1-Phenylethylamine Enantiomers (N-Acetyl Derivatives) on Astec® CHIRALDEX® B-PM

Can reverse elution order by using the N-TFA derivative on CHIRALDEX G-PN or B-DM columns.

column . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm (76023AST)
oven . . . . . 130 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . 3 mg/mL in methylene chloride
peak 1: S(-)-1-phenylethylamine (N-TFA derivative)
peak 2: R(+)-1-phenylethylamine (N-TFA derivative)
Application No. G005107

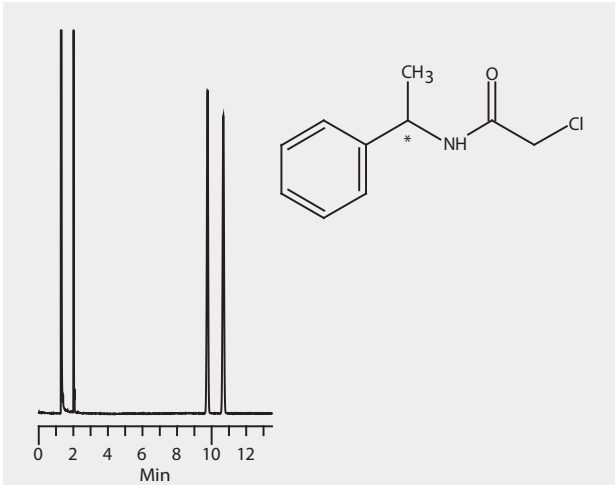


SUPELCO
Solutions within.™

GC Analysis of 1-Phenylethylamine Enantiomers (N-Chloroacetyl Derivatives) on Astec® CHIRALDEX® B-DM

Can reverse elution order by using CHIRALDEX G-PN, or by using the N-TFA derivative on the B-DM column. Shorter retention and higher alpha observed with the N-chloroacetyl derivative compared to the N-acetyl derivative.

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 150 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: S(-)-1-phenylethylamine (N-chloroacetyl derivative)
peak 2: R(+)-1-phenylethylamine (N-chloroacetyl derivative)
Application No. G005082

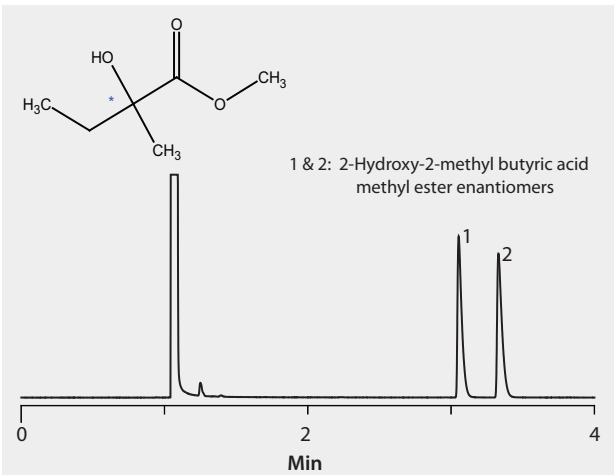


SUPELCO® Solutions within.™

GC Analysis of 1-Phenylethylamine Enantiomers (N-Chloroacetyl Derivatives) on Astec® CHIRALDEX® B-PM

Can reverse elution order by using CHIRALDEX G-PN, or by using the N-TFA derivative on the B-DM column. Shorter retention and higher alpha observed with the N-chloroacetyl derivative compared to the N-acetyl derivative.

column . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm (76023AST)
oven . . . . . 150 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: S(-)-1-phenylethylamine (N-chloroacetyl derivative)
peak 2: R(+)-1-phenylethylamine (N-chloroacetyl derivative)
Application No. G005143

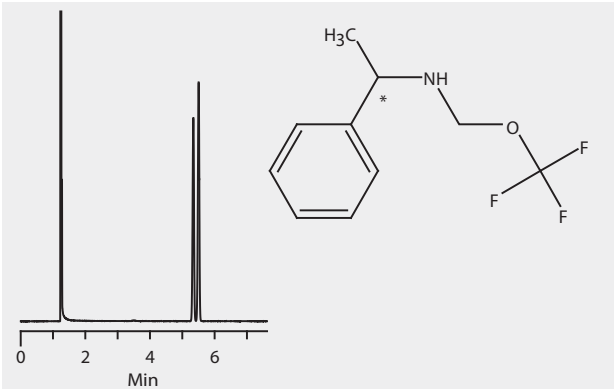


SUPELCO® Solutions within.™

GC Analysis of 1-Phenylethylamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® B-DM

Can reverse elution order by using N-acetyl derivative on CHIRALDEX B-DM and B-PM, the N-chloroacetyl derivative on B-PM, or the N-TFA derivative on B-PH.

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: R(+)-1-phenylethylamine (N-TFA derivative)
peak 2: S(-)-1-phenylethylamine (N-TFA derivative)
Application No. G005080

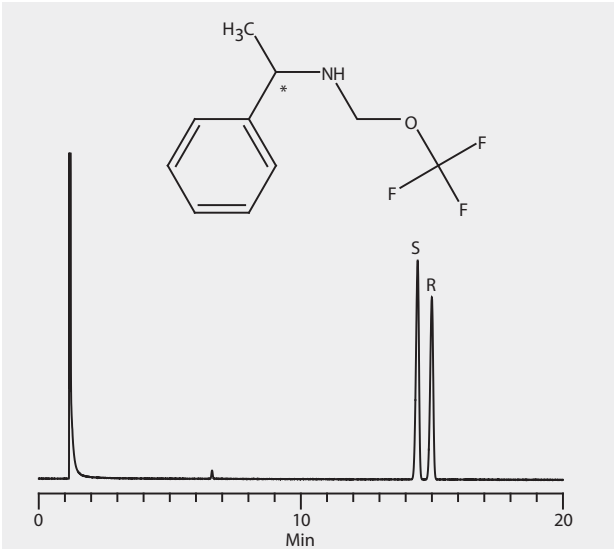


SUPELCO
Solutions within.™

GC Analysis of 1-Phenylethylamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® B-PH

Can reverse elution order by using CHIRALDEX G-PN, or by using the N-TFA derivative on the B-DM column.

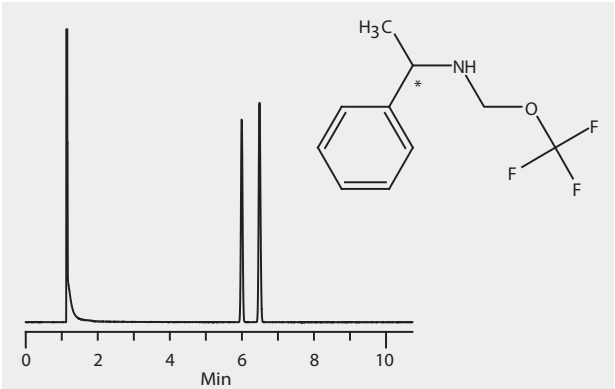
column . . . . Astec CHIRALDEX B-PH, 30 m x 0.25 mm I.D., 0.12 µm (71023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . 3 mg/mL in methylene chloride
peak 1: S(-)-1-phenylethylamine (N-TFA derivative)
peak 2: R(+)-1-phenylethylamine (N-TFA derivative)
Application No. G005106



GC Analysis of 1-Phenylethylamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-PN

Can reverse elution order by using N-acetyl derivative on CHIRALDEX B-DM and B-PM, the N-chloroacetyl derivative on B-PM, or the N-TFA derivative on B-PH.

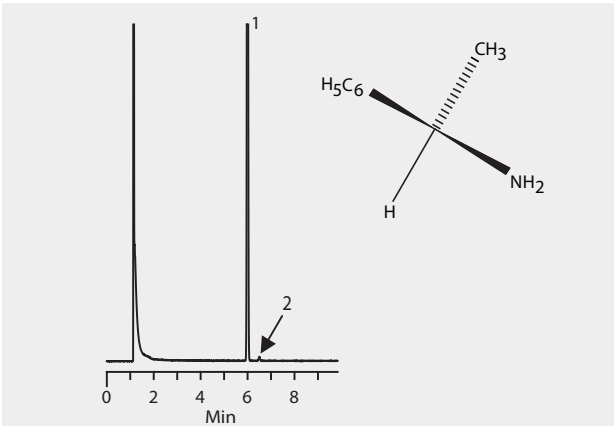
column .... Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven ..... 130 °C
inj. temp. ..... 250 °C
detector ..... FID, 250 °C
carrier gas ..... helium, 30 psi
injection ..... 1 µL, 80:1 split
sample ..... 3 mg/mL in methanol
peak 1: R(+)-1-phenylethylamine (N-TFA derivative)
peak 2: S(-)-1-phenylethylamine (N-TFA derivative)
Application No. G005078



SUPELCO
Solutions within.™

GC Analysis of (R)-(+)-1-Phenylethylamine (N-Trifluoroacetyl Derivative) on Astec® CHIRALDEX® G-PN

column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 130 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methanol
peak 1: (R)-(+)-1-phenylethylamine (N-TFA derivative) (ee% 99.1)
peak 2: (S)-(-)-1-phenylethylamine (N-TFA derivative)
Application No. G005079

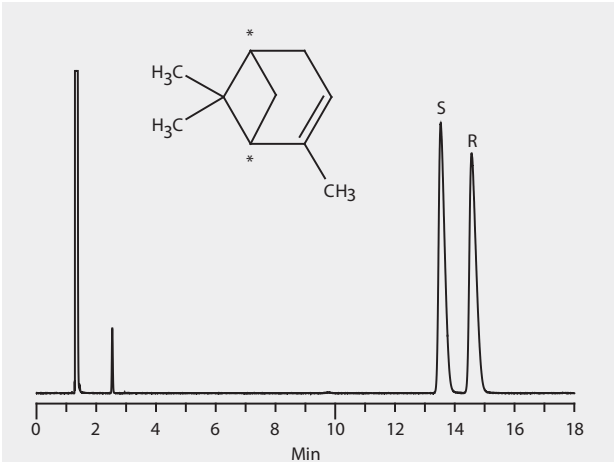


SUPELCO
Solutions within.™

GC Analysis of α-Pinene Enantiomers on Astec® CHIRALDEX® B-DM

Elution order reversal (d,l) on CHIRALDEX G-DP.

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 50 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 4 mg/mL in methylene chloride
peak 1: l-α-pinene (S(-)-α-pinene)
peak 2: d-α-pinene (R(+)-α-pinene)
Application No. G005117

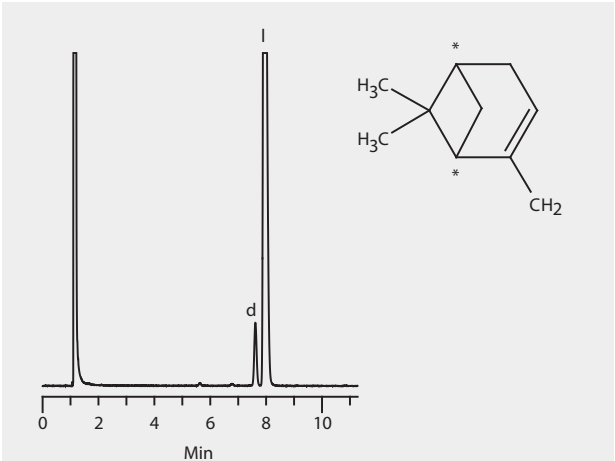


SUPELCO®
Solutions within.™

GC Analysis of β-Pinene Enantiomers on Astec® CHIRALDEX® B-DM

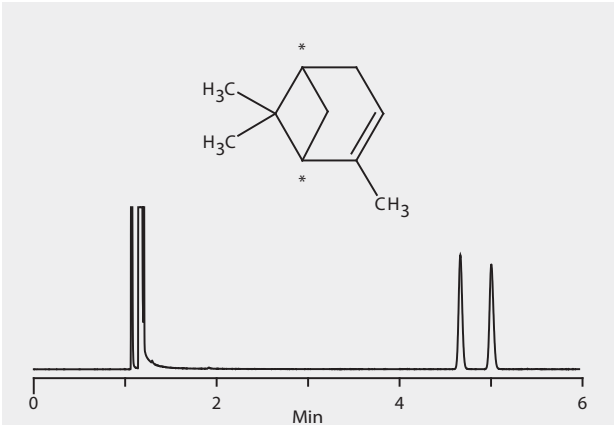
Elution order reversal on CHIRALDEX G-DP.

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 5 mg/mL in ethanol
peak 1: d-β-pinene
peak 2: l-β-pinene
Application No. G005121



GC Analysis of α-Pinene Enantiomers on Astec® CHIRALDEX® G-DP

column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 50 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 4 mg/mL in methylene chloride
peak 1: d-α-pinene (R(+)-α-pinene)
peak 2: l-α-pinene (S(-)-α-pinene)
Application No. G005052

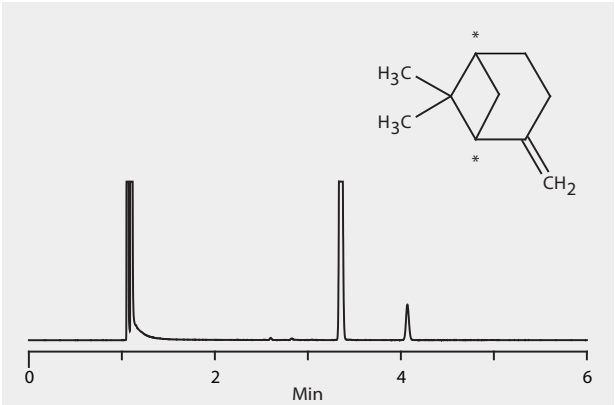


SUPELCO®
Solutions within.™

GC Analysis of β-Pinene Enantiomers on Astec® CHIRALDEX® G-DP

Elution order reversal on CHIRALDEX B-DM and CHIRALDEX B-PM.

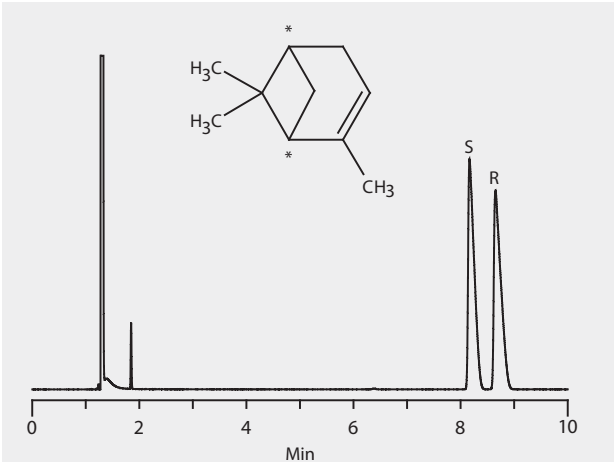
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 5 mg/mL in ethanol
peak 1: l-β-pinene
peak 2: d-β-pinene
Application No. G005054



GC Analysis of α-Pinene Enantiomers on Astec® CHIRALDEX® B-PM

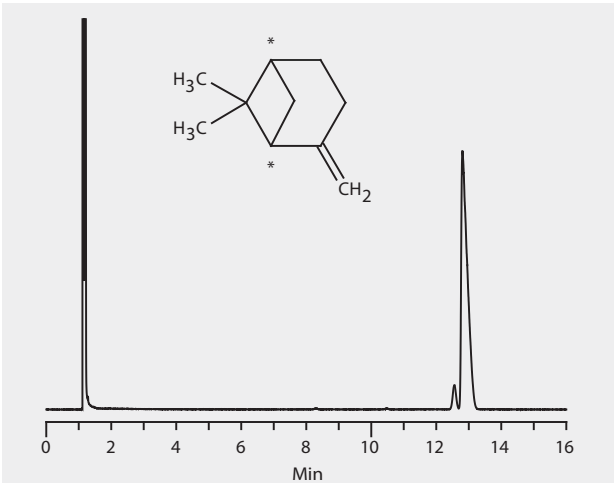
Elution order reversal on CHIRALDEX G-DP.

column . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm (76023AST)
oven . . . . . 50 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 4 mg/mL in methylene chloride
peak 1: l-α-pinene (S(-)-α-pinene)
peak 2: d-α-pinene (R(+)-α-pinene)
Application No. G005116



GC Analysis of β-Pinene Enantiomers on Astec® CHIRALDEX® B-PM

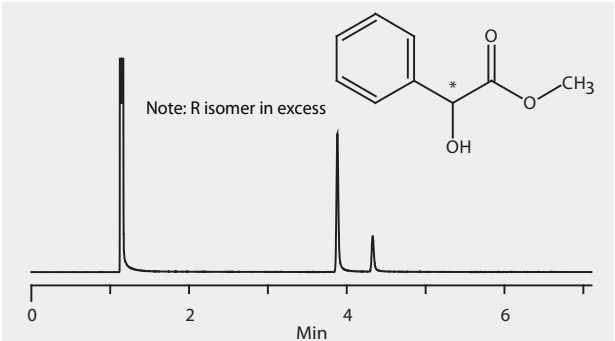
column . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm (76023AST)
oven . . . . . 50 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 5 mg/mL in ethanol
peak 1: d-β-pinene
peak 2: l-β-pinene
Application No. G005055



GC Analysis of Propylene Oxide Enantiomers on Astec® CHIRALDEX® A-TA

Can also substitute CHIRALDEX B-DP for this separation.

column . . . . Astec CHIRALDEX A-TA, 30 m x 0.25 mm I.D., 0.12 µm (73003AST)
oven . . . . . 30 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 3 µL, 80:1 split
sample . . . . . peak 1: R(+)-propylene oxide
peak 2: S(-)-propylene oxide
Application No. G005069



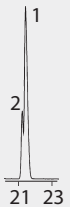
SUPELCO
Solutions within.™

GC Analysis of Terpinen-4-ol and Methyl Mandelate Enantiomers on α-DEX 120, β-DEX 120, and γ-DEX 120

column . . 30 m × 0.25 mm I.D., 0.25 µm (α-DEX 24310, β-DEX 24304, γ-DEX 24307)
oven . . . . . 130 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 35 cm/sec
injection . . . . . 1 µL 100:1 split
sample . . . . . 1 mg/mL in methylene chloride
Application No. 794-0285

γ-DEX 120 Column

1. (+)-Terpinen-4-ol
2. (–)-Terpinen-4-ol



γ-DEX 120 Column

1. S-(+)-Methyl mandelate
2. R-(–)-Methyl mandelate

α-DEX 120 Column

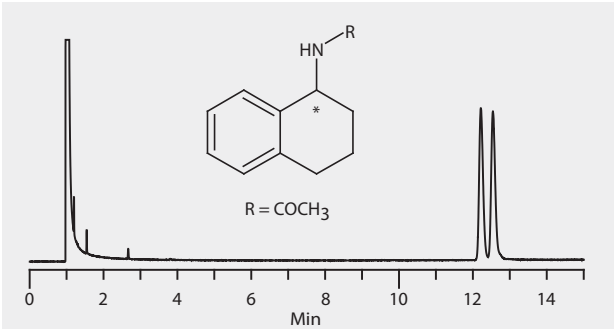
1. S-(+)-Methyl mandelate
2. R-(–)-Methyl mandelate

β-DEX 120 Column

1. (+)-Terpinen-4-ol
2. (–)-Terpinen-4-ol

GC Analysis of 1,2,3,4-Tetrahydro-1-Naphthylamine Enantiomers (N-Acetyl Derivatives) on Astec® CHIRALDEX® B-DA

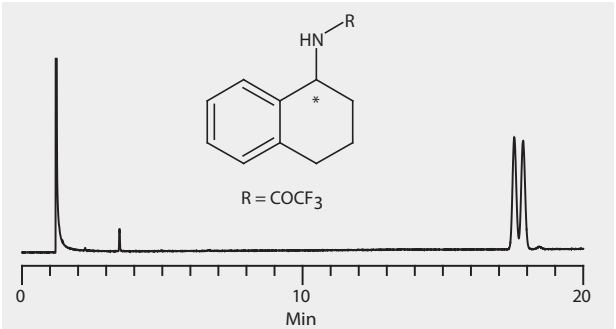
column . . . . Astec CHIRALDEX B-DA, 30 m x 0.25 mm I.D., 0.12 µm (72023AST)
oven . . . . . 180 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 1,2,3,4-tetrahydro-1-naphthylamine enantiomers (N-acetyl derivatives)
Application No. G005074



SUPELCO® Solutions within.™

GC Analysis of 1,2,3,4-Tetrahydro-1-Naphthylamine Enantiomers (N-TFA Derivatives) on Astec® CHIRALDEX® B-DA

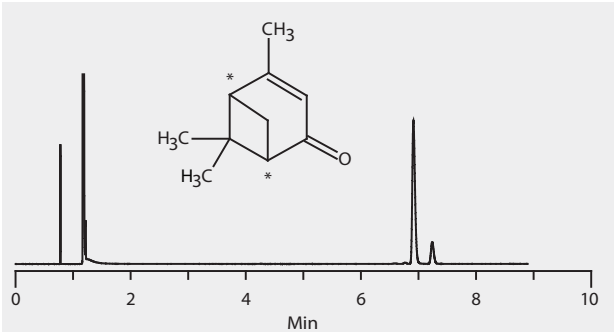
column . . . . Astec CHIRALDEX B-DA, 30 m x 0.25 mm I.D., 0.12 µm (72023AST)
oven . . . . . 140 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 1,2,3,4-tetrahydro-1-naphthylamine enantiomers (N-TFA derivatives)
Application No. G005073



GC Analysis of Verbenone Enantiomers on Astec® CHIRALDEX® B-TA

Can reverse elution order by using CHIRALDEX G-TA.

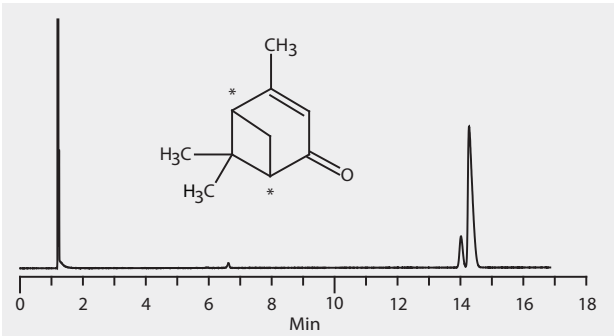
column . . . . Astec CHIRALDEX B-TA, 30 m x 0.25 mm I.D., 0.12 µm (73023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2.5 mg/mL
peak 1: S(-)-verbenone
peak 2: R(+)-verbenone
Application No. G005077



GC Analysis of Verbenone Enantiomers on Astec® CHIRALDEX® G-TA

Can reverse elution order by using CHIRALDEX B-TA.

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2.5 mg/mL
peak 1: R(+)-verbenone
peak 2: S(-)-verbenone
Application No. G005076

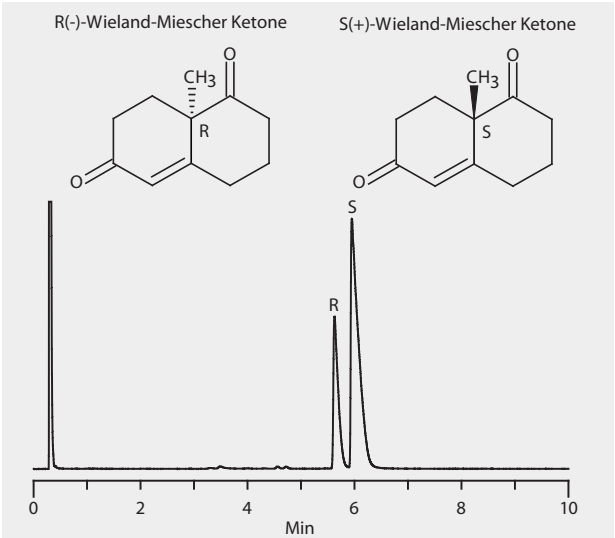


SUPELCO
Solutions within.™

GC Analysis of Wieland-Miescher Ketone Enantiomers on Astec® CHIRALDEX® G-BP

Elution order reversal on CHIRALDEX G-TA and CHIRALDEX G-DP

column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 155 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 12 psi
sample . . . . . peak 1: R(-)-Wieland-Miescher Ketone
peak 2: S(+)-Wieland-Miescher Ketone
Application No. G005099

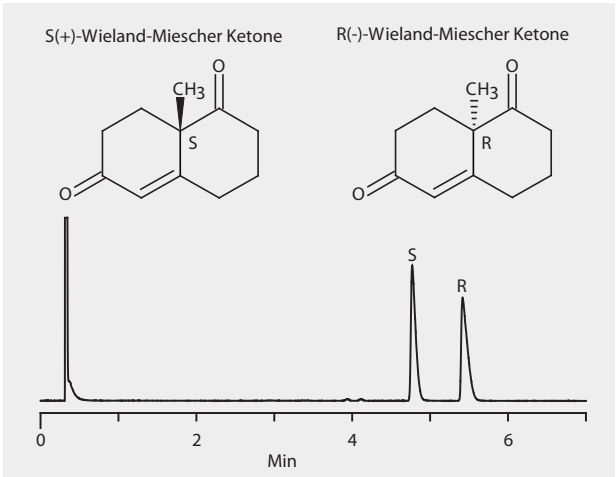


SUPELCO® Solutions within.™

GC Analysis of Wieland-Miescher Ketone Enantiomers on Astec® CHIRALDEX® G-DP

Elution order reversal on CHIRALDEX G-BP.

column . . . . Astec CHIRALDEX G-DP, 10 m x 0.25 mm I.D., 0.12 µm (78031AST)
oven . . . . . 155 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 12 psi
sample . . . . . peak 1: S(+)-Wieland-Miescher Ketone
peak 2: R(-)-Wieland-Miescher Ketone
Application No. G005100

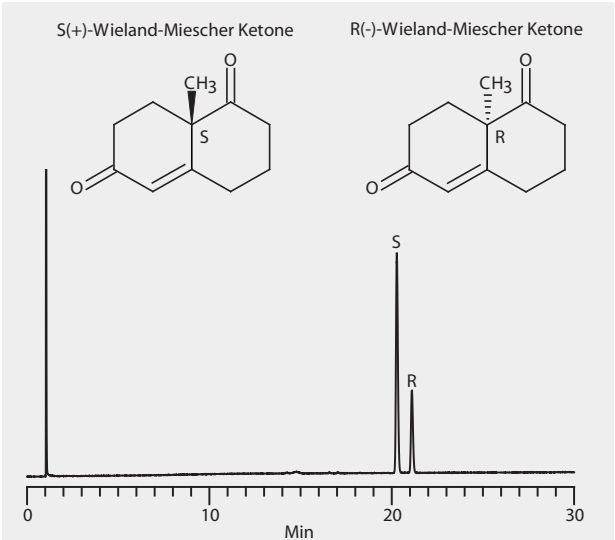


SUPELCO® Solutions within.™

GC Analysis of Wieland-Miescher Ketone Enantiomers on Astec® CHIRALDEX® G-TA

Elution order reversal on CHIRALDEX G-BP.

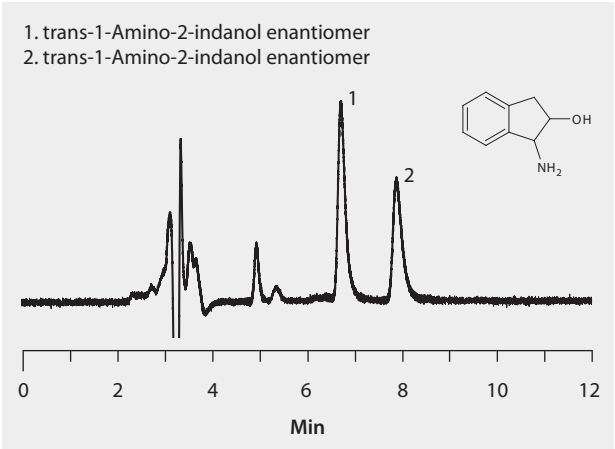
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
gradient . . . . . 110 °C, 5 °C/min to 160 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 35 psi
sample . . . . . peak 1: S(+)-Wieland-Miescher Ketone
peak 2: R(-)-Wieland-Miescher Ketone
Application No. G005098



SUPELCO® Solutions within.™

HPLC Analysis of trans-1-Amino-2-Indanol Enantiomers on LARIHC™ CF6-P

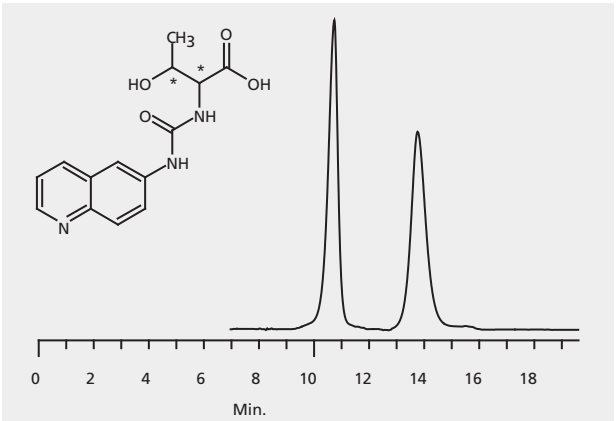
column	LARIHC CF6-P, 25 cm x 4.6 mm I.D., 5 µm particles (AZYP Part No.L1001, available from Supelco/Sigma-Aldrich as a custom item.)
mobile phase	(A) methanol; (B) acetonitrile; (C) acetic acid; (D) triethylamine, (70:30:0.3.0.2, A:B:C:D)
flow rate	1 mL/min
column temp.	20 °C
detector	UV, 254 nm
injection	5 µL
sample	Trans-1-Amino-2-indanol, 0.3 mg/mL in ethanol
Application No.	G005256



Ref: 1. Ping Sun, Chunlei Wang, Zachary S. Breitbach, Ying Zhang, and Daniel W. Armstrong, Development of New HPLC Chiral Stationary Phases Based on Native and Derivatized Cyclofructans *Anal. Chem.* **81**, 10215 (2009)
2. Ping Sun and Daniel W. Armstrong, Effective enantiomeric separations of racemic primary amines by the isopropyl carbamate-cyclofructan6 chiral stationary phase *J. Chromatogr. A.* **1217**, 4904 (2010)

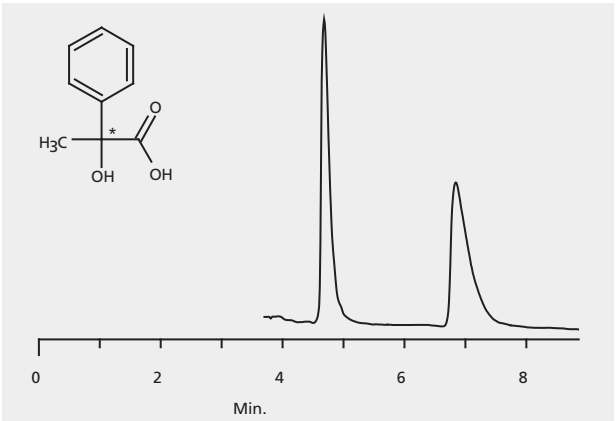
HPLC Analysis of AQC-Threonine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (90:10, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004578



HPLC Analysis of Atrolactic Acid Enantiomers on Astec® CHIROBIOTIC® R

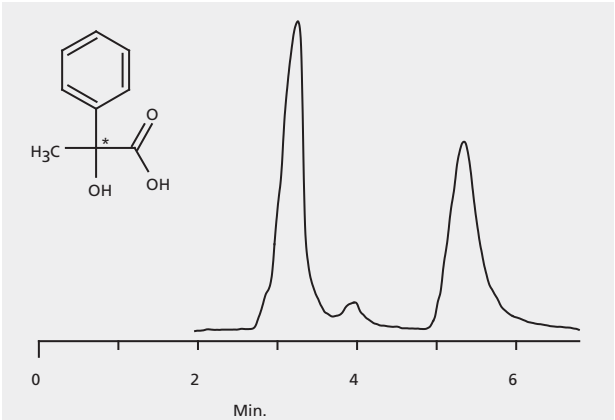
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1 wt% ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004594



SUPELCO® Solutions within.™

HPLC Analysis of Atrolactic Acid Enantiomers on Astec® CHIROBIOTIC® TAG

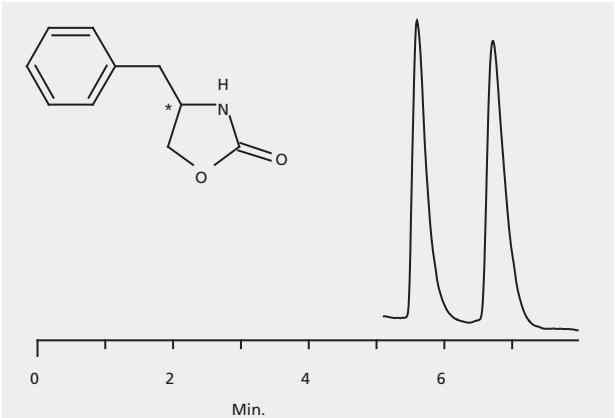
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . 0.1 wt% ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004604



SUPELCO® Solutions within.™

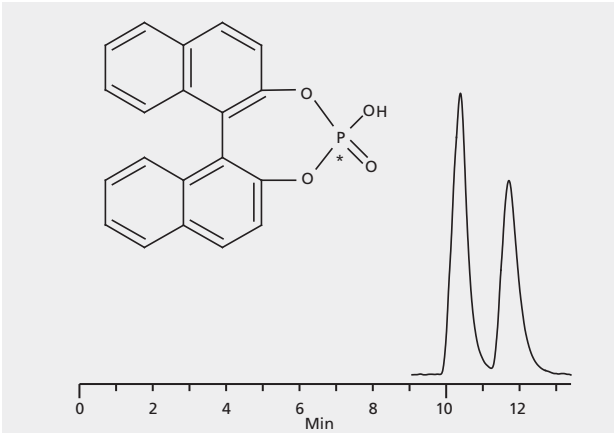
HPLC Analysis of 4-Benzyl-2-oxazolidinone Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004605



HPLC Analysis of 1,1′-Binaphthyl-2,2′-diyl Hydrogenphosphate Enantiomers on Astec® (R,R) P-CAP™

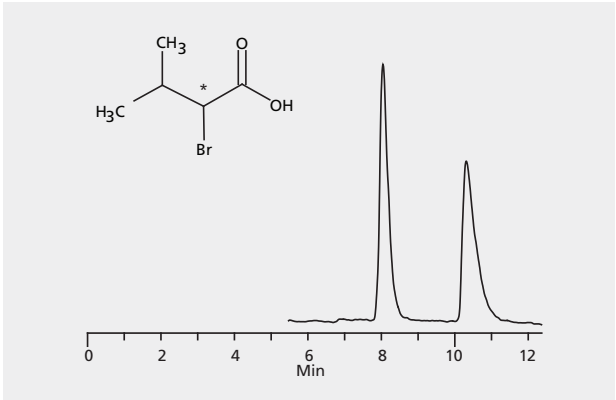
column . . . . Astec (R,R) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST)
mobile phase . . . . . 20 mM ammonium acetate in: (A) acetonitrile; (B) methanol; (70:30, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004718



SUPELCO®
Solutions within.™

HPLC Analysis of 2-Bromo-3-Methylbutyric Acid Enantiomers on Astec® CHIROBIOTIC® R

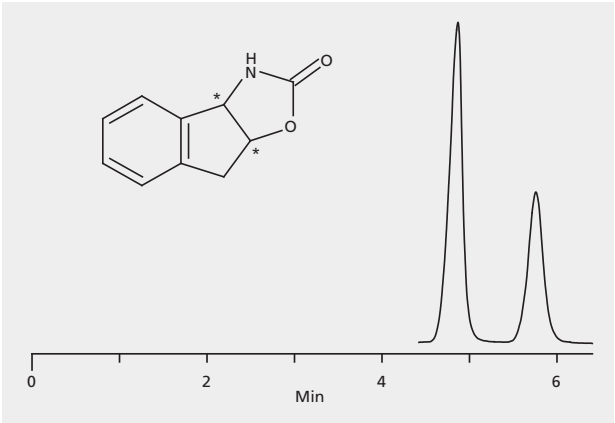
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . (A) 20 mM ammonium acetate; (B) methanol; (15:85, A:B)
(alternate mobile phase of 0.1% ammonium acetate in methanol gives 3.5 and 4.3 min retention)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004667



SUPELCO
Solutions within.™

HPLC Analysis of Cis-(+/-)-3,3a,8,8a-Tetrahydro-2H-indeno[1,2-d]oxazol-2-one Enantiomers on Astec® (R,R) P-CAP™-DP

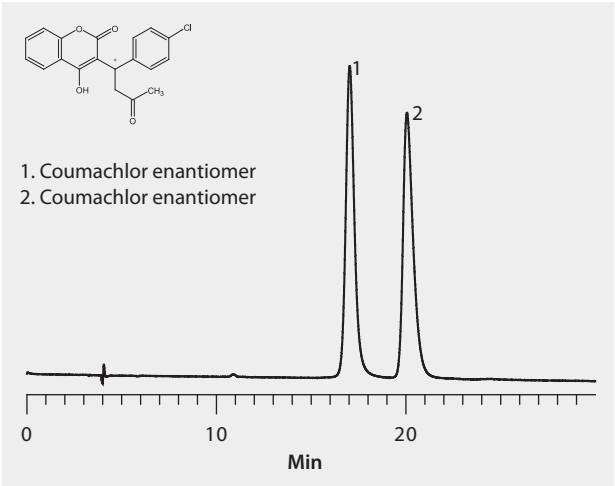
column . . Astec (R,R) P-CAP-DP, 25 cm x 4.6 mm I.D., 5 µm particles (35024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (98:2, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004729



SUPELCO® Solutions within.™

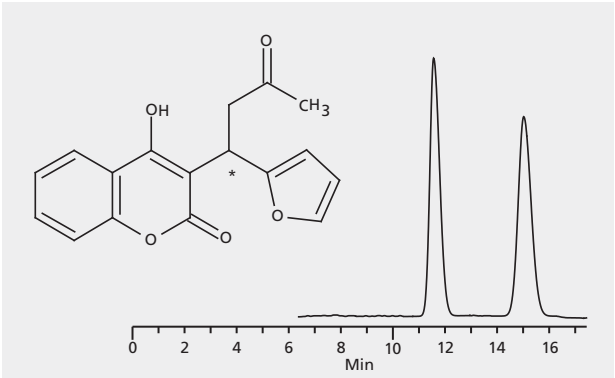
HPLC Analysis of Coumachlor Enantiomers on Astec® CYCLOBOND® I 2000 DM

column . . CYCLOBOND I 2000 DM, 25 cm x 4.6 mm I.D., 5 µm particles (20924AST)
mobile phase . . (A) acetonitrile; (B) 20 mM ammonium acetate, pH 2.9; (20:80, A:B)
flow rate . . . . . 0.8 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 3 µL
sample . . . . . coumachlor, 1 mg/mL in acetonitrile:water (50:50)
Application No. G005160



HPLC Analysis of Coumafuryl Enantiomers on Astec® CHIROBIOTIC® V

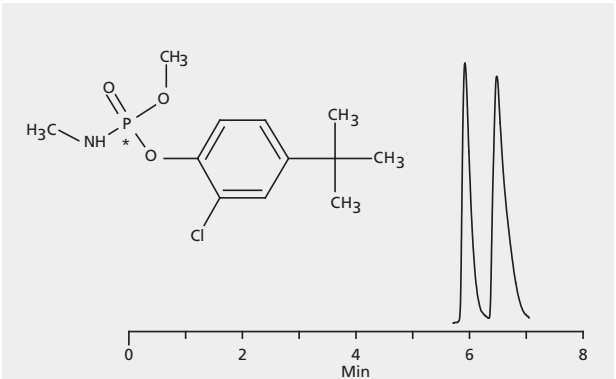
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM ammonium nitrate, pH 5.5; (B) THF; (90:10, A:B)
flow rate . . . . . 1.2 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004639



SUPELCO
Solutions within.™

HPLC Analysis of Crufomate (Ruelene) Enantiomers on Astec® CYCLOBOND® I 2000

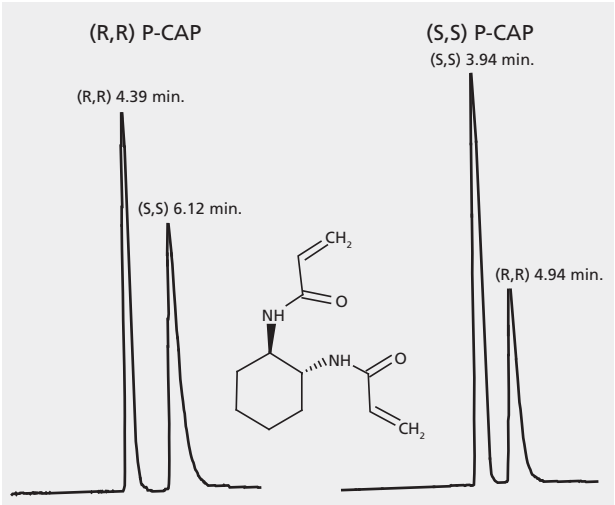
column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . (A) acetonitrile; (B) acetic acid; (C) triethylamine; (100:0.2:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004703



SUPELCO
Solutions within.™

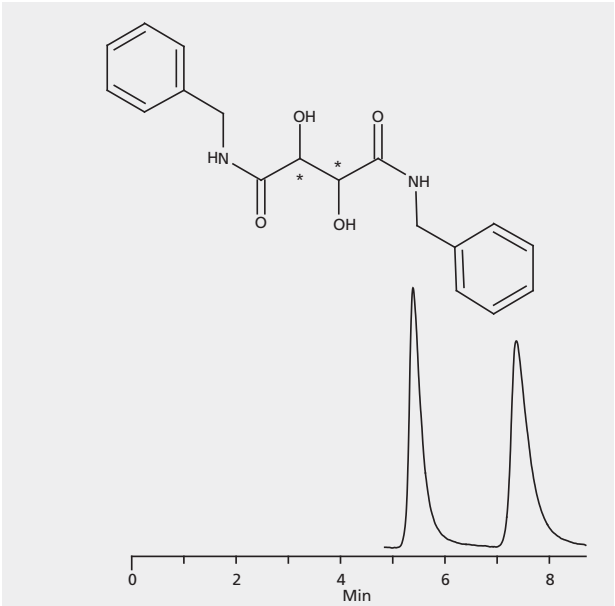
HPLC Analysis of DACH-ACR Enantiomers on Astec® P-CAP™

column . . . . . Astec (R,R) P-CAP or (S,S) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST, 33024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (97:3, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . (R,R)- and (S,S)-DACH-ACR (N-(2-acryloylamino-(1R,2R)-cyclohexyl)-acrylamide)
Application No. G004401



HPLC Analysis of (+/-)-N,N-Dibenzyltartaric Diamide Enantiomers on Astec® (R,R) P-CAP™-DP

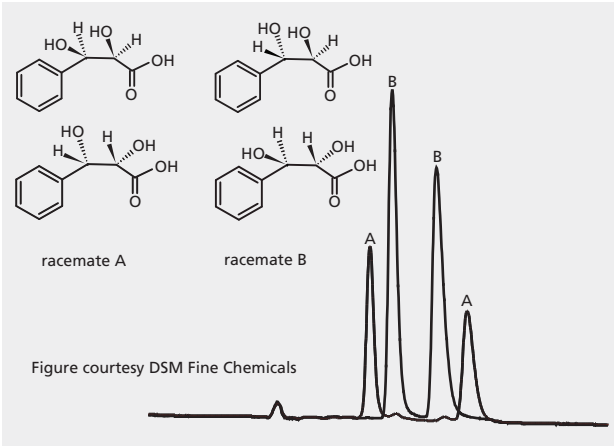
column . . Astec (R,R) P-CAP-DP, 25 cm x 4.6 mm I.D., 5 µm particles (35024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004727



SUPELCO
Solutions within.™

HPLC Analysis of 2,3-Dihydroxy-3-Phenylpropionic Acid Enantiomers on CHIROBIOTIC R

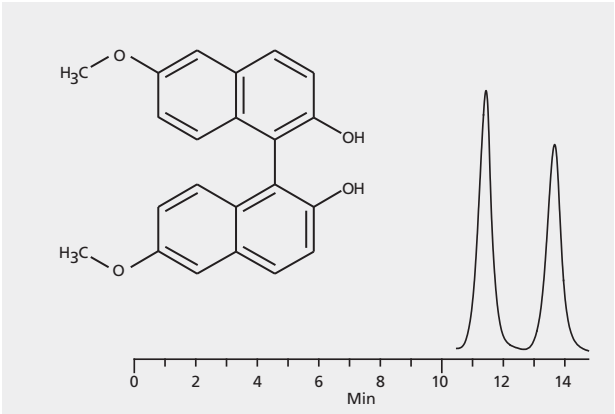
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . (A) 0.1% ammonia, pH 4.1 with formic acid;
(B) methanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 258 nm
injection . . . . . 10 µL
sample . . . . . 2,3-dihydroxy-3-phenyl-propionic acid isomers:
(A) racemate A (4.85 and 6.95 min)
(B) racemate B (5.33 and 6.29 min)
Application No. G004409



SUPELCO
Solutions within.™

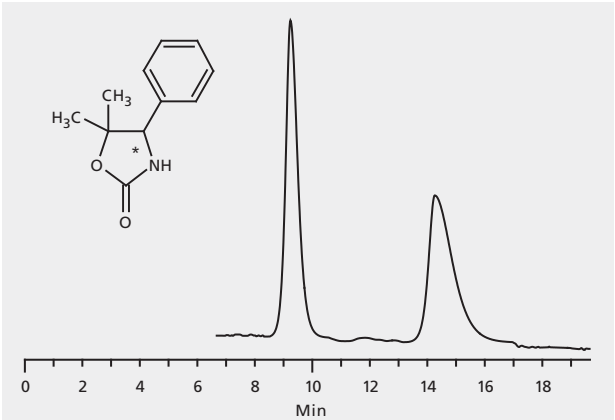
HPLC Analysis of Di-6,6′-Methoxy-bi(2-Naphthol) Enantiomers on Astec® (R,R) P-CAP™

column . . . . Astec (R,R) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST)
mobile phase . . . . . (A) ethanol; (B): heptane; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004724



HPLC Analysis of 5,5-Dimethyl-4-phenyl-2-oxazolidinone Enantiomers on Astec® CHIROBIOTIC® T

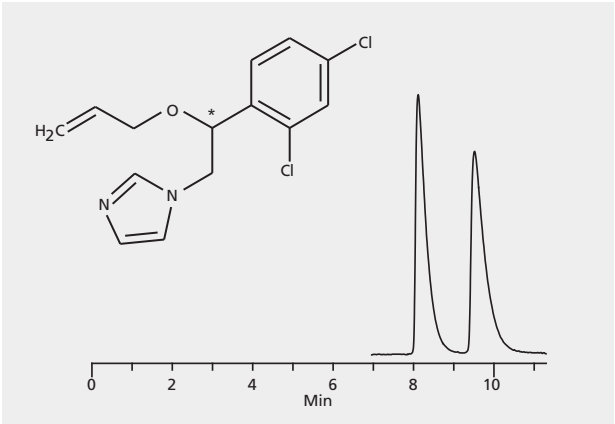
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 0.5% triethylamine acetate, pH 4.1; (B) methanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004547



SUPELCO® Solutions within.™

HPLC Analysis of Enilconazol (Imazalil) Enantiomers on Astec® CYCLOBOND® I 2000

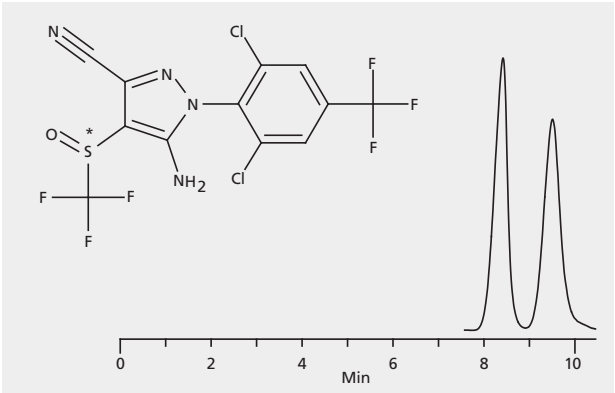
column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . (A) 0.1% triethylamine acetate, pH 4.1; (B) acetonitrile; (90:10, A:B)
flow rate . . . . . 0.7 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004690



SUPELCO® Solutions within.™

HPLC Analysis of Fipronil Enantiomers on Astec® (R,R) P-CAP™

column . . . . Astec (R,R) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST)
mobile phase . . . . . (A) heptane; (B) ethanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 235 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004720

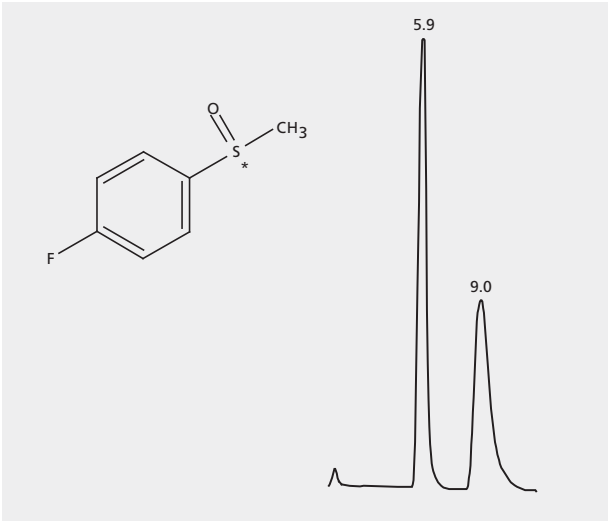


SUPELCO® Solutions within.™

HPLC Analysis of p-Fluorophenyl Methyl Sulfoxide Enantiomers on Astec® CHIROBIOTIC® TAG

Details: A. Berthod *et al*, J. Chromatogr A, 955 (2002) 53-69.

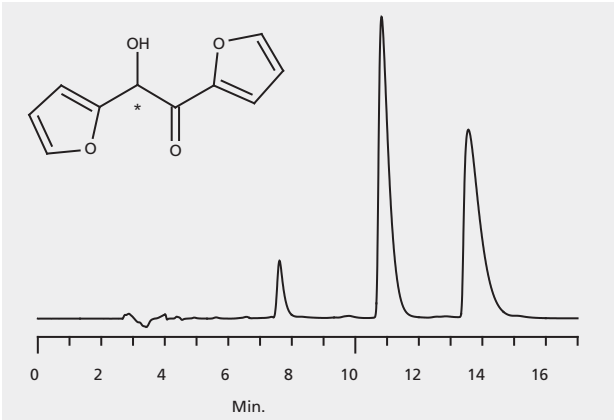
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . (A) hexane; (B) ethanol; (50:50, A:B)
flow rate . . . . . 2 mL/min
detector . . . . . UV, polarimetry to confirm elution order
Application No. G004735



SUPELCO
Solutions within.™

HPLC Analysis of Furoin Enantiomers on Astec® P-CAP™-DP

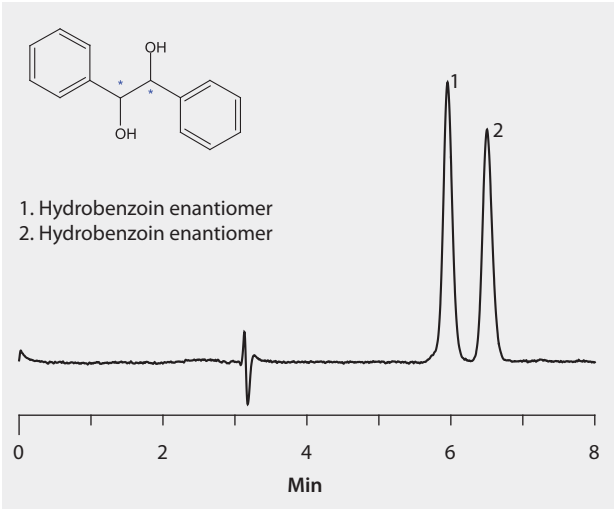
column . . . . . (R,R) P-CAP-DP, 25 cm x 4.6 mm I.D., 5 µm particles (35024AST)
mobile phase . . . . . (A) hexane; (B) ethanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 235 nm
injection . . . . . 10 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004587



SUPELCO® Solutions within.™

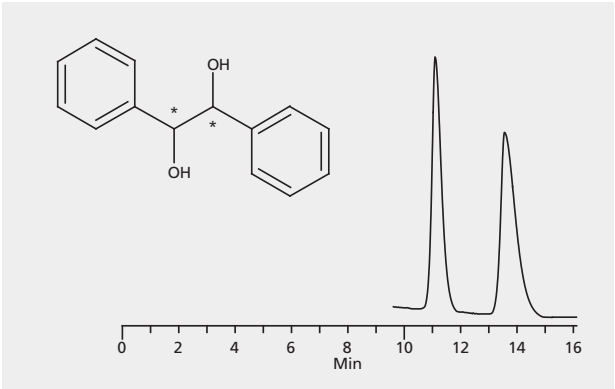
HPLC Analysis of Hydrobenzoin Enantiomers on Astec® CYCLOBOND® I 2000 RSP

column . . CYCLOBOND I 2000 RSP, 25 cm x 4.6 mm I.D., 5 µm particles (20324AST)
mobile phase . . (A) acetonitrile; (B) 10 mM ammonium acetate, pH 4.0; (25:75, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . hydrobenzoin, 1 mg/mL in acetonitrile:water (50:50)
Application No. G005163



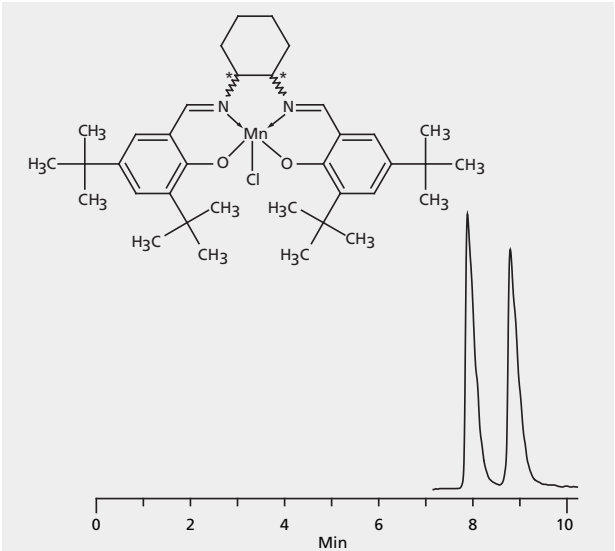
HPLC Analysis of Hydrobenzoin Enantiomers on Astec® CYCLOBOND® I 2000

column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) acetonitrile; (80:20, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004692



HPLC Analysis of Jacobsen Catalyst Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP (Ammonium Hydroxide Mobile Phase)

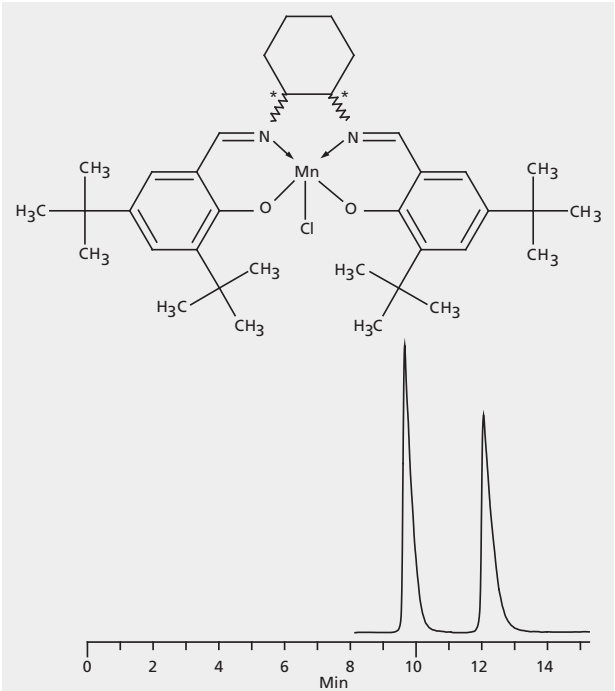
column	CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase	(A) acetonitrile; (B) methanol; (C) acetic acid; (D) ammonium hydroxide; (85:15:0.4:0.1, A:B:C:D)
flow rate	0.9 mL/min
column temp.	25 °C
detector	UV, 254 nm
injection	5 µL
sample	2 mg/mL in methanol
Application No.	G004714



SUPELCO® Solutions within.™

HPLC Analysis of Jacobsen Catalyst Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP (TEA mobile phase)

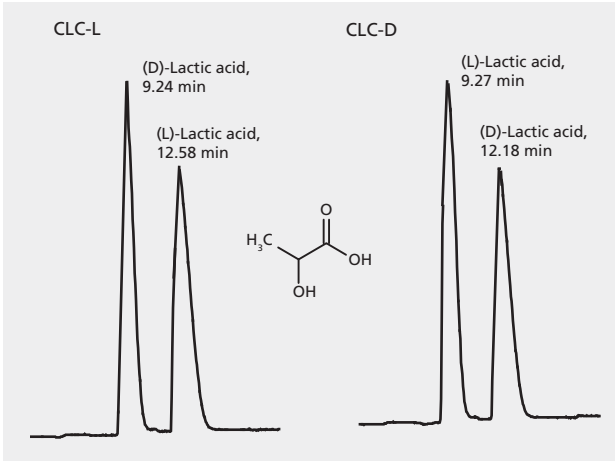
column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) triethylamine; (95:5:0.2:0.1, A:B:C:D)
column temp. . . . . 25 °C
flow rate . . . . . 1.5 mL/min
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004715



SUPELCO
Solutions within.™

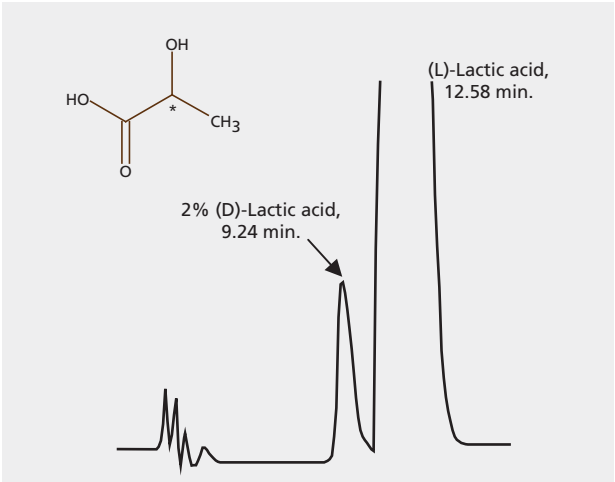
HPLC Analysis of Lactic Acid Enantiomers on Astec® CLC-L and CLC-D

column	Astec CLC-L and CLC-D, 15 cm x 4.6 mm I.D., 5 µm particles (53023AST, 53123AST)
mobile phase	5 mM copper sulfate
flow rate	1 mL/min
column temp.	25 °C
detector	UV, 254 nm
injection	10 µL
Application No.	G004399



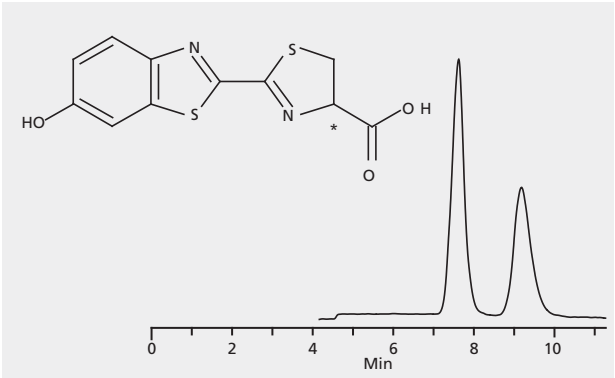
HPLC Analysis of Lactic Acid Enantiomers on Astec® CLC-L, Trace Level Detection

column . . . . . Astec CLC-L, 15 cm x 4.6 mm I.D., 5 µm particles (53123AST)
mobile phase . . . . . 5 mM copper sulfate
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 5 mg/mL in water
Application No. G004663



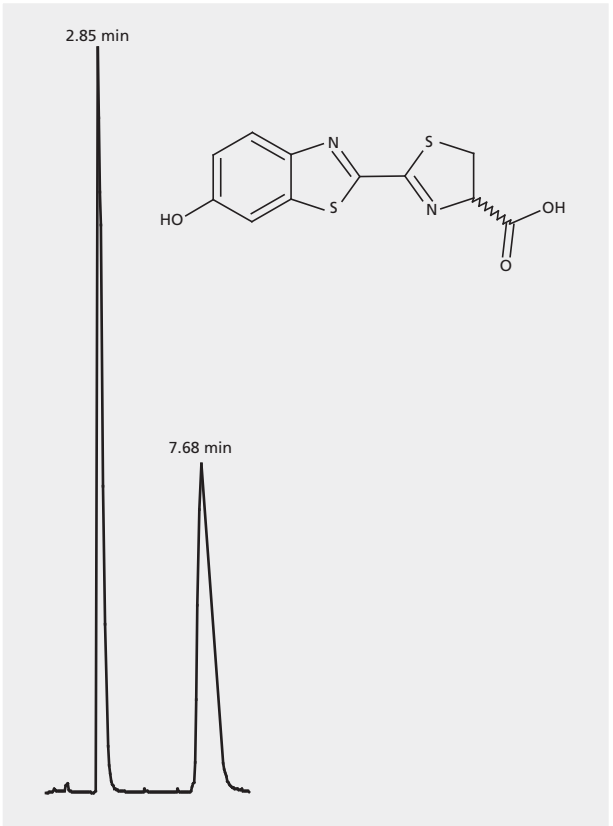
HPLC Analysis of Luciferin Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM ammonium nitrate, pH 5.5; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 254 nm
injection . . . . . 6 µL
sample . . . . . 0.5 mg/mL in methanol
Application No. G004641



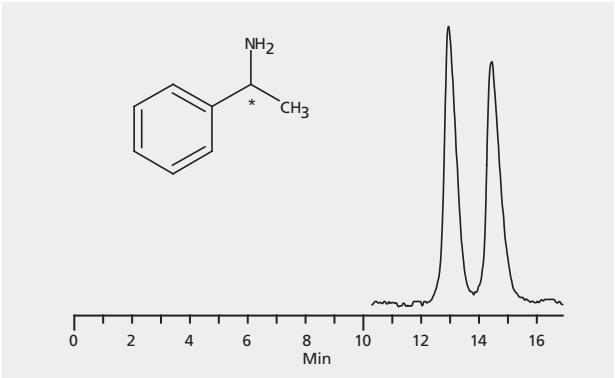
HPLC Analysis of Luciferin Enantiomers on CHIRALPAK® AGP

column . . . . . CHIRALPAK AGP, 10 cm x 4 mm I.D., 5 µm particles (58150AST)
mobile phase . . . . . 10 mM sodium phosphate, pH 6.0
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 225 nm
sample . . . . . luciferin
Application No. G004398



HPLC Analysis of α-Methylbenzylamine Enantiomers on Astec® CHIROBIOTIC® V

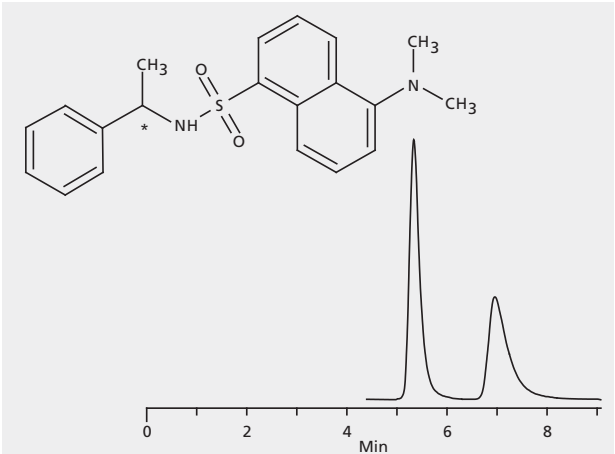
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) hexane; (B) isopropanol; (90:10, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004642



SUPELCO
Solutions within.™

HPLC Analysis of α-Methylbenzylamine Enantiomers on Astec® CYCLOBOND® I 2000 DMP

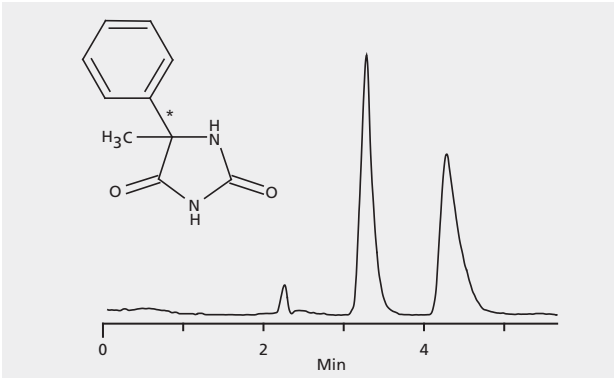
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . . . . ethanol
flow rate . . . . . 1.2 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 3 mg/mL in methanol
Application No. G004698



SUPELCO
Solutions within.™

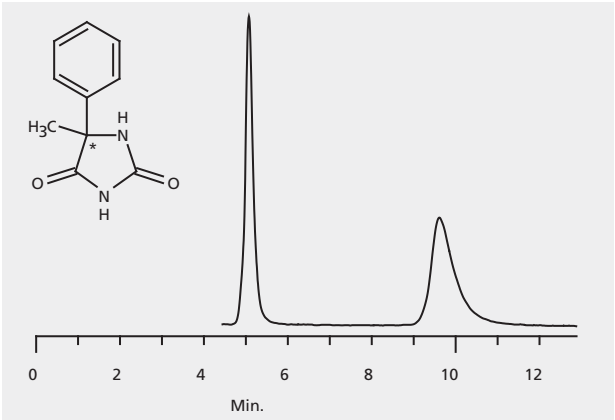
HPLC Analysis of 5-Methyl-5-Phenylhydantoin Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . ethanol
flow rate . . . . . 1.5 mL/min
column temp. . . . . ambient
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 4 mg/mL in methanol
Application No. G004643



HPLC Analysis of 5-Methyl-5-Phenylhydantoin Enantiomers on Astec® CHIROBIOTIC® TAG (Fast Flow)

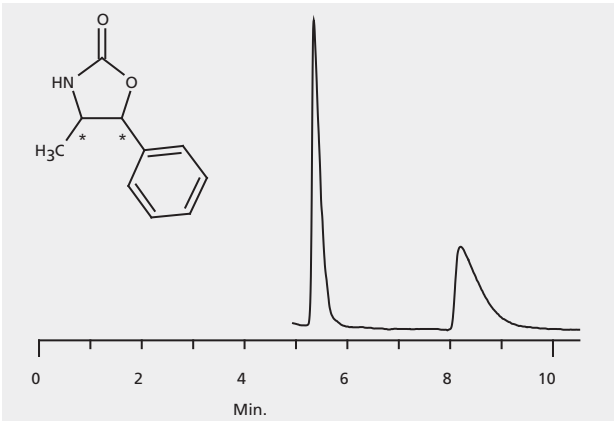
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . methanol
flow rate . . . . . 0.8 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 220 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004613



SUPELCO® Solutions within.™

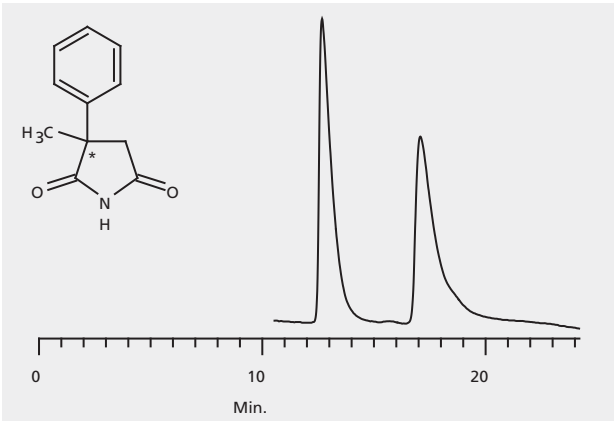
HPLC Analysis of 4-Methyl-5-Phenyl-2-Oxazolidone Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . methanol
flow rate . . . . . 0.8 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004612



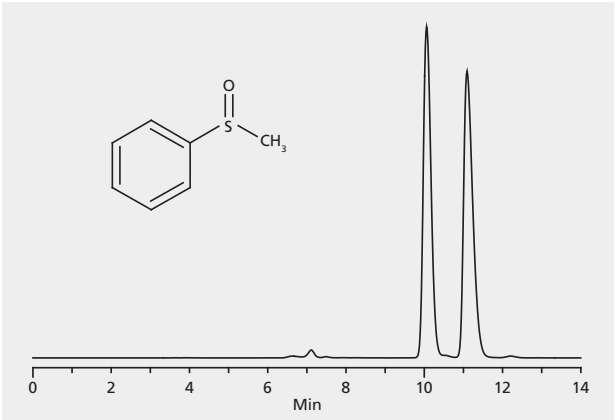
HPLC Analysis of α-Methyl-α-Phenylsuccinimide Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . (A) hexane; (B) ethanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 220 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004611



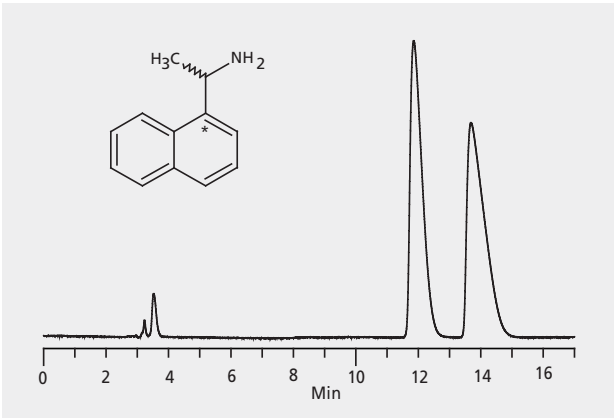
HPLC Analysis of Methyl Phenyl Sulfoxide Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . methanol
flow rate . . . . . 0.48 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in mobile phase
Application No. G004407



HPLC Analysis of 1-(1-Naphthyl)ethylamine Enantiomers on Astec® CHIROBIOTIC® V2

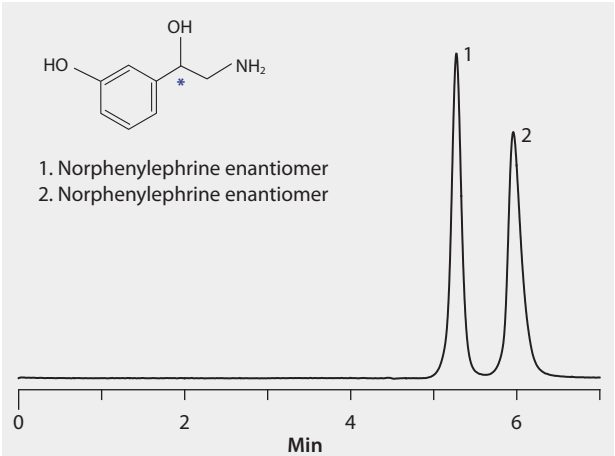
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . (A) methanol; (B) 20 mM ammonium acetate; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 1 mgl/mL in methanol
Application No. G004458



SUPELCO® Solutions within.™

HPLC Analysis of Norphenylephrine Enantiomers on Astec® CYCLOBOND® I 2000 AC (pH 5.0)

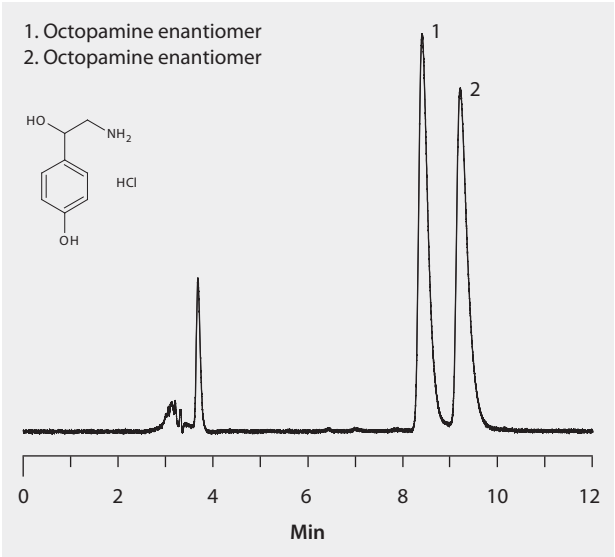
column . . CYCLOBOND I 2000 AC, 25 cm x 4.6 mm I.D., 5 µm particles (20124AST)
mobile phase . . (A) methanol; (B) 20 mM ammonium acetate, pH 5.0; (5:95, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . norphenylephrine, 1 mg/mL in acetonitrile:water (50:50)
Application No. G005159



SUPELCO® Solutions within.™

HPLC Analysis of Octopamine Enantiomers on LARIHC™ CF6-P

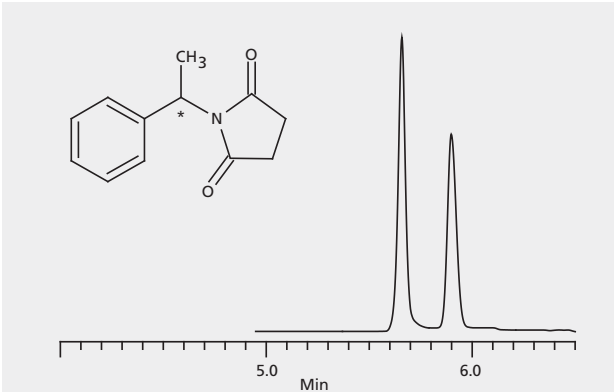
column . . LARIHC CF6-P, 25 cm x 4.6 mm I.D., 5 µm particles (AZYP Part No.L1001, available from Supelco/Sigma-Aldrich as a custom item.)
mobile phase . . . . . (A) methanol: (B) acetonitrile: (C) acetic acid: (D) triethylamine, (70:30:0.3.0.2, A:B:C:D)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . Octopamine, 0.3 mg/mL in ethanol
Application No. G005258



Ref: 1. Ping Sun, Chunlei Wang, Zachary S. Breitbach, Ying Zhang, and Daniel W. Armstrong, Development of New HPLC Chiral Stationary Phases Based on Native and Derivatized Cyclofructans *Anal. Chem.* **81**, 10215 (2009)
2. Ping Sun and Daniel W. Armstrong, Effective enantiomeric separations of racemic primary amines by the isopropyl carbamate-cyclofructan6 chiral stationary phase *J. Chromatogr. A.* **1217**, 4904 (2010)

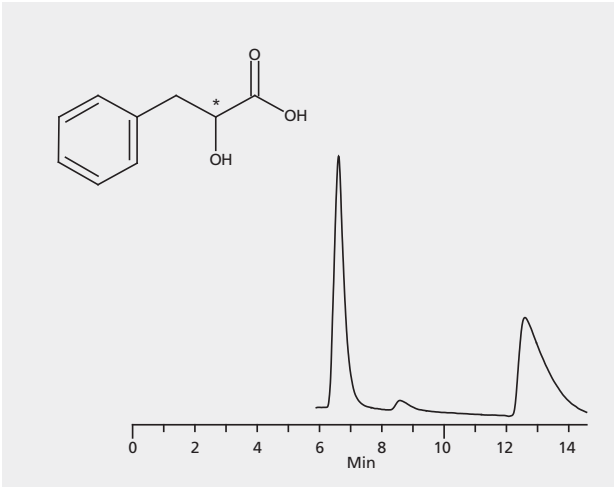
HPLC Analysis of N-(1-Phenylethyl)maleimide Enantiomers on Astec® CHIROBIOTIC® R

column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . (A) 0.1% triethylamine acetate, pH 4.1; (B) methanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 3 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004668



HPLC Analysis of 3-Phenyllactic Acid Enantiomers on Astec® CHIROBIOTIC® R

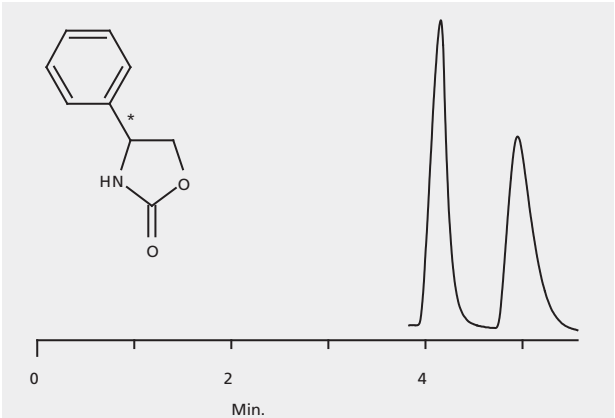
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1% ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 0.5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004680



SUPELCO®
Solutions within.™

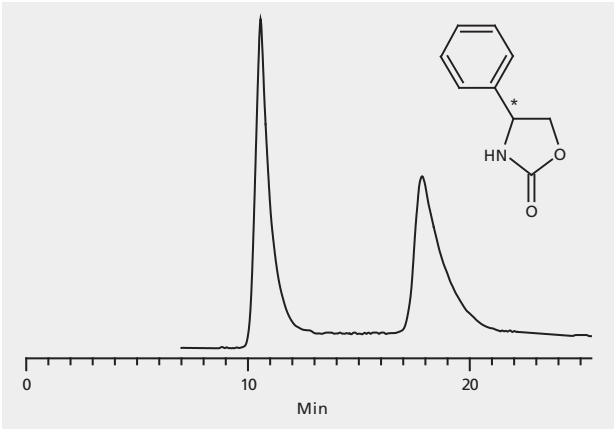
HPLC Analysis of 4-Phenyl-2-Oxazolidinone Enantiomers on Astec® CHIROBIOTIC® T2

column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004599



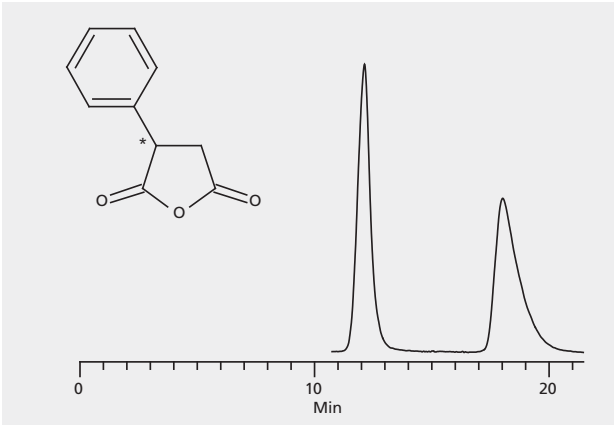
HPLC Analysis of 4-Phenyl-2-oxazolidinone Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 0.5% triethylamine acetate, pH 4.1; (B) methanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004548



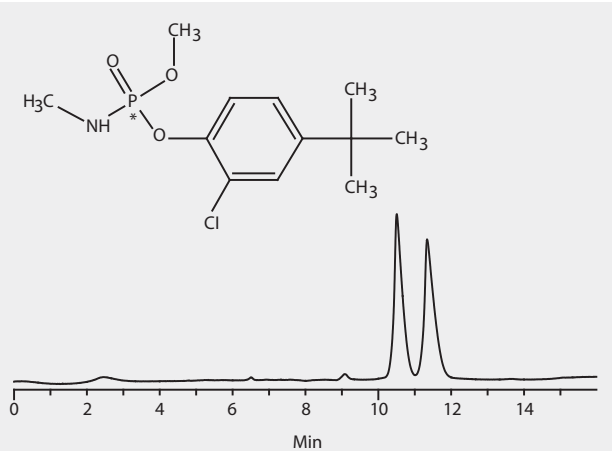
HPLC Analysis of Phenylsuccinic Anhydride Enantiomers on Astec® (R,R) P-CAP™-DP

column . . Astec (R,R) P-CAP-DP, 25 cm x 4.6 mm I.D., 5 µm particles (35024AST)
mobile phase . . (A) acetonitrile; (B) methanol; (C) trifluoroacetic acid; (99:1/0.1 (A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004728



HPLC Analysis of Ruelene (Cruformate) Enantiomers on Astec® CYCLOBOND® I 2000

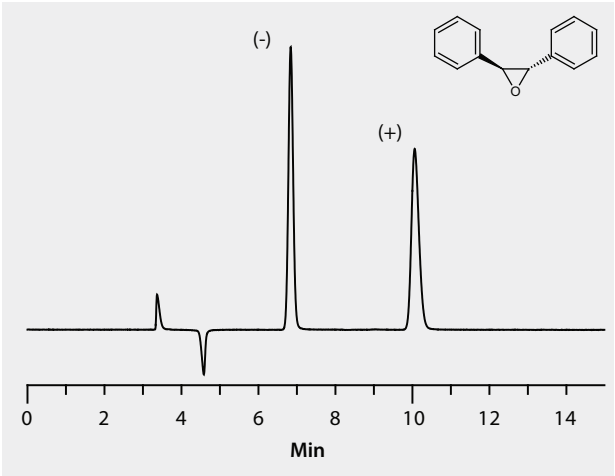
column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . . . . (A) acetonitrile; (B) acetic acid; (C) TEA; (100:0.3:0.2, A:B:C)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . Ruelene (cruformate), 1 mg/mL in acetonitrile
Application No. G005158



SUPELCO
Solutions within.™

HPLC Analysis of trans-Stilbene Oxide Enantiomers on Astec® Cellulose DMP

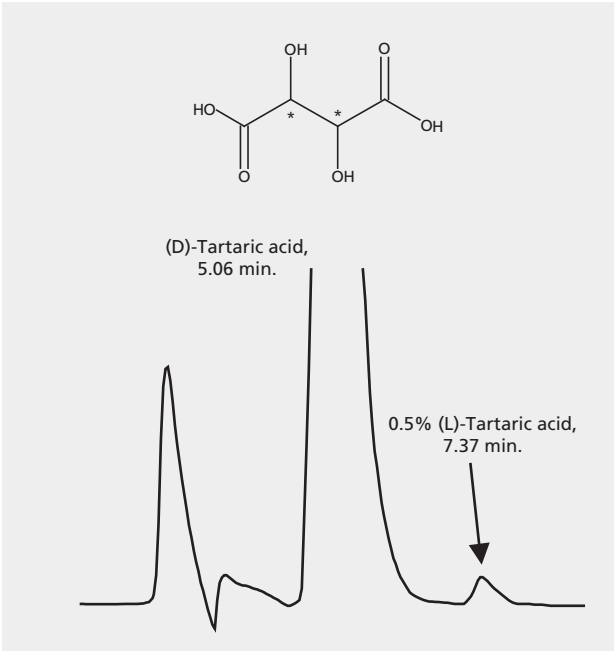
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (90:10, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004995



SUPELCO® Solutions within.™

HPLC Analysis of Tartaric Acid Enantiomers on Astec® CLC-D, Trace Level Detection

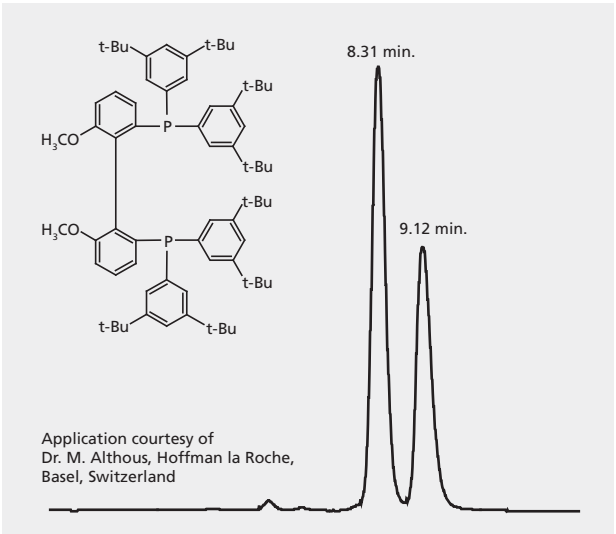
column . . . . . Astec CLC-D, 15 cm x 4.6 mm I.D., 5 µm particles (53023AST)
mobile phase . . . . . 3 mM copper sulfate, pH 3.2
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 5 mg/mL in water
Application No. G004665



SUPELCO®
Solutions within.™

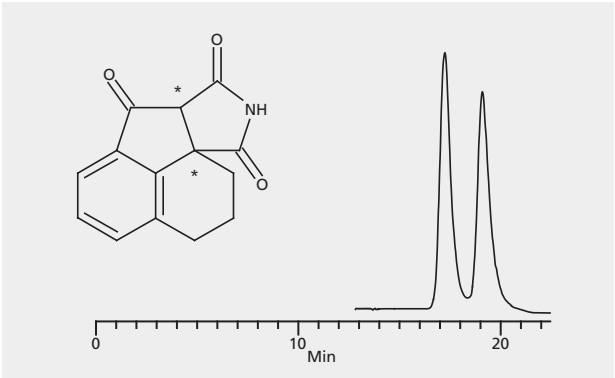
HPLC Analysis of 3,5-tBu-MeOBIPHEP Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) n-hexane; (B) 10% ethanol in n-hexane; (75:25, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 18 °C
detector . . . . . UV, 230 nm
sample . . . . . 3,5-tBu-MeOBIPHEP ((6,6′-dimethoxybiphenyl-2,2′-diyl)bis[bis(3,5-di-*tert*-butylphenyl)phosphine]), 1 mg/mL in ethanol with 5 drops of H_2O_2 added for oxidation
Application No. G004402



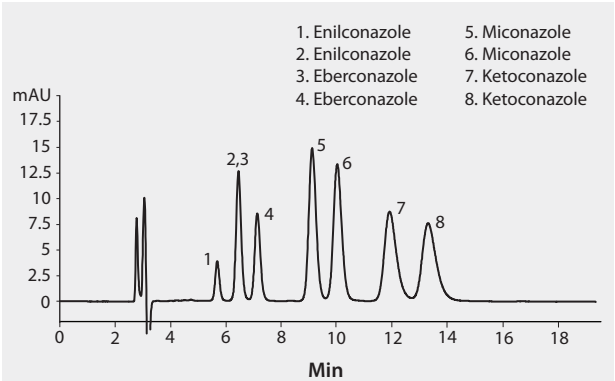
HPLC Analysis of 3a,4,5,6-Tetrahydrosuccinimido [3,4-b]acenaphthen-10-one Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) hexane; (B) ethanol; (75:25, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 4 mg/mL in methanol
Application No. G004648



HPLC Analysis of Triazole Antifungal Agent Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

column . . . . . Astec CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . . . . (A) 0.1% formic acid; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 1 mL/min
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 0.1 mg/mL in methanol
peaks 1&2: enilconazole
peaks 2&3: eberconazole
peaks 4&5: miconazole
peaks 6&7: ketoconazole
Application No. G004737

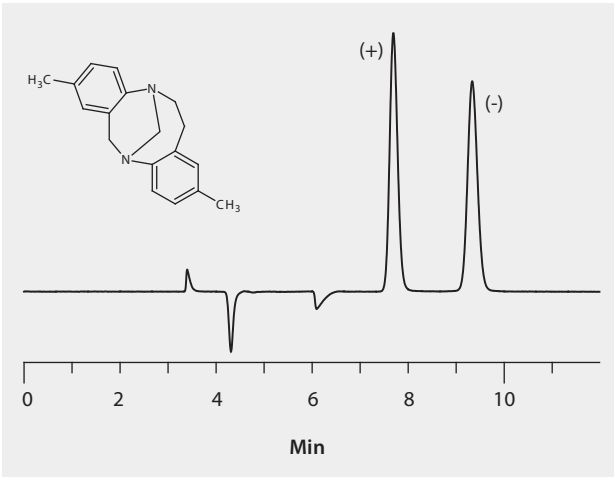


SUPELCO® Solutions within.™

HPLC Analysis of Tröger's Base Enantiomers on Astec® Cellulose DMP

Tröger's base is an organic compound that exhibits chirality due to the presence of two bridgehead stereogenic nitrogen atoms in its structure.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) DEA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004996

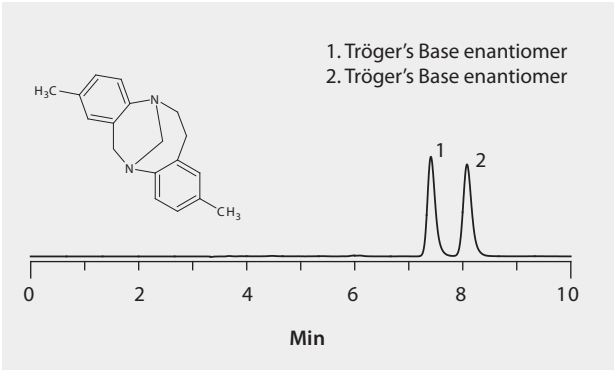


SUPELCO® Solutions within.™

HPLC Analysis of Tröger's Base Enantiomers on Astec® Cellulose DMP (LC/MS Mobile Phase)

Tröger's base is an organic compound that exhibits chirality due to the presence of two bridgehead stereogenic nitrogen atoms in its structure.

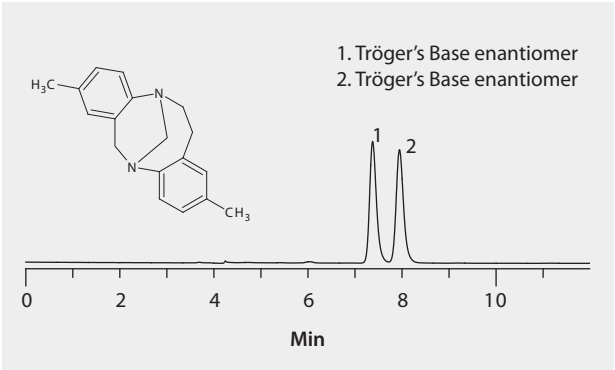
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) ammonium formate; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
Application No. G005002



HPLC Analysis of Tröger's Base Enantiomers on Astec® Cellulose DMP (Polar Organic Mode)

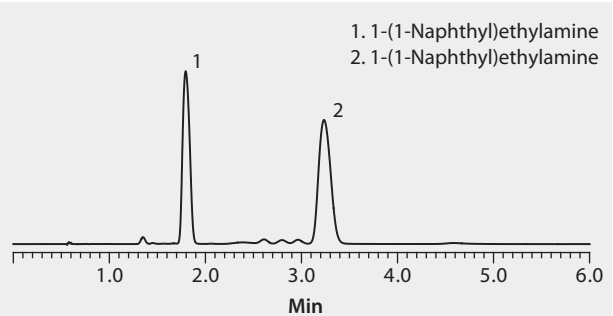
Tröger's base is an organic compound that exhibits chirality due to the presence of two bridgehead stereogenic nitrogen atoms in its structure.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) DEA; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005001



SFC Analysis of 1-(1-Naphthyl)ethylamine Enantiomers on Astec® Cellulose DMP

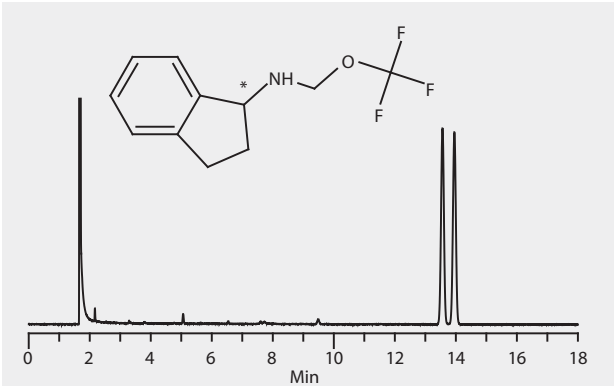
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . 20% methanol (0.1% MSA, methanesulfonic acid) in CO_2
flow rate . . . . . 3 mL/min
pressure . . . . . 1740 psi (120 bar)
column temp. . . . . 40 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G005490



Clinical

GC Analysis of 1-Aminoindan Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DA

column . . . . Astec CHIRALDEX G-DA, 30 m x 0.25 mm I.D., 0.12 µm (72033AST)
oven . . . . . 150 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
sample . . . . . peaks 1 & 2: 1-aminoindan enantiomers (N-TFA derivatives)
Application No. G005144

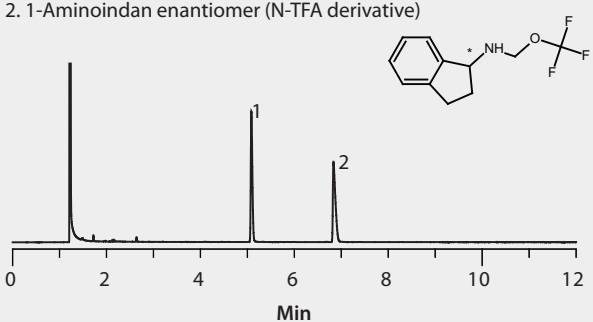


SUPELCO®
Solutions within.™

GC Analysis of 1-Aminoindan Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DP

column . . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 1-aminoindan enantiomers (N-TFA derivatives)
Application No. G005033

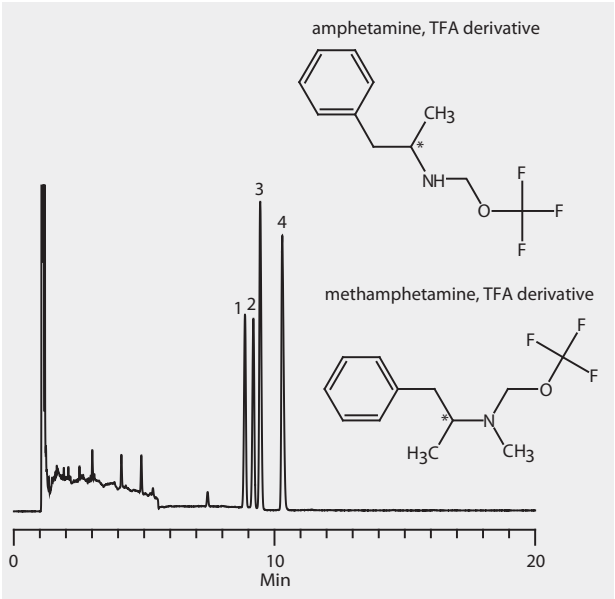
1. 1-Aminoindan enantiomer (N-TFA derivative)
2. 1-Aminoindan enantiomer (N-TFA derivative)



GC Analysis of Amphetamine and Methamphetamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-PN

Elution order reversal of amphetamine (d,l) by using CHIRALDEX G-DP, 140°C.

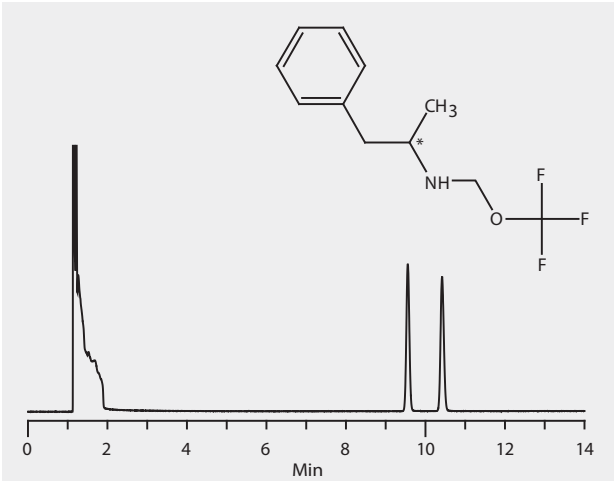
column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 130 °C
detector . . . . . FID, 250 °C
inj. temp. . . . . 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL each compound in methanol
peak 1: d-methamphetamine
peak 2: l-methamphetamine
peak 3: l-amphetamine
peak 4: d-amphetamine
Application No. G005071



GC Analysis of Amphetamine Enantiomers (N-Trifluoroacetyl Derivative) on Astec® CHIRALDEX® G-PN

Achieve elution order reversal (d,l) by using CHIRALDEX G-DP column, 140 °C (see G005151).

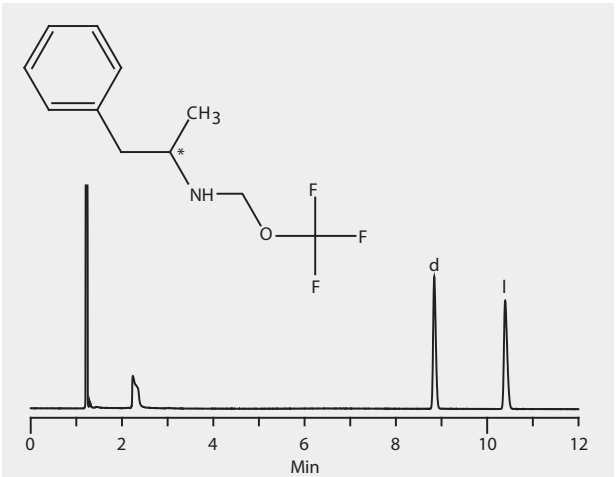
column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 130 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
inj. temp. . . . . 250 °C
liner . . . . . 4 mm I.D., double taper
sample . . . . . peak 1: l-amphetamine (N-TFA)
peak 2: d-amphetamine (N-TFA)
Application No. G005053



GC Analysis of Amphetamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DP

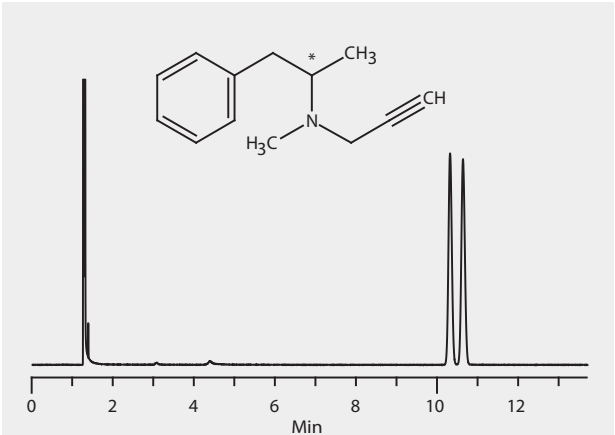
Elution order reversal (l,d) by using CHIRALDEX G-PN, 130°C (see G005053).

column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 140 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 2.7 mL/min., constant flow
injection . . . . . 1 µL, 80:1 split
liner . . . . . 4 mm I.D., FocusLiner
sample . . . . . 4 mg/mL each compound in methylene chloride
peak 1: d-amphetamine (N-TFA derivative)
peak 2: l-amphetamine (N-TFA derivative)
Application No. G005151



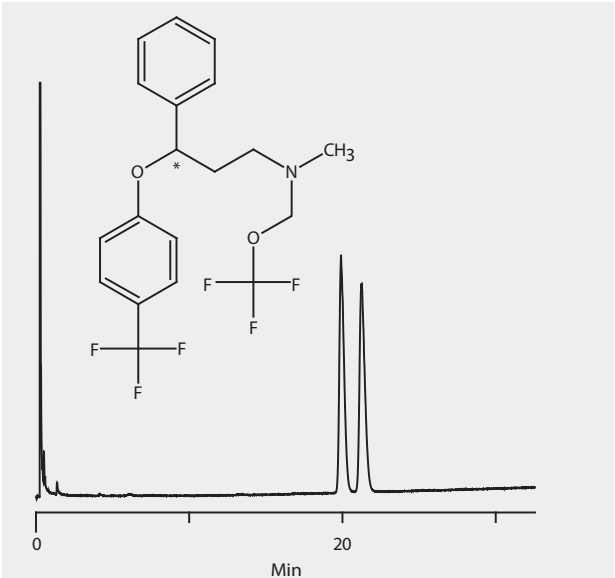
GC Analysis of Deprenyl (Selegiline) Enantiomers on Astec® CHIRALDEX® B-DM

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 130 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
sample . . . . . peak 1: R(-)-deprenyl (Selegiline)
peak 2: S(+)-deprenyl
Application No. G005059



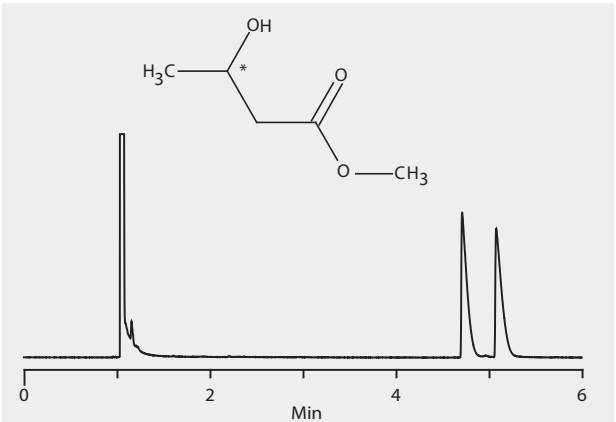
GC Analysis of Fluoxetine Enantiomers (N-TFA Derivatives) on Astec® CHIRALDEX® B-DA

column . . . . Astec CHIRALDEX B-DA, 10 m x 0.25 mm I.D., 0.12 µm (72021AST)
oven . . . . . 175 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
inj. temp. . . . . 250 °C
sample . . . . . peaks 1 & 2: fluoxetine enantiomers (N-TFA derivatives)
Application No. G005063



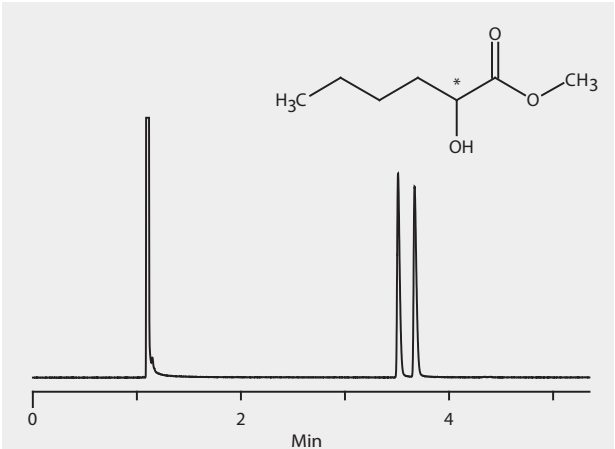
GC Analysis of 3-Hydroxybutyric Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 80 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 3-hydroxybutyric acid methyl ester enantiomers
Application No. G005048



GC Analysis of 2-Hydroxycaproic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

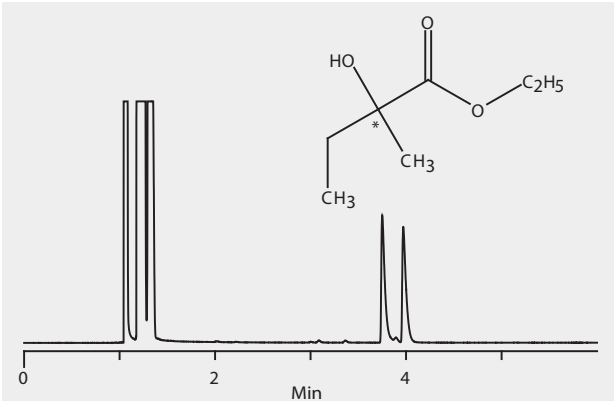
column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 100 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 2-hydroxycaproic acid methyl ester enantiomers
Application No. G005045



SUPELCO®
Solutions within.™

GC Analysis of 2-Hydroxy-2-Methyl Butyric Acid Ethyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

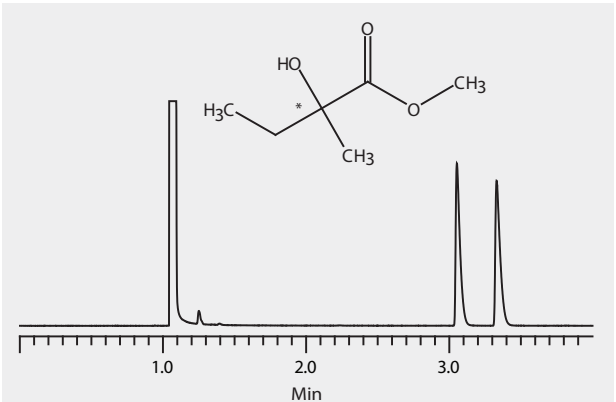
column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
sample . . . peaks 1 & 2: 2-hydroxy-2-methyl butyric acid ethyl ester enantiomers
Application No. G005044



SUPELCO®
Solutions within.™

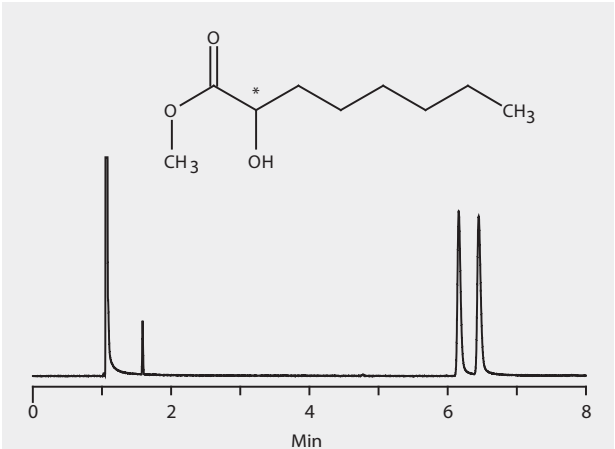
GC Analysis of 2-Hydroxy-2-Methyl Butyric Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . peaks 1 & 2: 2-hydroxy-2-methyl butyric acid methyl ester enantiomers
Application No. G005043



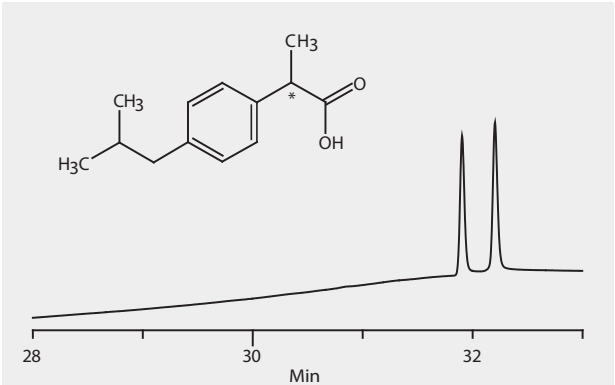
GC Analysis of 2-Hydroxyoctanoic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 110 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 2-hydroxyoctanoic acid methyl ester enantiomers
Application No. G005046



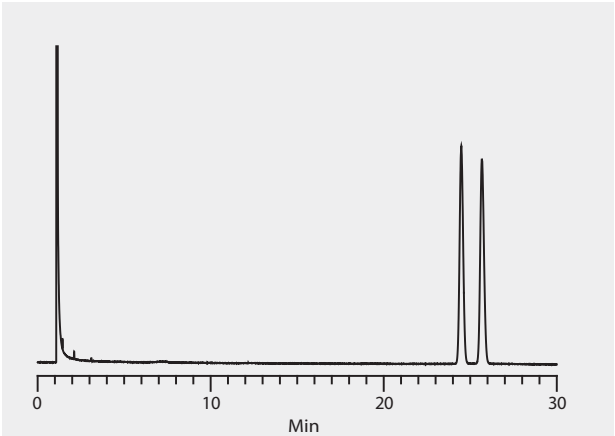
GC Analysis of Ibuprofen Enantiomers (Underivatized) on β-DEX™ 120

column . . . . . Supelco β-DEX 120, 30 m x 0.25 mm I.D., 0.25 µm (24304)
gradient . . . . . 50 °C (5 min), 5 °C/min to 200 °C (10 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 60 m/sec., constant flow
injection . . . . . 1 µL, 100:1 split
sample . . . . . 2 mg/mL in methanol
peak 1: S(+)-ibuprofen
peak 2: R(-)-ibuprofen
liner . . . . . 4 mm I.D., FocusLiner™
Application No. G005065



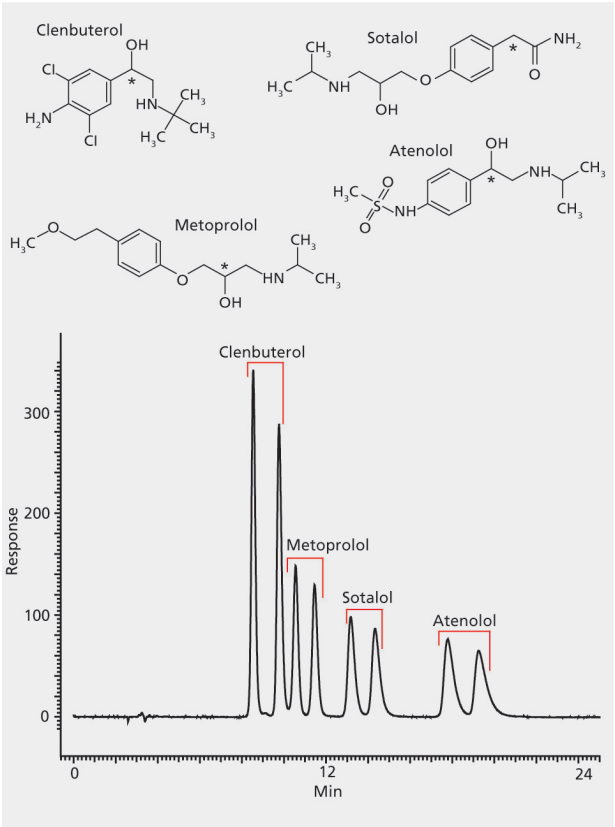
GC Analysis of Methylphenidate (Ritalin) Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® B-DA

column . . . . Astec CHIRALDEX B-DA, 30 m x 0.25 mm I.D., 0.12 µm (72023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 35 psi
sample . . . . . peaks 1 & 2: methylphenidate enantiomers (N-TFA derivative)
Application No. G005070



HPLC Analysis of Beta-Receptor Agonist Enantiomers on Astec® CHIROBIOTIC® T

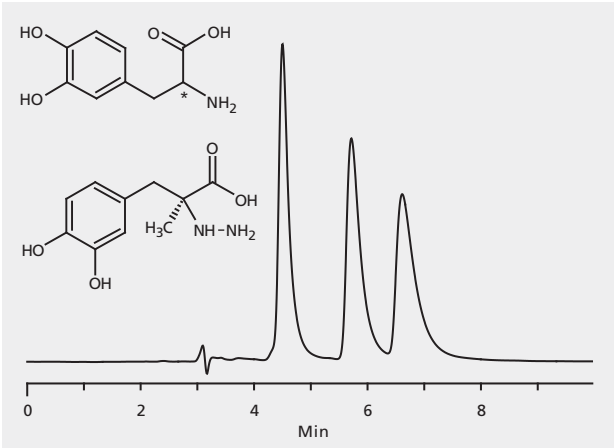
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm, 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
Application No. G004337



SUPELCO
Solutions within.™

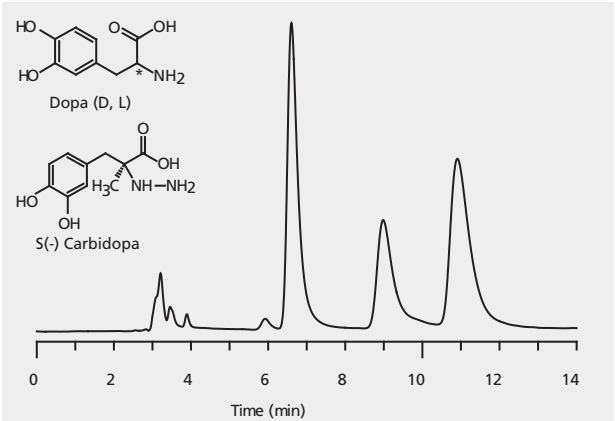
HPLC Analysis of Dopa and Carbidopa Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4; (B) methanol; (30:70, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004529



HPLC Analysis of Dopa and Carbidopa Enantiomers on Astec® CHIROBIOTIC® T2

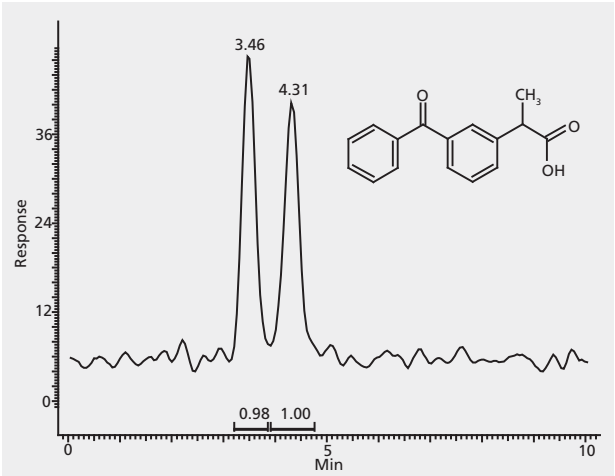
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4; (B) methanol; (10:90, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004481



SUPELCO®
Solutions within.™

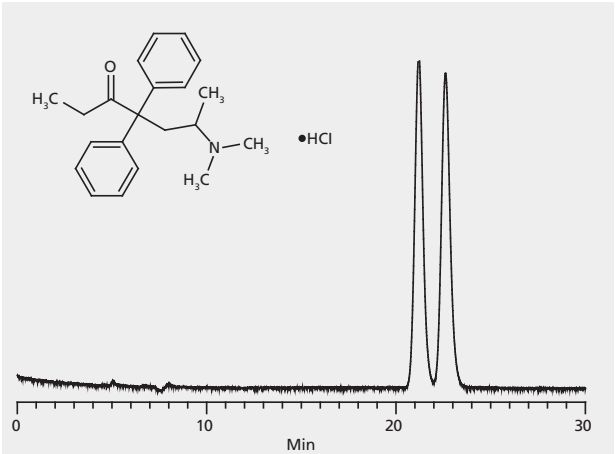
HPLC Analysis of Ketoprofen Enantiomers on Astec® CHIROBIOTIC® R (MS Detection)

column . . . . . CHIROBIOTIC R, 15 cm x 2.1 mm, 5 µm particles (13019AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 5.6 (B) methanol; (70:30, A:B)
flow rate . . . . . 0.2 mL/min
column temp. . . . . 35 °C
detector . . . . . ESI(-)
Application No. G004331



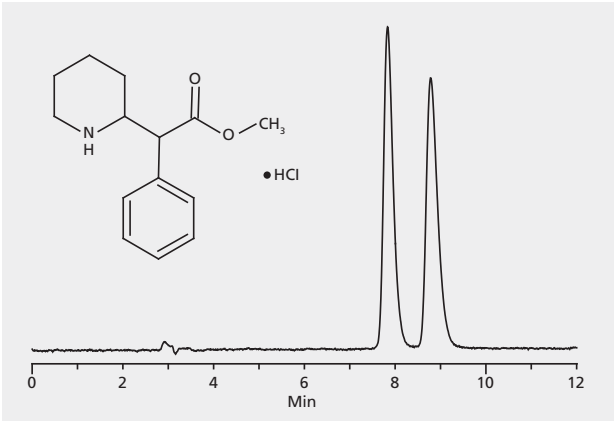
HPLC Analysis of Methadone Enantiomers on Astec® CHIROBIOTIC® V2

column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . (A) methanol; (B) 20 mM ammonium formate; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 205 nm
injection . . . . . 2 µL
sample . . . . . methadone, 1 mg/mL in mobile phase
Application No. G004403



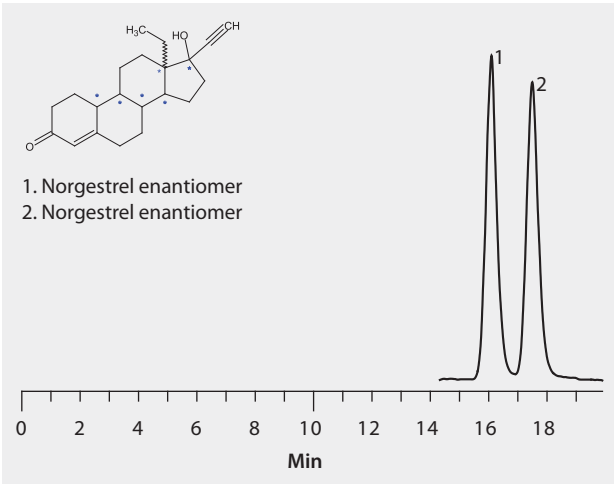
HPLC Analysis of Methylphenidate (Ritalin) Enantiomers on Astec® CHIROBIOTIC® T2

column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . methylphenidate, 1 mg/mL in mobile phase
Application No. G004405



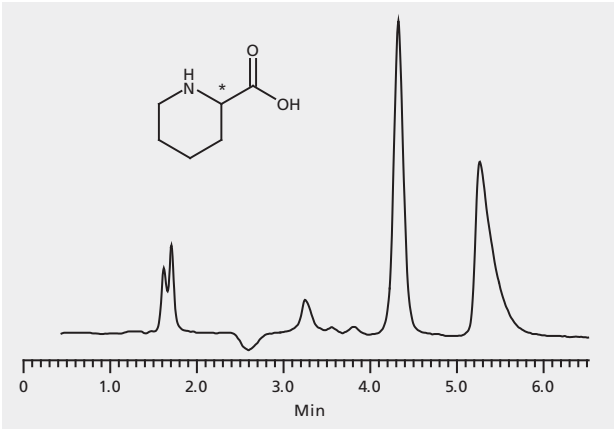
HPLC Analysis of Norgestrel Enantiomers on Astec® CYCLOBOND® II

column . . . . . CYCLOBOND II, 25 cm x 4.6 mm I.D., 5 µm particles (41020AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 0.8 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . norgestrel, 1 mg/mL in methanol
Application No. G005165



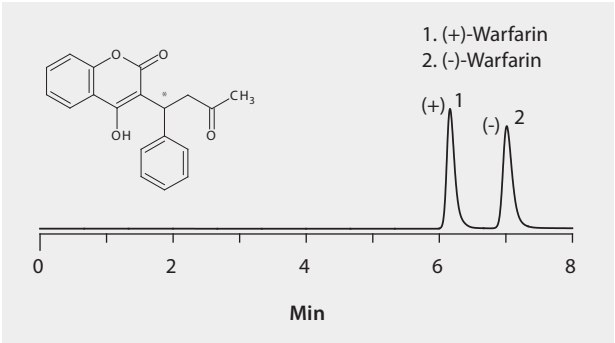
HPLC Analysis of Pipecolic Acid Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004554



HPLC Analysis of Warfarin™ Enantiomers on Astec® Cellulose DMP

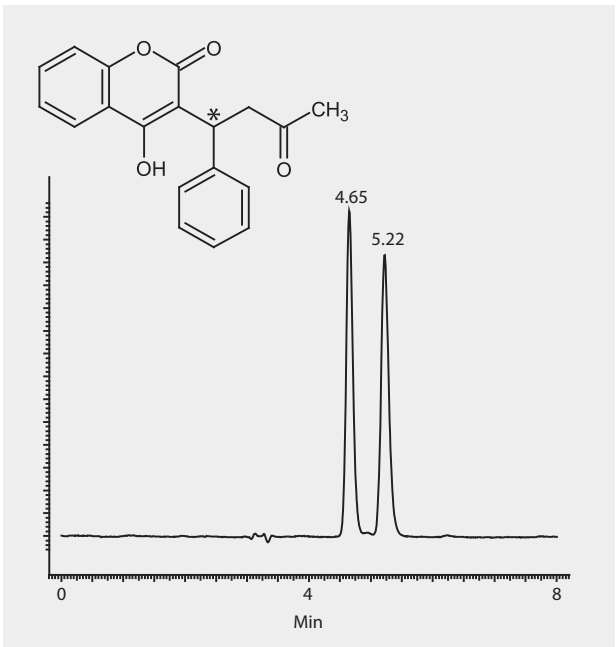
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) TEA; (100:0.2:0.1, A:B:C)
column temp. . . . . 25 °C
flow rate . . . . . 0.5 mL/min
detector . . . . . UV, 278 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005007



SUPELCO®
Solutions within.™

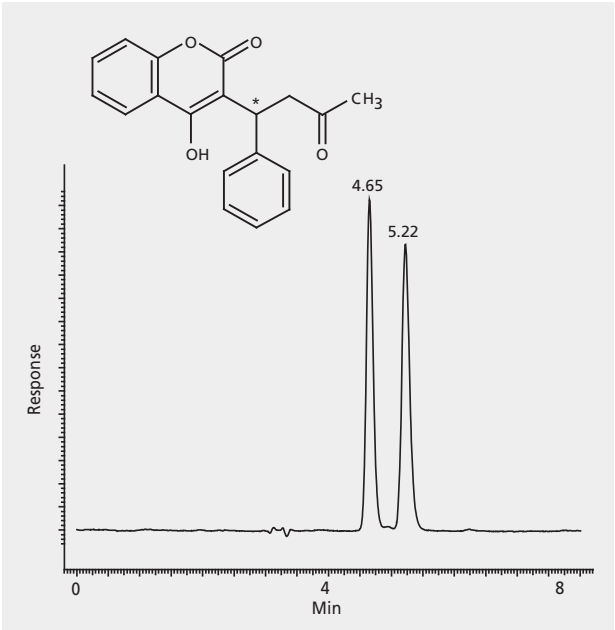
HPLC Analysis of Warfarin™ Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) 5 mM ammonium acetate, pH 4.1; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004349



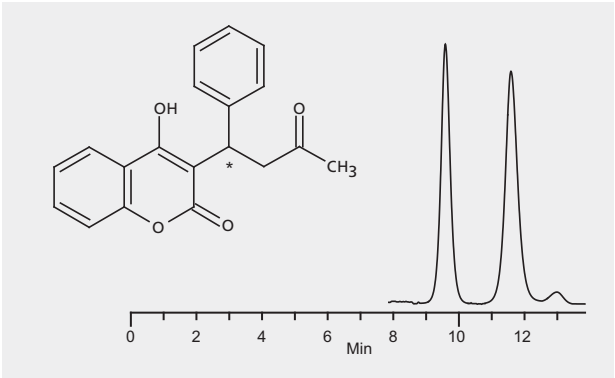
HPLC Analysis of Warfarin™ Enantiomers on Astec® CHIROBIOTIC® V (Method 1)

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) acetonitrile; (B) 5 mM ammonium acetate, pH 4.1; (30:70, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in mobile phase
Application No. G004472



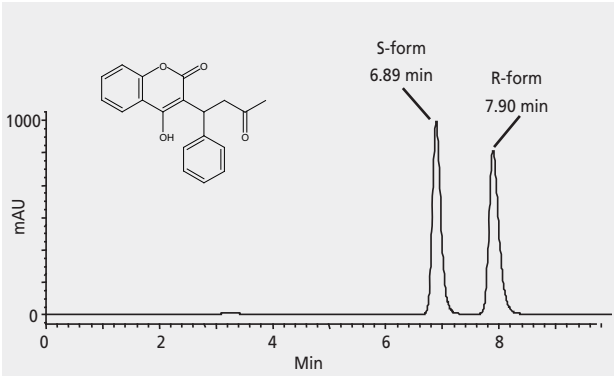
HPLC Analysis of Warfarin™ Enantiomers on Astec® CHIROBIOTIC® V (Method 2)

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . (A) 0.1% triethylamine acetate, pH 5.0; (B) THF; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 4 mg/mL in methanol
Application No. G004649



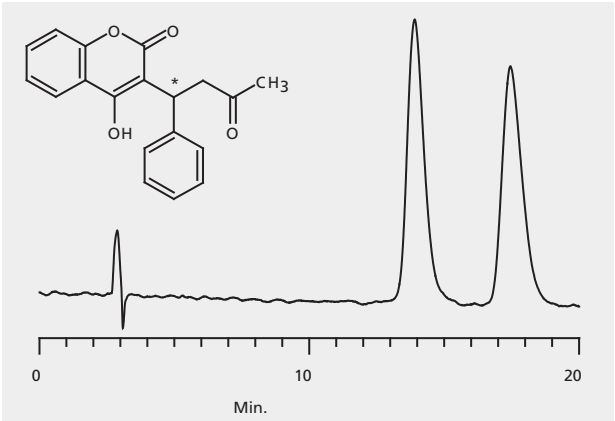
HPLC Analysis of Warfarin™ Enantiomers on Astec® CYCLOBOND® I 2000 (UV at 254 nm)

column . . CYCLOBOND I 2000, 25 cm × 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . . . . (A) acetonitrile: (B) acetic acid: (C) triethylamine; (100:0.3:0.25, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
Application No. G004027



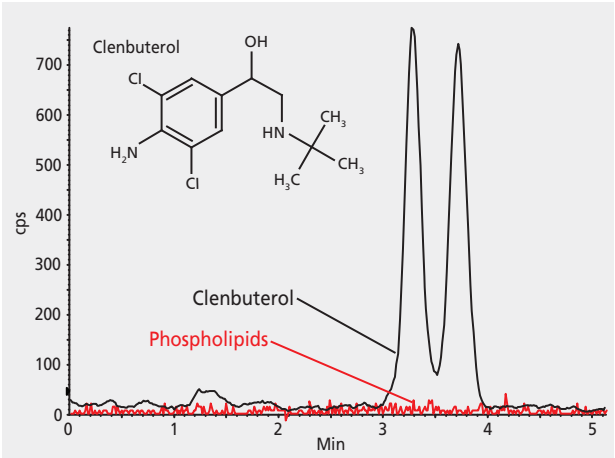
HPLC Analysis of Warfarin™ Enantiomers on Astec® CHIROBIOTIC® V2

column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 280 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004475



LC-MS Analysis of Clenbuterol Enantiomers in Plasma on Astec® CHIROBIOTIC® T after SPE using HybridSPE®-Phospholipid

column . . . . . CHIROBIOTIC T, 10 cm x 2.1 mm I.D., 5 µm particles (12018AST)
mobile phase . . . . . 10 mM ammonium formate in methanol
flow rate . . . . . 0.3 mL/min
column temp. . . . . 30 °C
detector . . . . . ESI(+)
sample . . . . . clenbuterol, 10 ng/mL in rat plasma
(phospholipids removed by extraction with HybridSPE-Phospholipid)
Application No. G004245

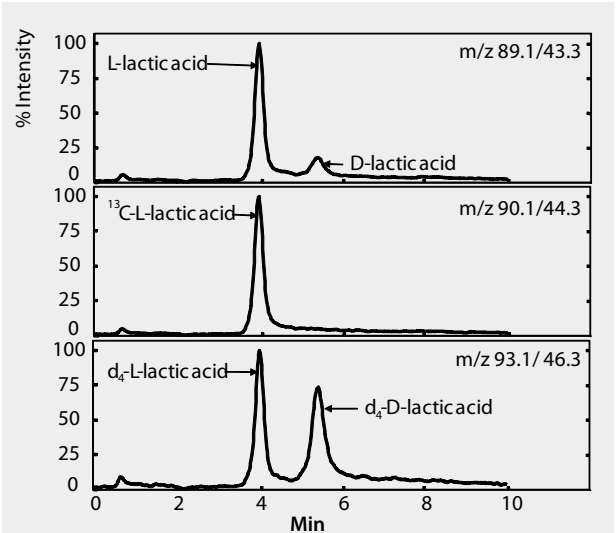


LC-MS Analysis of Lactic Acid Enantiomers in Urine on Astec® CHIROBIOTIC® R

Chromatogram supplied courtesy of H. Henry and associates at the Clinical Chemistry Laboratory, Centre Hospitalier Universitaire Vaudois, University of Lausanne, CH-1011, Switzerland. View the related full-length contributed article in Reporter 30.1.

Reference: Biomed. Chromatogr. 2011 "Sensitive determination of D-lactic acid and L-lactic acid in urine by high-performance liquid chromatography–tandem mass spectrometry" H. Henry, N. Marmy Conus, P. Steenhout, A. Béguin and O. Boulat, Published online in Wiley Online Library, wileyonlinelibrary.com/journal/bmc.

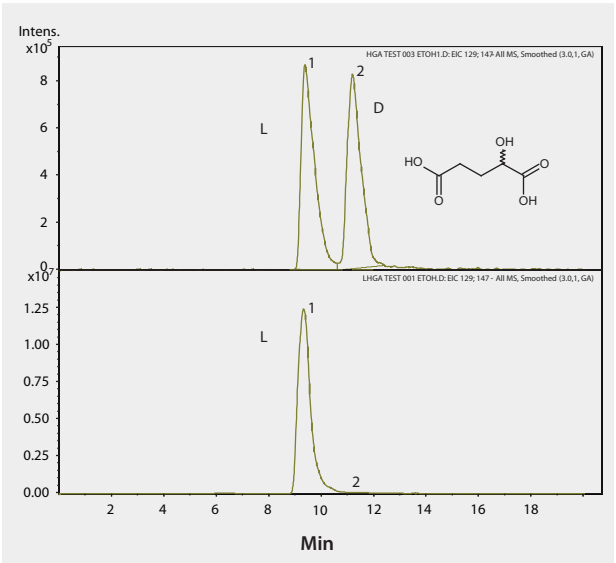
column . . Astec CHIROBIOTIC R, 15 cm x 2.1 mm I.D., 5 µm particles (13019AST)
mobile phase . . . . (A) 33.3 mM ammonium acetate; (B) acetonitrile; (15:85, A:B)
flow rate . . . . . 0.7 mL/min
column temp. . . . . 4 °C
detector . . . . . (-)ESI
injection . . . . . 20 µL
sample . . . . . Urine extracts in 5% (v/v) acetic acid, 10% (v/v) H_2O and 85% (v/v) acetonitrile
Application No. G005482



LC-MS/MS Analysis of 2-Hydroxyglutaric Acid Enantiomers on Astec® CHIROBIOTIC® R

Chiral 2-hydroxyglutarates (2-OHG) are important molecular signatures of both healthy and diseased biological cells, their specific biochemical pathways and inborn errors of metabolism. The chiral differentiation and quantification of D-2-OHG (R(-)-2-OHG) and L-2-OHG (S(+)-2-OHG) is key for characterizing neurometabolic disorders like the 2-hydroxyglutaric acidurias that cause neurological impairment early in life. The ability to distinguish and quantify the enantiomers of 2-OHG is therefore important to be able to track its disposition throughout the metabolic pathway of normal vs. mutated cells. We show here a rapid and sensitive method to separate and measure D-2-OHG and L-2-OHG using LC-MS/MS detection. An Astec® CHIROBIOTIC R (ristocetin chiral selector) column was run under polar ionic mobile phase conditions. Using tandem MS eliminated two fundamental analytical challenges with these compounds: the lack of a UV-absorbing chromophore in the 2-OHG molecule, and the abundance of competing low molecular weight acids in urine. The upper panel in the chromatogram shows the separation of D-2-OHG and L-2-OHG obtained during method development. The lower panel shows the pure L-2-hydroxyglutaric acid. Besides providing the necessary enantioselectivity, Astec® CHIROBIOTIC columns have the advantage of operating in aqueous and polar organic mobile phases that are amenable to polar drugs and metabolites. Their ionic interactions promote analyte ionization which enhances sensitivity in ESI detection. In addition to the CHIROBIOTIC columns, Sigma-Aldrich also provides the high purity mobile phase agents, racemic and pure chiral 2-OHG enantiomers and other compounds in the isocitrate dehydrogenase (IDH) pathway.

column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . (A) ethanol:methanol (3:1, v:v); (B) 0.1% v/v TEA in water, adjusted to pH 4.5 with acetic acid; 75:25 (A:B)
flow rate . . . . . 0.4 mL/min
column temp. . . . . 20 °C
detector . . . . . MS, ESI(-), 100-1000 m/z
injection . . . . . 5 µL
sample . . . . . each enantiomer, 100 µg/mL in water
Application No. G005848

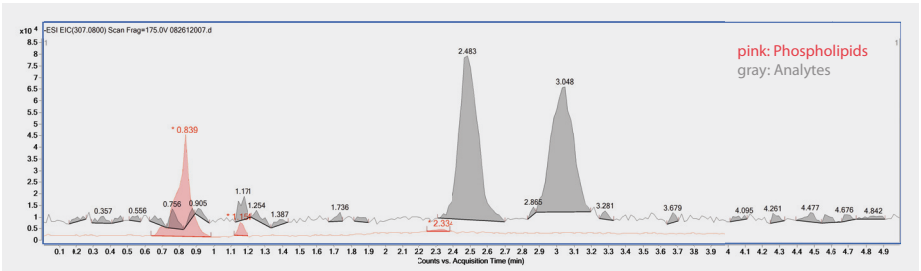


SUPELCO
Solutions within.™

LC-MS/MS Analysis of Warfarin™ Enantiomers in Plasma on Astec® CHIROBIOTIC® V after SPE using HybridSPE®-Phospholipid

Warfarin is a widely prescribed oral anticoagulant for treatment and prevention of thrombosis and thromboembolism. The pharmacological effect of warfarin is derived from its ability to inhibit the enzyme vitamin K epoxide reductase, thereby reducing circulating levels of vitamin K which is required in the clotting process. In spite of its popularity, there are some downsides to warfarin, including a relatively narrow therapeutic index, interactions with other clinically important drugs, side effects, genetic variation in warfarin metabolism, frequent migration of blood levels outside the therapeutic range, bleeding events, and variability in time to reach therapeutic levels. These, and the fact that warfarin is the second leading cause of drug-related emergency room visits make it a commonly analyzed compound in the clinical lab. Warfarin is a chiral compound comprising an equal mixture of (R) and (S) enantiomers. (S)-Warfarin is considerably more potent and pharmacologically active than (R)-warfarin. Astec CHIROBIOTIC V columns resolve warfarin enantiomers under LC-MS conditions and hold up well to biological samples. The clinical implications and importance of therapeutic drug monitoring of warfarin necessitate reliable and sensitive analytical methods, like UHPLC-MS/MS, to detect and quantify warfarin and its enantiomers in serum.

sample/matrix . . . . . rabbit plasma, unfiltered K2-EDTA, spiked with warfarin at 100 ng/mL (3:1, plasma:1% formic acid in acetonitrile)
SPE tube/cartridge . . . . . HybridSPE-Phospholipid, 96-well plate (575656-U)
sample addition . . . . . to each well add 100 µL plasma, followed by a 300 µL of 1% formic acid in acetonitrile, agitate on orbital shaker for 4 minutes
elution . . . . . to each well add 100 µL plasma, followed by a 300 µL of 1% formic acid in acetonitrile, agitate on orbital shaker for 4 minutes
column . . Astec CHIROBIOTIC® V, 10 cm x 4.6 mm I.D., 5 µm particles (11022AST)
mobile phase . . (A) 0.1% formic acid (pH unadjusted); (B) acetonitrile, 75:25 (A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 35 °C
detector . . . . . ESI+, 100-1000 m/z
injection . . . . . 2 µL
Application No. G005849



SUPELCO® Solutions within.™

LC-MS (TOF) Analysis of Warfarin™ Enantiomers in Plasma on Astec® CHIROBIOTIC® V after SPE Using HybridSPE®-Phospholipid

This application demonstrates the benefit of using Sigma-Aldrich Analytical (Supelco, Fluka, and Cerilliant) consumables for rapid, accurate, sensitive and reliable MS detection in a clinical or bioanalytical setting.

Warfarin was originally developed as a rodenticide, but soon found medical application as an anticoagulant to prevent the formation of blood clots, especially after heart attacks. At the time of this writing, it is the most widely prescribed oral anticoagulant and is sold under Coumadin and various other brand names. Warfarin is a chiral molecule. The R- and S- forms are cleared by the body via different pathways and have different pharmacokinetic and pharmacodynamic effects. S-warfarin is more potent than the R-warfarin in producing the anticoagulant response.

The Astec® CHIROBIOTIC V column provided rapid resolution of the enantiomers under conditions that are compatible with mass spectrometric (MS) detection. Considering the rise of MS in the clinical laboratory, this is an important consideration. The CHIROBIOTIC family of chiral columns are based on the macrocyclic glycopeptide molecule and affect enantioresolution under mobile conditions that are compatible with reversed-phase and MS conditions. Their durability allows them to stand up to repeated injections of biological extracts.

By using HybridSPE-Phospholipid for the sample prep, ion-suppressing phospholipids were removed for improved sensitivity and longer column lifetime. LC-MS Ultra CHROMASOLV solvents were used to supply low background interference and particulate contaminants. Cerilliant reference material grade standards provided reliable quantitation.

system: Agilent 1290, 6210 TOF

sample/matrix . . . . . Rat plasma stabilized with K2EDTA was acquired from Lampire Biological Laboratories, (Pipersville PA). (Plasma was spiked directly from stock standard to a level of 100 ng/mL in 3:1 (plasma:1% formic acid acetonitrile).)

SPE tube/cartridge . . Pk1 50 mg/96-Well HybridSPE-Phospholipid Plate (575656-U)

condition . . Apply 100 µL of plasma to plate, followed by 300 µL of 1% formic acid acetonitrile. Agitate via vortex for 4 min.

elution . . . . . Place on vacuum manifold and apply 10" Hg vacuum for 4 minutes. Collect filtrate and analyze directly.

column . . . . . CHIROBIOTIC V,10 cm x 4.6 mm I.D., 5 µm particles (11022AST)

mobile phase . . . . . (A) 0.1% formic acid water; (B) acetonitrile, (75:25, A:B)

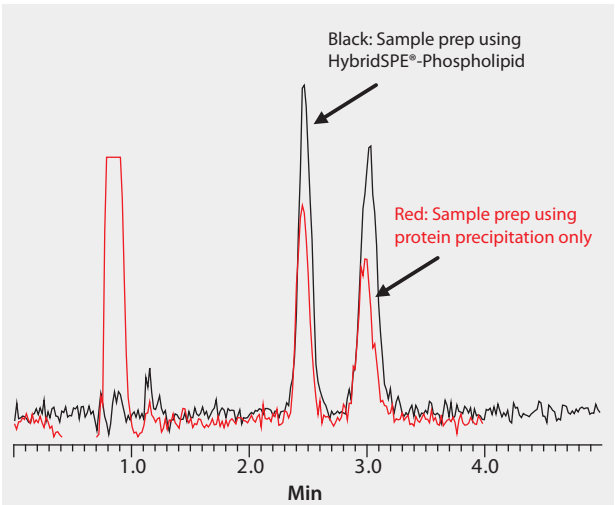
flow rate . . . . . 1 mL/min

column temp. . . . . 35 °C

detector . . . . . ESI+, 100-1000 m/z

injection . . . . . 2 µL

Application No. G005827

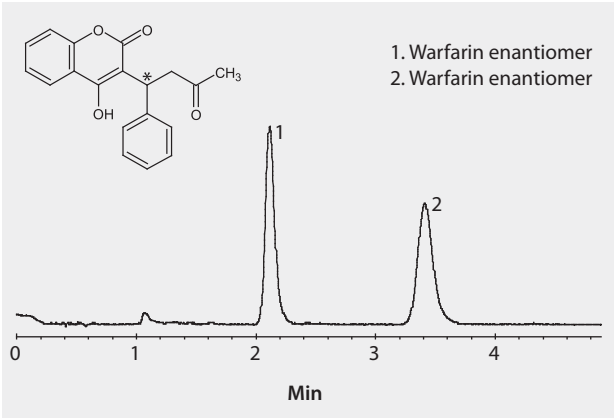


SFC Analysis of Warfarin™ Enantiomers on Astec® Cellulose DMP, Methanol Additive

SFC data provided by Dr. Christina Kraml, Lotus Separations, LLC, Princeton, NJ.

Instrument: Berger Analytical SFCsystem equipped with a dual pump (FCM-1200), autosampler (ALS 3100), column oven (TCM-200) and diode-array detector (DAD-4100); from Mettler Toledo.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) CO_2; (B) methanol; (80:20, A:B)
flow rate . . . . . 3 mL/min
pressure . . . . . 1450 psi (100 bar)
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . warfarin enantiomers, 2 mg/mL
Application No. G005170



SUPELCO® Solutions within.™

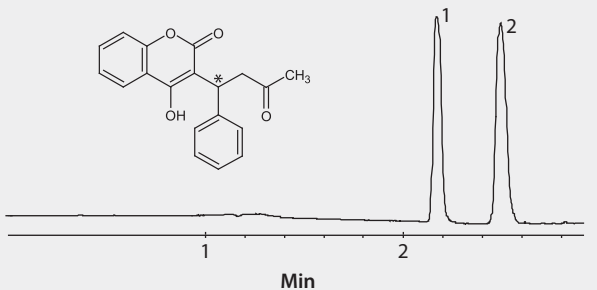
SFC Analysis of Warfarin™ Enantiomers on Astec® Cellulose DMP, Methanol Gradient

SFC data provided by Dr. Christina Kraml, Lotus Separations, LLC, Princeton, NJ.

Instrument: Berger Analytical SFC system equipped with a dual pump (FCM-1200), autosampler (ALS 3100), column oven (TCM-200) and diode-array detector (DAD-4100); from Mettler Toledo.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) carbon dioxide; (B) methanol; Gradient of 5-65% methanol in 3 min., hold for 1 min
flow rate . . . . . 4 mL/min
pressure . . . . . 1450 psi (100 bar)
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . warfarin
Application No. G005174

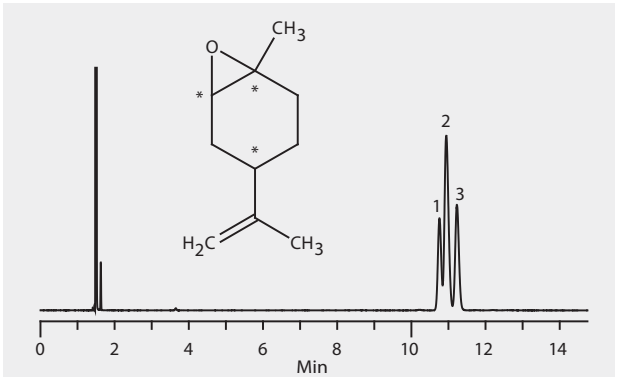
1. Warfarin enantiomer
2. Warfarin enantiomer



Cosmetics, Personal Care, and Cleaning Products

GC Analysis of cis/trans Limonene Oxide Enantiomers on Astec® CHIRALDEX® B-PH

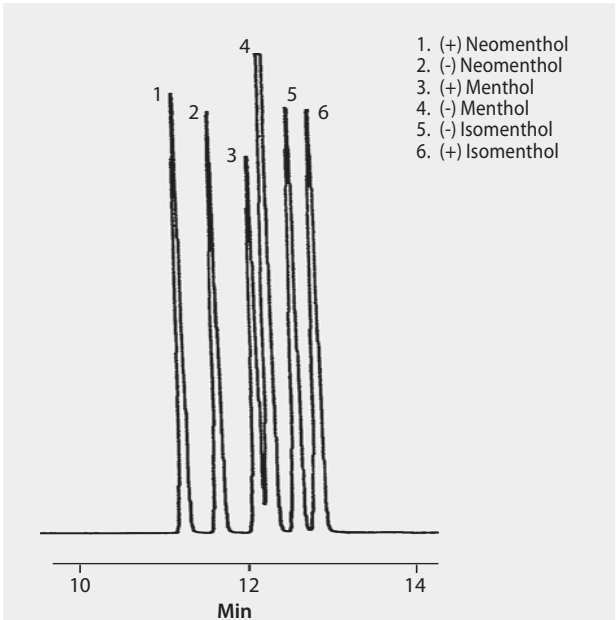
column . . . . Astec CHIRALDEX B-PH, 30 m x 0.25 mm I.D., 0.12 µm (71023AST)
oven . . . . . 90 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: d-cis or d-trans limonene oxide
peak 2: l-cis and trans limonene oxide
peak 3: d-trans or d-cis limonene oxide
Application No. G005066



SUPELCO®
Solutions within.™

GC Analysis of Menthol Enantiomers on α-DEX™ 120

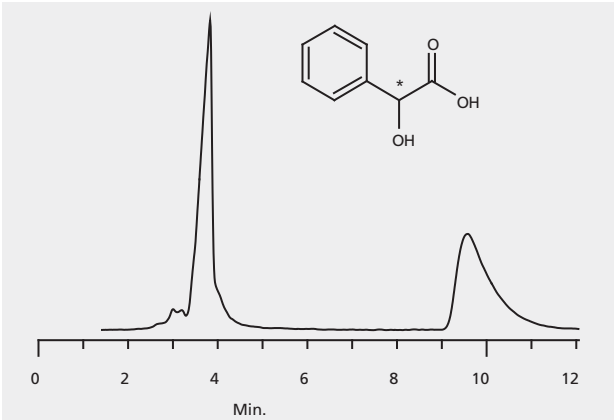
column . . . . . α-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24310)
oven . . . . . 110 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 20 cm/sec
injection . . . . . 1 µL, 100:1 split
sample . . . . . 0.5 mg/mL each component
Application No. 713-0089



SUPELCO®
Solutions within.™

HPLC Analysis of Mandelic Acid Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004610

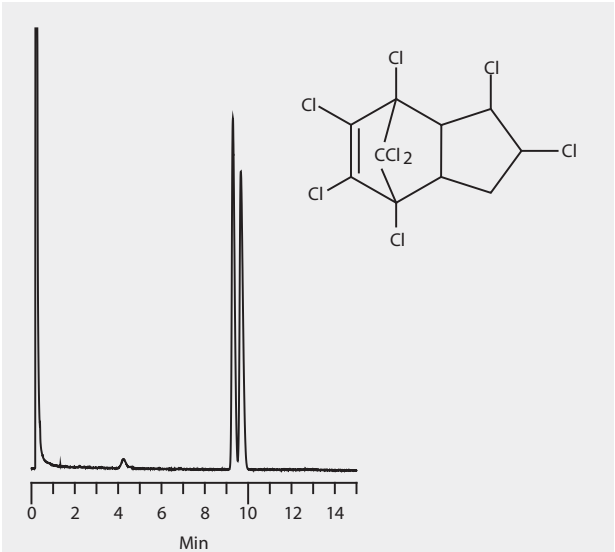


SUPELCO® Solutions within.™

Environmental

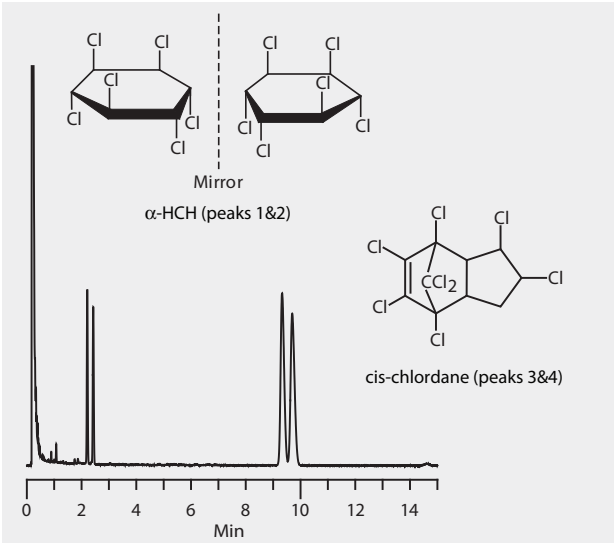
GC Analysis of cis-Chlordane Enantiomers on Astec® CHIRALDEX® G-BP

column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 100:1 split
sample . . . . . 5 mg/mL in ethanol
peaks 1 & 2: cis-chlordane enantiomers
Application No. G005110



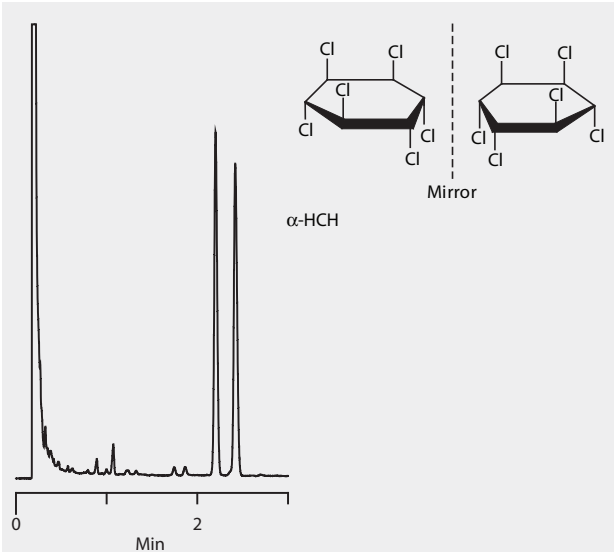
GC Analysis of α-Hexachlorocyclohexane (α-HCH) and cis-Chlordane Enantiomers on Astec® CHIRALDEX® G-BP

column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 100:1 split
sample . . . . . 5 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
peaks 3 & 4: cis-chlordane enantiomers
Application No. G005050



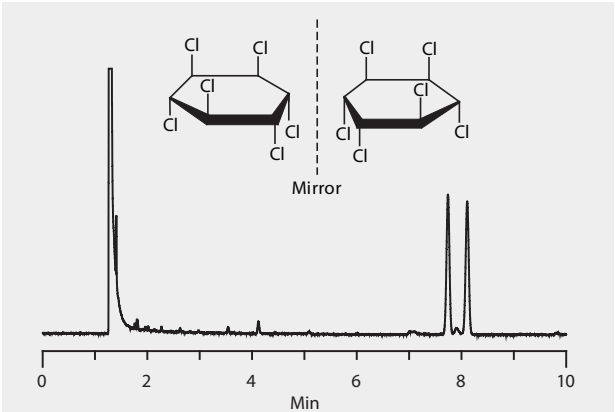
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-BP

column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005109



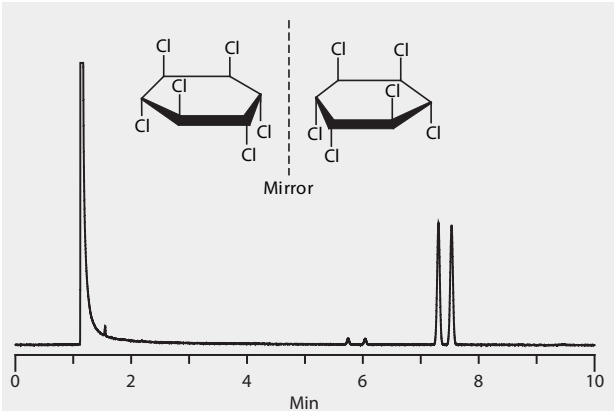
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-DM

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005114



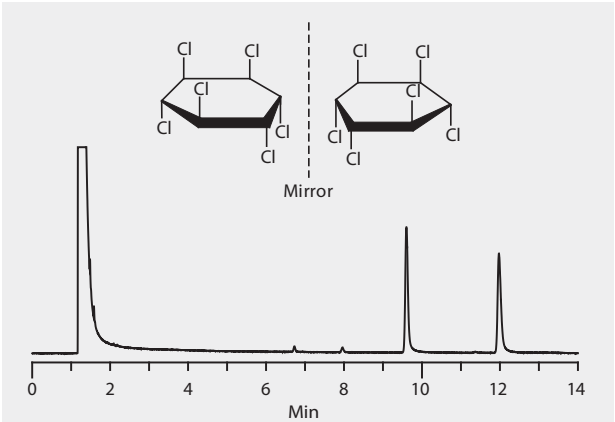
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005112



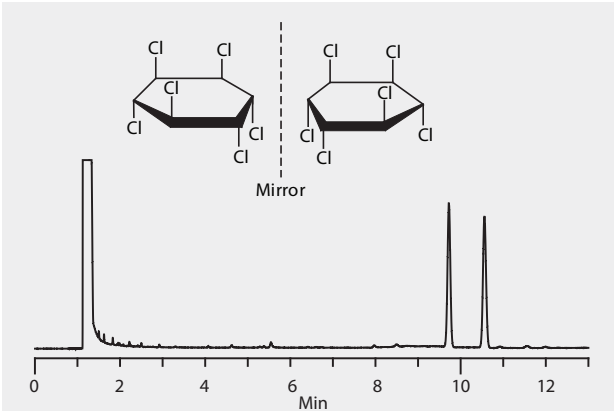
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-DP

column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005051



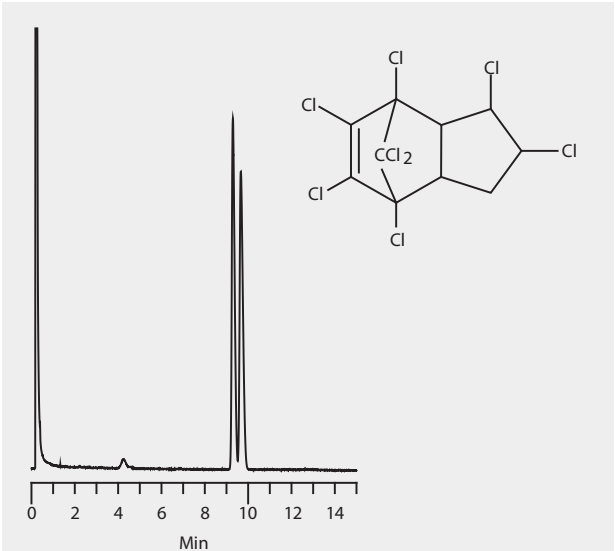
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-PN

column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005113



GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-TA

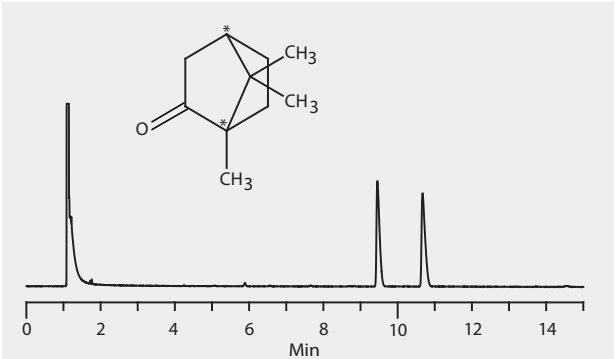
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample preparation . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005111



Flavors and Fragrances

GC Analysis of Camphor Enantiomers on Astec® CHIRALDEX® G-DP

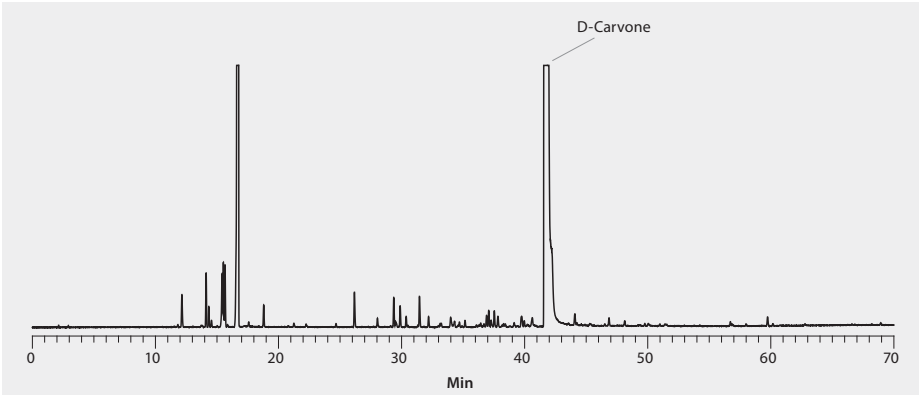
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 100 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: camphor enantiomers
Application No. G005058



SUPELCO®
Solutions within.™

GC Analysis of D-Carvone Enantiomer in Caraway Essential Oil on Astec® CHIRALDEX® G-TA

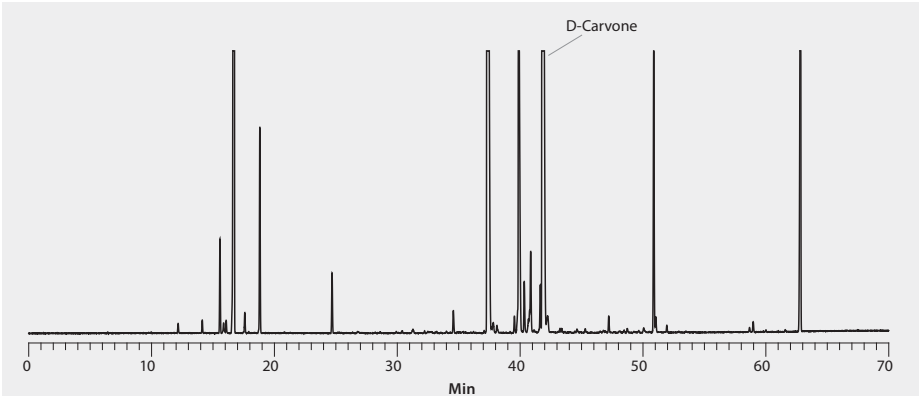
column . . . . . CHIRALDEX GTA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), then 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25cm/ sec set at 110°Chelium, 25cm/ sec set at 110°
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D. cup injector
sample . . . . . Caraway Oil, neat
Application No. G006154



SUPELCO
Solutions within.™

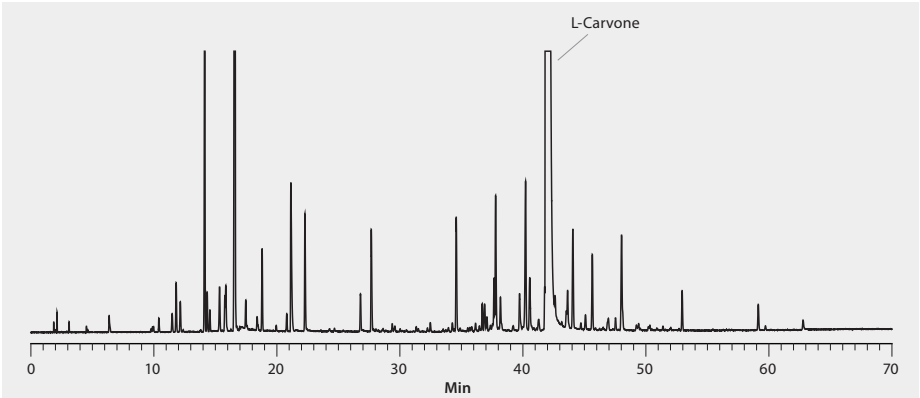
GC Analysis of D-Carvone Enantiomer in Dill Seed Essential Oil on Astec® CHIRALDEX® G-TA

column . . . . . CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), then 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25cm/ sec set at 110°C
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D. cup injector
sample . . . . . Dill Seed Oil, neat
Application No. G006155



GC Analysis of L-Carvone Enantiomer in Native Spearmint Essential Oil on Astec® CHIRALDEX® G-TA

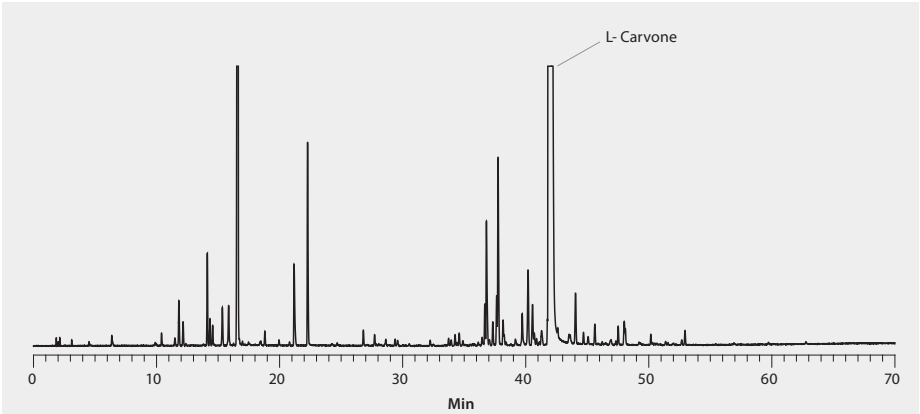
column . . . . . CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), then 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25cm/ sec set at 110°C
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D. cup injector
sample . . . . . Native Spearmint Oil, neat
Application No. G006161



SUPELCO® Solutions within.™

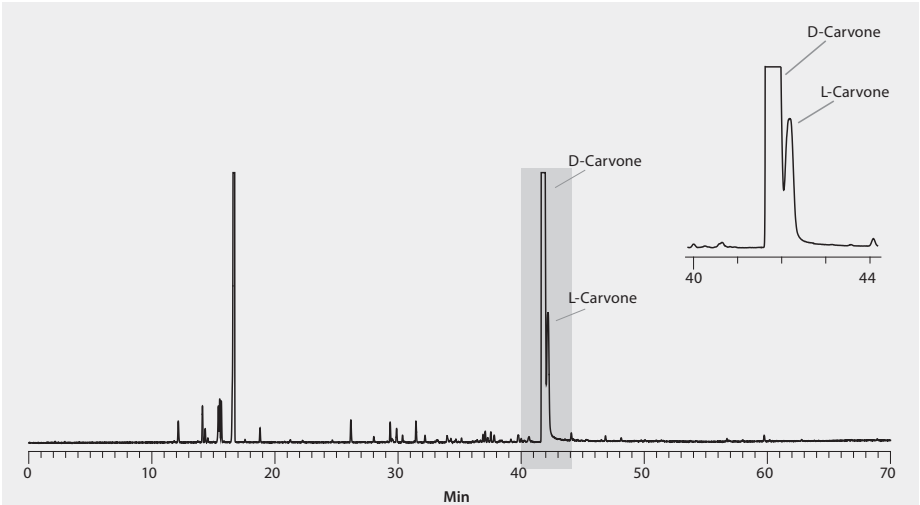
GC Analysis of L-Carvone Enantiomer in Scotch Spearmint Essential Oil on Astec® CHIRALDEX® G-TA

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25 cm/sec, set at 110 °C
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D., split type, cup design
sample . . . . . Scotch Spearmint Oil, neat
Application No. G006162



GC Analysis of D & L-Carvone Enantiomers in Caraway Essential Oil (Spiked with L-Carvone Enantiomer) on Astec® CHIRALDEX® G-TA

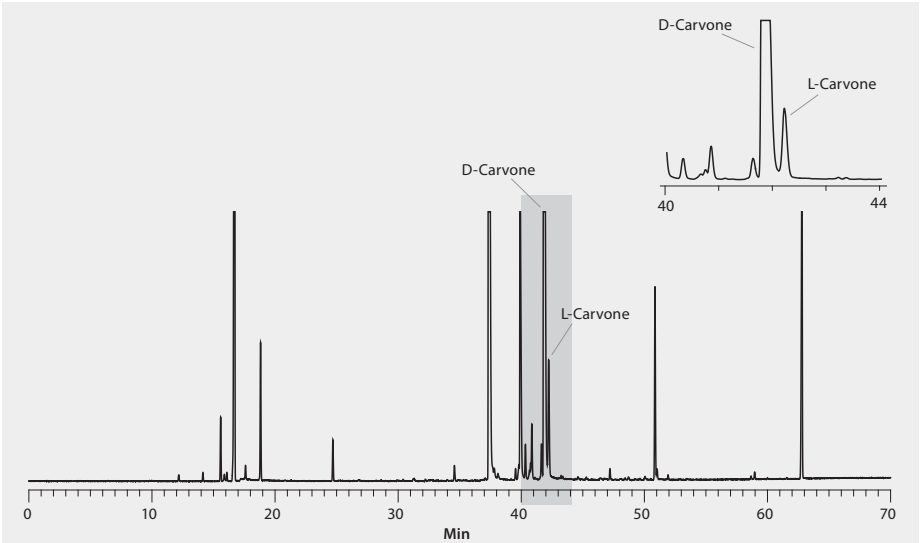
column . . . . . CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), then 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25cm/ sec set at 110°C
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D. cup injector
sample . . . . . Dill Seed Oil + L- Carvone Spike, neat
Application No. G006156



SUPELCO
Solutions within.™

GC Analysis of D & L-Carvone Enantiomers in Dill Seed Essential Oil (Spiked with L-Carvone Enantiomer) on Astec® CHIRALDEX® G-TA

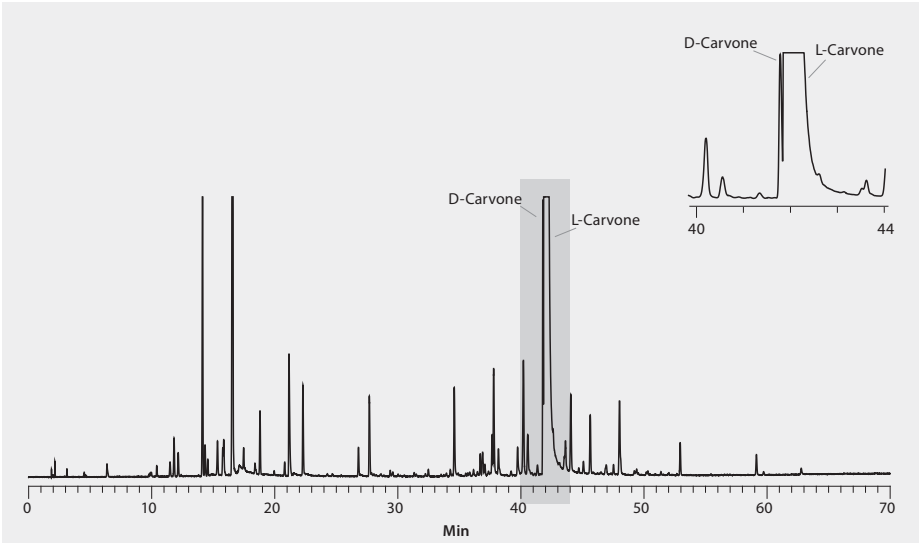
column . . . . . CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), then 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25cm/ sec set at 110°C
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D. cup injector
sample . . . . . Dill Seed Oil + L- Carvone Spike, neat
Application No. G006157



SUPELCO®
Solutions within.™

GC Analysis of D & L-Carvone Enantiomers in Native Spearmint Essential Oil (Spiked with D-Carvone Enantiomer) on Astec® CHIRALDEX® G-TA

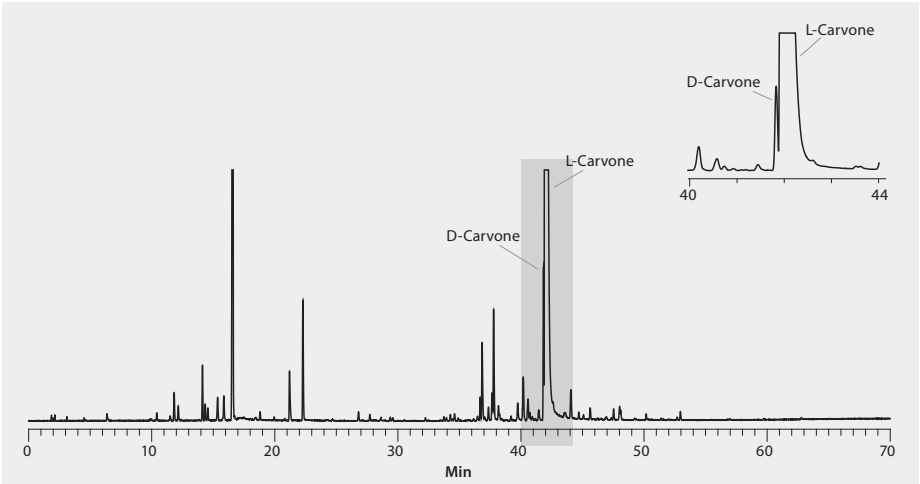
column . . . . . CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), then 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25cm/ sec set at 110°C
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D. cup injector
sample . . . . . Native Spearmint Oil + D- Carvone Spike, neat
Application No. G006158



SUPELCO
Solutions within.™

GC Analysis of D & L-Carvone Enantiomers in Scotch Spearmint Essential Oil (Spiked with D-Carvone Enantiomer) on Astec® CHIRALDEX® G-TA

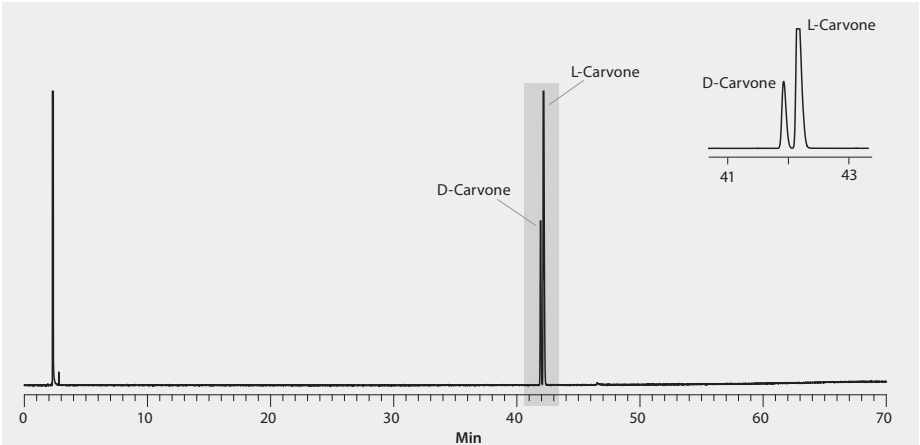
column . . . . . CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), then 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25cm/ sec set at 110°C
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D. cup injector
sample . . . . . Scotch Spearmint Oil + D- Carvone Spike, neat
Application No. G006159



SUPELCO® Solutions within.™

GC Analysis of D & L-Carvone Enantiomers on Astec CHIRALDEX® G-TA

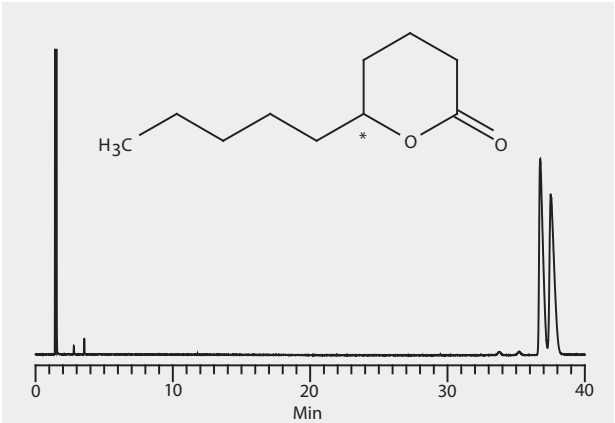
column . . . . . CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 40 °C (1 min), then 2 °C/min to 170 °C (15 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 25cm/ sec set at 110°C
injection . . . . . 0.1 µL 100:1 split
liner . . . . . 4 mm I.D. cup injector
sample . . . . . D & L- Carvone Mix, neat, (L in excess)
Application No. G006160



SUPELCO
Solutions within.™

GC Analysis of δ-Decanolactone Enantiomers on Astec® CHIRALDEX® G-TA

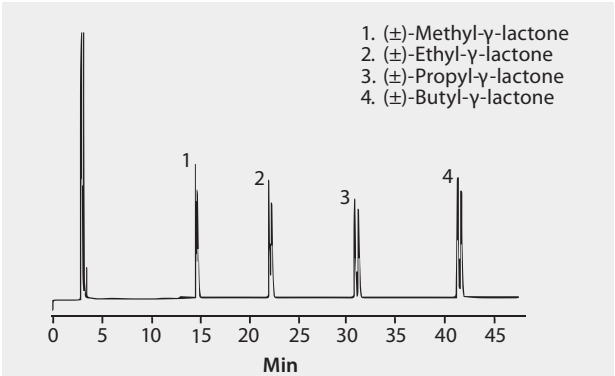
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . helium, 24 psi
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
sample . . . . . peaks 1 & 2: δ-decanolactone enantiomers
Application No. G005146



SUPELCO
Solutions within.™

GC Analysis of Lactone Enantiomers on β-DEX™ 110

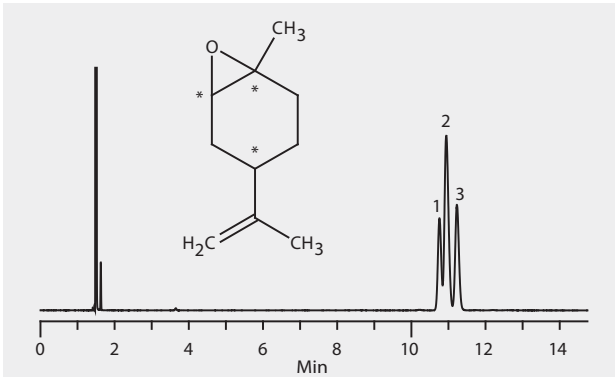
column . . . . . β-DEX 110, 30 m × 0.25 mm I.D., 0.25 µm (24301)
oven . . . . . 90 °C, 1 °C/min to 200 °C
inj. temp. . . . . 300 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 20 cm/sec @ 90 °C
injection . . . . . 1 µL, 100:1 split
sample . . . . . 0.5 mg/mL in methylene chloride
Application No. 712-0266



SUPELCO®
Solutions within.™

GC Analysis of cis/trans Limonene Oxide Enantiomers on Astec® CHIRALDEX® B-PH

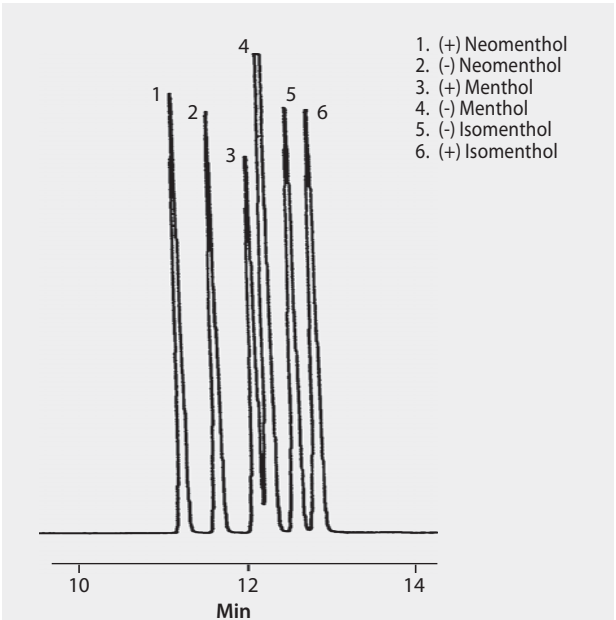
column . . . . Astec CHIRALDEX B-PH, 30 m x 0.25 mm I.D., 0.12 µm (71023AST)
oven . . . . . 90 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: d-cis or d-trans limonene oxide
peak 2: l-cis and trans limonene oxide
peak 3: d-trans or d-cis limonene oxide
Application No. G005066



SUPELCO® Solutions within.™

GC Analysis of Menthol Enantiomers on α-DEX™ 120

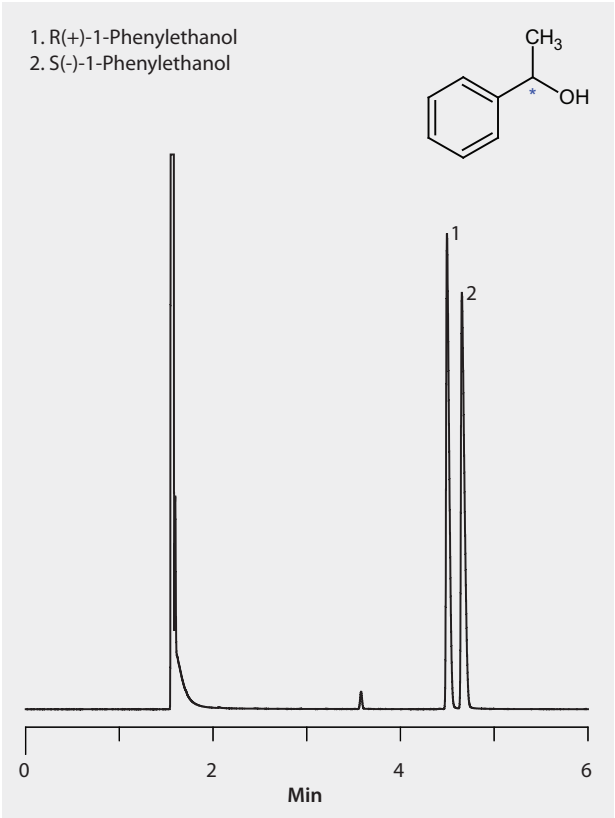
column . . . . . α-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24310)
oven . . . . . 110 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 20 cm/sec
injection . . . . . 1 µL, 100:1 split
sample . . . . . 0.5 mg/mL each component
Application No. 713-0089



SUPELCO® Solutions within.™

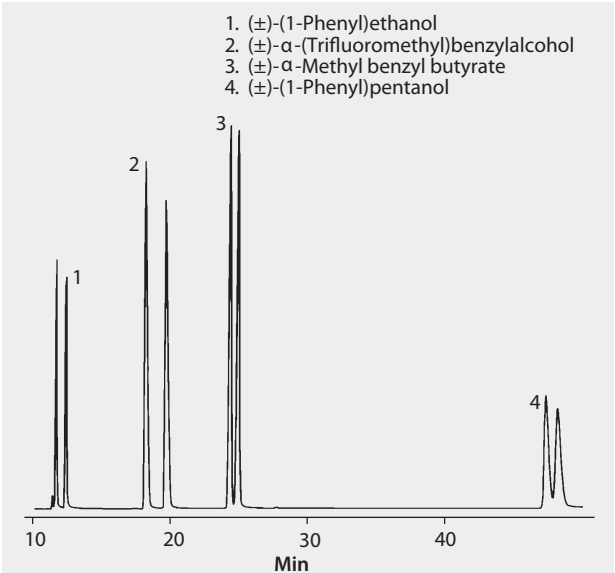
GC Analysis of 1-Phenylethanol Enantiomers on Astec® CHIRALDEX® B-PM

column . . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methanol
peak 1: R(+)-1-phenylethanol
peak 2: S(-)-1-phenylethanol
Application No. G005035



GC Analysis of Phenylethanol Enantiomers on β-DEX™ 120

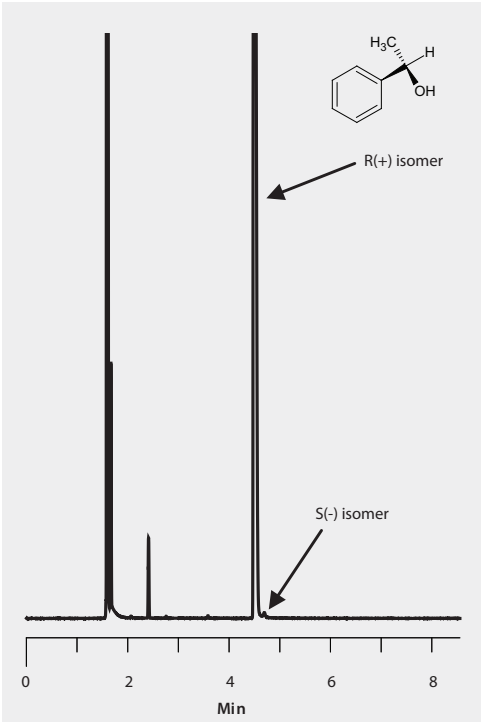
column	β-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24304)
oven	120 °C
inj. temp.	200 °C
detector	FID, 300 °C
carrier gas	helium, 20 cm/sec
injection	1 µL, 100:1 split
sample	0.5 mg/mL each analyte in methylene chloride
Application No.	94-0340



SUPELCO® Solutions within.™

GC Analysis of (R)-(+)-1-Phenylethanol on Astec® CHIRALDEX® B-PM

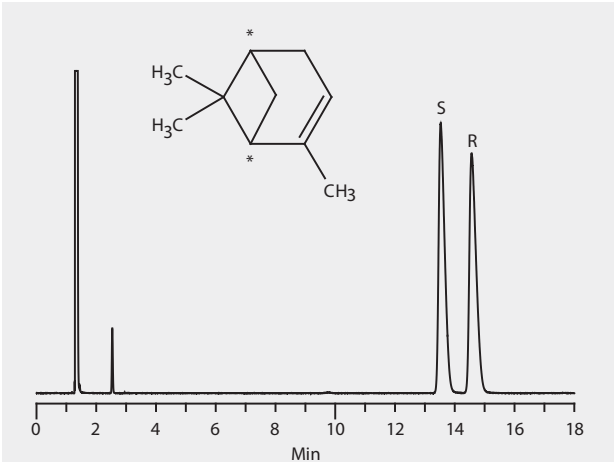
column .... Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm (76023AST)
oven ..... 120 °C
inj. temp. ..... 250 °C
detector ..... FID, 250 °C
carrier gas ..... helium, 24 psi
injection ..... 1 µL, 80:1 split
sample ..... 3 mg/mL in methylene chloride
peak 1: (R)-(+)-1-phenylethanol
Application No. G005036



GC Analysis of α-Pinene Enantiomers on Astec® CHIRALDEX® B-DM

Elution order reversal (d,l) on CHIRALDEX G-DP.

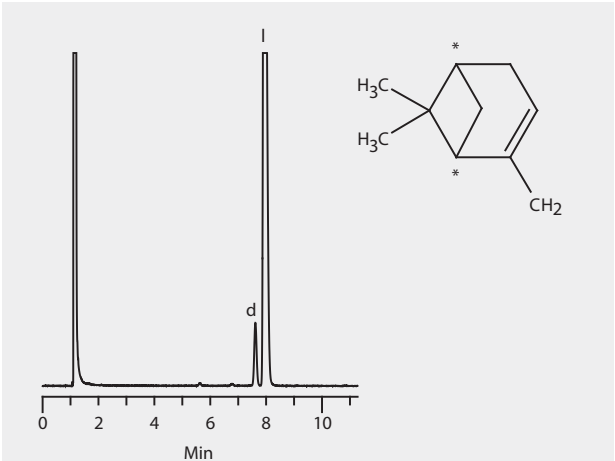
column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 50 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 4 mg/mL in methylene chloride
peak 1: l-α-pinene (S(-)-α-pinene)
peak 2: d-α-pinene (R(+)-α-pinene)
Application No. G005117



GC Analysis of β-Pinene Enantiomers on Astec® CHIRALDEX® B-DM

Elution order reversal on CHIRALDEX G-DP.

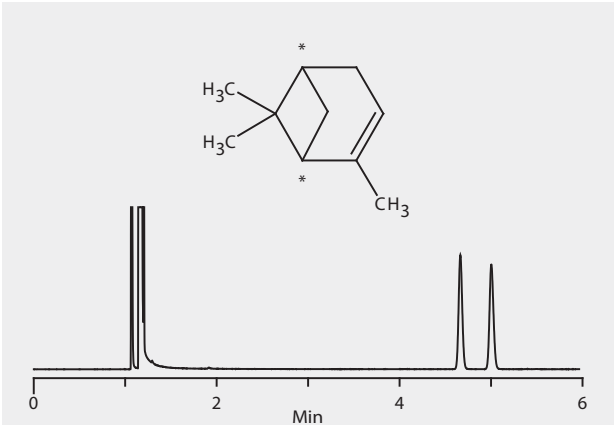
column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 5 mg/mL in ethanol
peak 1: d-β-pinene
peak 2: l-β-pinene
Application No. G005121



SUPELCO®
Solutions within.™

GC Analysis of α-Pinene Enantiomers on Astec® CHIRALDEX® G-DP

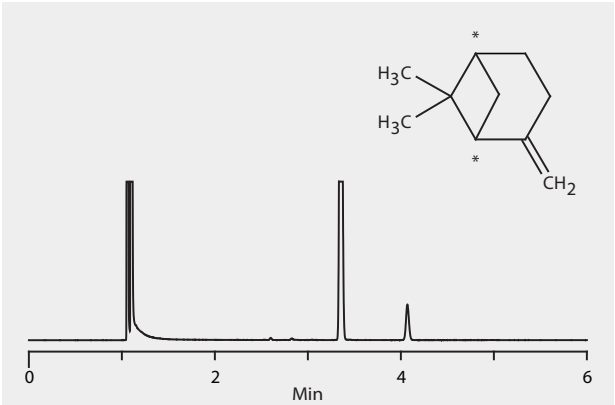
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 50 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 4 mg/mL in methylene chloride
peak 1: d-α-pinene (R(+)-α-pinene)
peak 2: l-α-pinene (S(-)-α-pinene)
Application No. G005052



GC Analysis of β-Pinene Enantiomers on Astec® CHIRALDEX® G-DP

Elution order reversal on CHIRALDEX B-DM and CHIRALDEX B-PM.

column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 5 mg/mL in ethanol
peak 1: l-β-pinene
peak 2: d-β-pinene
Application No. G005054

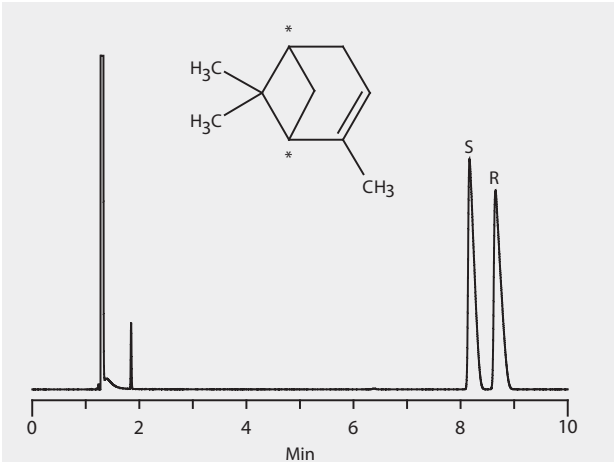


SUPELCO®
Solutions within.™

GC Analysis of α-Pinene Enantiomers on Astec® CHIRALDEX® B-PM

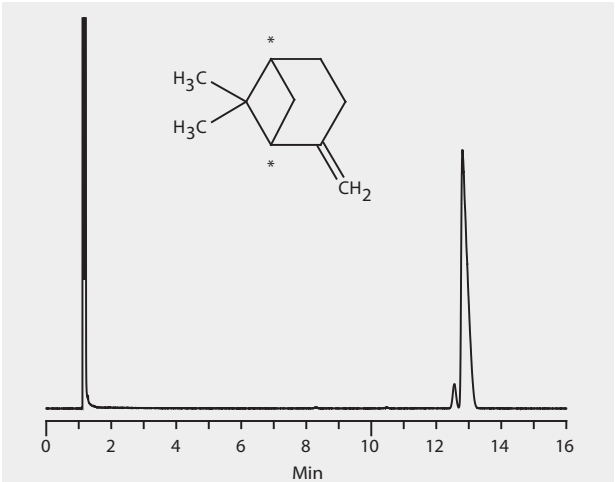
Elution order reversal on CHIRALDEX G-DP.

column . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm (76023AST)
oven . . . . . 50 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 4 mg/mL in methylene chloride
peak 1: l-α-pinene (S(-)-α-pinene)
peak 2: d-α-pinene (R(+)-α-pinene)
Application No. G005116



GC Analysis of β-Pinene Enantiomers on Astec® CHIRALDEX® B-PM

column . . . . Astec CHIRALDEX B-PM, 30 m x 0.25 mm I.D., 0.12 µm (76023AST)
oven . . . . . 50 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 5 mg/mL in ethanol
peak 1: d-β-pinene
peak 2: l-β-pinene
Application No. G005055

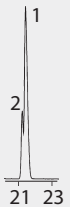


GC Analysis of Terpinen-4-ol and Methyl Mandelate Enantiomers on α-DEX 120, β-DEX 120, and γ-DEX 120

column . . 30 m × 0.25 mm I.D., 0.25 µm (α-DEX 24310, β-DEX 24304, γ-DEX 24307)
oven . . . . . 130 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 35 cm/sec
injection . . . . . 1 µL 100:1 split
sample . . . . . 1 mg/mL in methylene chloride
Application No. 794-0285

γ-DEX 120 Column

1. (+)-Terpinen-4-ol
2. (–)-Terpinen-4-ol



γ-DEX 120 Column

1. S-(+)-Methyl mandelate
2. R-(–)-Methyl mandelate

α-DEX 120 Column

1. S-(+)-Methyl mandelate
2. R-(–)-Methyl mandelate

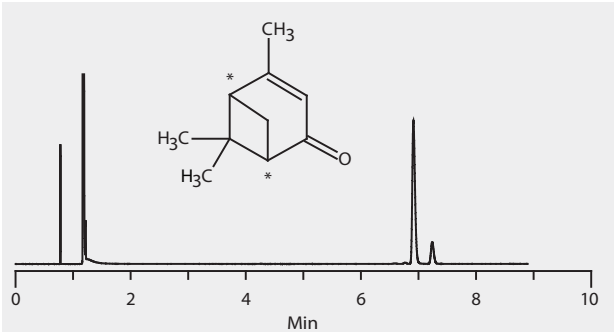
β-DEX 120 Column

1. (+)-Terpinen-4-ol
2. (–)-Terpinen-4-ol

GC Analysis of Verbenone Enantiomers on Astec® CHIRALDEX® B-TA

Can reverse elution order by using CHIRALDEX G-TA.

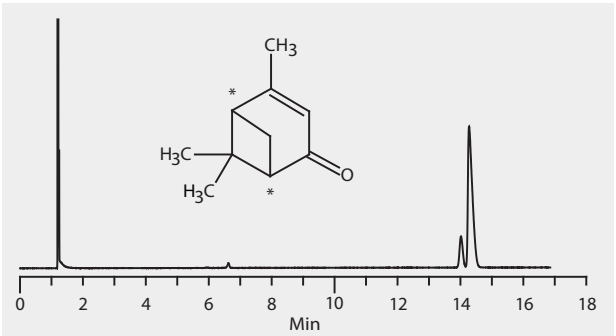
column . . . . Astec CHIRALDEX B-TA, 30 m x 0.25 mm I.D., 0.12 µm (73023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2.5 mg/mL
peak 1: S(-)-verbenone
peak 2: R(+)-verbenone
Application No. G005077



GC Analysis of Verbenone Enantiomers on Astec® CHIRALDEX® G-TA

Can reverse elution order by using CHIRALDEX B-TA.

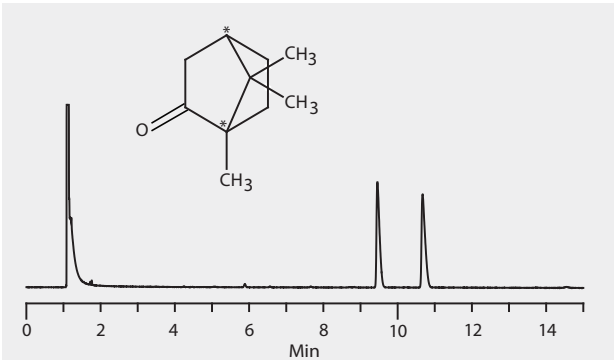
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2.5 mg/mL
peak 1: R(+)-verbenone
peak 2: S(-)-verbenone
Application No. G005076



Food and Beverages

GC Analysis of Camphor Enantiomers on Astec® CHIRALDEX® G-DP

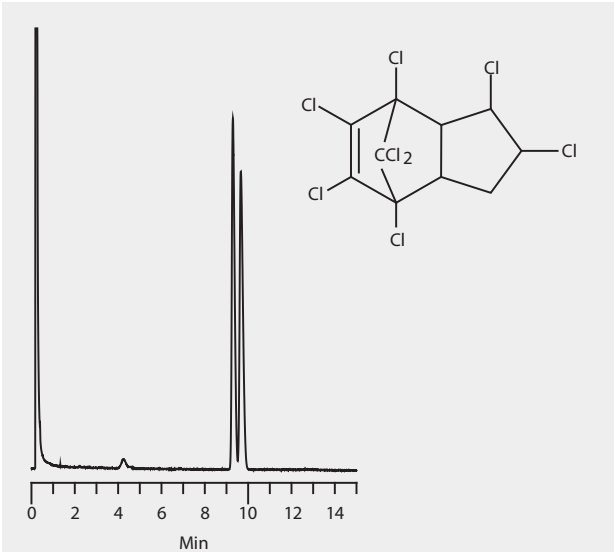
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 100 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: camphor enantiomers
Application No. G005058



SUPELCO®
Solutions within.™

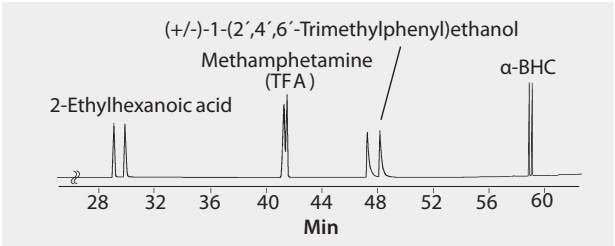
GC Analysis of cis-Chlordane Enantiomers on Astec® CHIRALDEX® G-BP

column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 100:1 split
sample . . . . . 5 mg/mL in ethanol
peaks 1 & 2: cis-chlordane enantiomers
Application No. G005110



GC Analysis of Enantiomers on γ-DEX™ 120

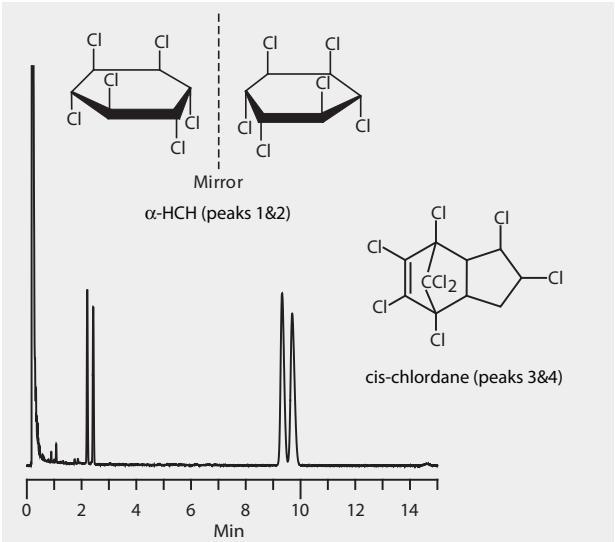
column . . . . . γ-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24307)
oven . . . . . 90 °C, 1 °C/min to 135 °C, 5 °C/min to 240 °C
inj. temp. . . . . 300 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 20 cm/sec
injection . . . . . 1 µL 100:1 split
sample . . . . . 500 µg/mL in methylene chloride
Application No. 794-0520



SUPELCO®
Solutions within.™

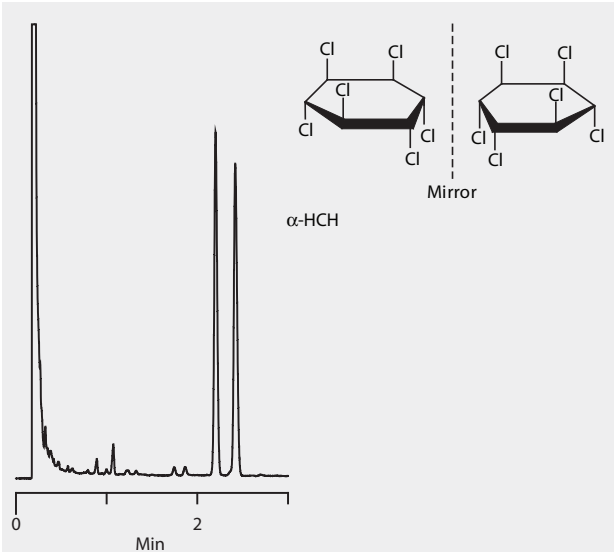
GC Analysis of α-Hexachlorocyclohexane (α-HCH) and cis-Chlordane Enantiomers on Astec® CHIRALDEX® G-BP

column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 100:1 split
sample . . . . . 5 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
peaks 3 & 4: cis-chlordane enantiomers
Application No. G005050



GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-BP

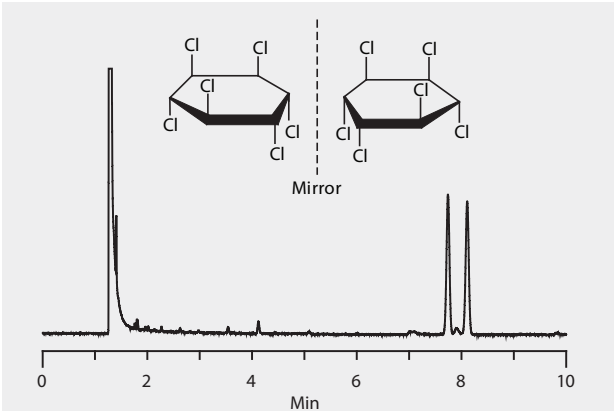
column . . . . Astec CHIRALDEX G-BP, 10 m x 0.25 mm I.D., 0.12 µm (75031AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005109



SUPELCO® Solutions within.™

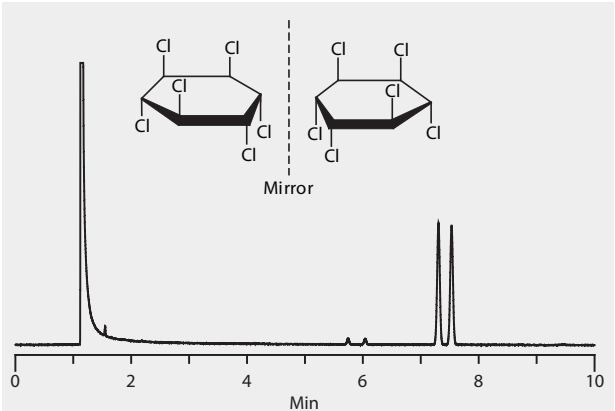
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-DM

column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005114



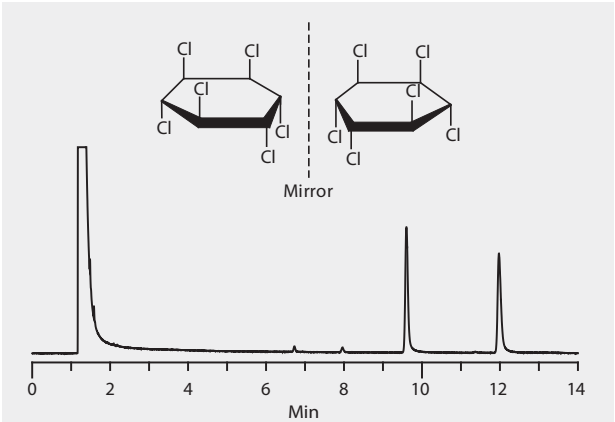
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005112



GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-DP

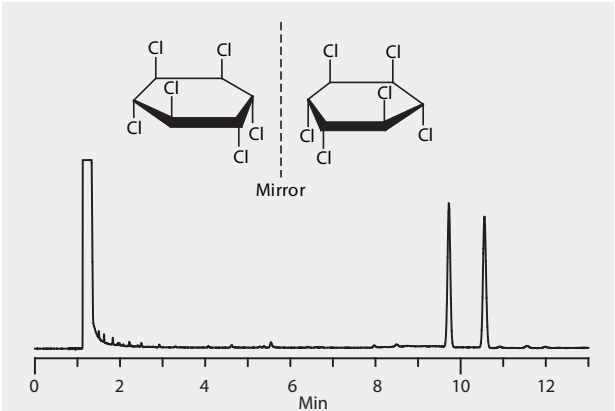
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005051



SUPELCO® Solutions within.™

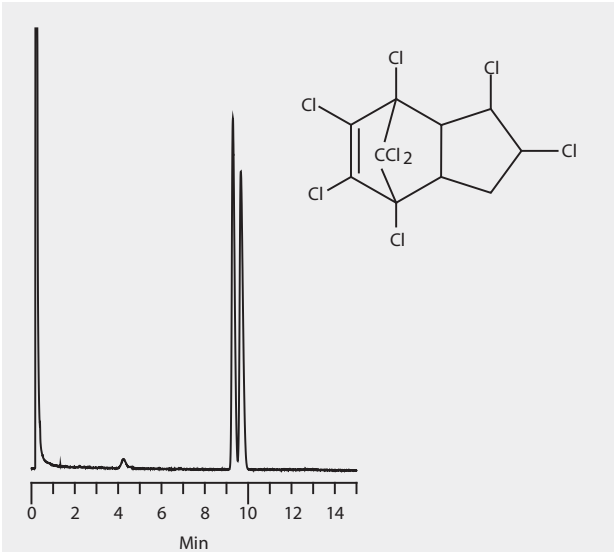
GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-PN

column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005113



GC Analysis of α-Hexachlorocyclohexane (α-HCH) Enantiomers on Astec® CHIRALDEX® G-TA

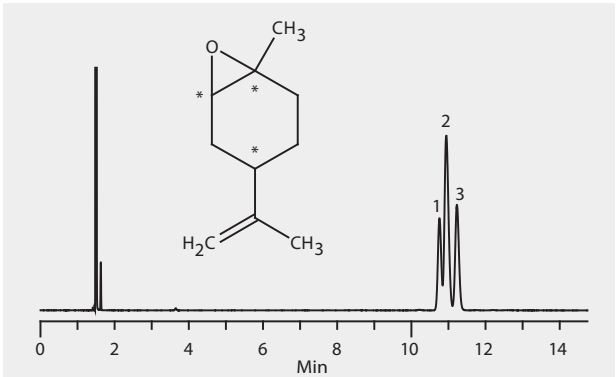
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 0.2 µL, 80:1 split
sample preparation . . . . . 2 mg/mL in ethanol
peaks 1 & 2: α-HCH (α-hexachlorocyclohexane) enantiomers
Application No. G005111



SUPELCO® Solutions within.™

GC Analysis of cis/trans Limonene Oxide Enantiomers on Astec® CHIRALDEX® B-PH

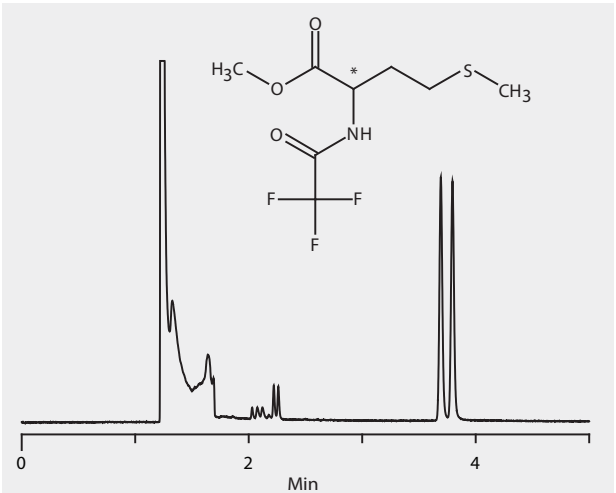
column . . . . Astec CHIRALDEX B-PH, 30 m x 0.25 mm I.D., 0.12 µm (71023AST)
oven . . . . . 90 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL in methylene chloride
peak 1: d-cis or d-trans limonene oxide
peak 2: l-cis and trans limonene oxide
peak 3: d-trans or d-cis limonene oxide
Application No. G005066



SUPELCO® Solutions within.™

GC Analysis of Methionine Methyl Ester Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-TA

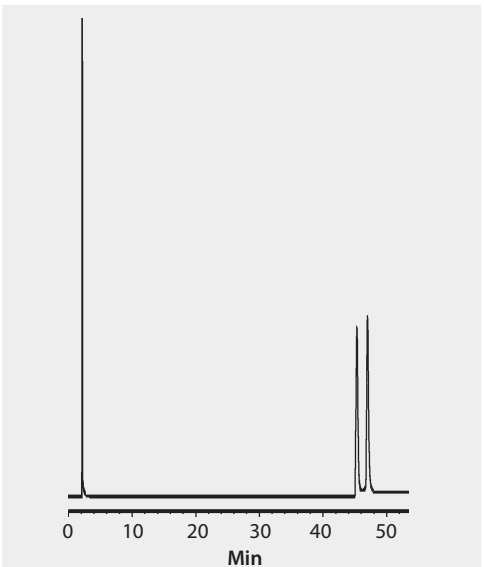
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . peaks 1 & 2: methionine methyl ester enantiomers (N-TFA derivatives)
Application No. G005061



SUPELCO® Solutions within.™

GC Analysis of 4-Methyloctanoic Acid Enantiomers on γ-DEX™ 120

column . . . . . γ-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24307)
oven . . . . . 115 °C
inj. temp. . . . . 220 °C
detector . . . . . FID, 300 °C
carrier gas . . . . . helium, 20 cm/sec
injection . . . . . 1 µL, 100:1 split
sample . . . . . ~1 mg/mL each enantiomer in methylene chloride
Application No. 797-0225

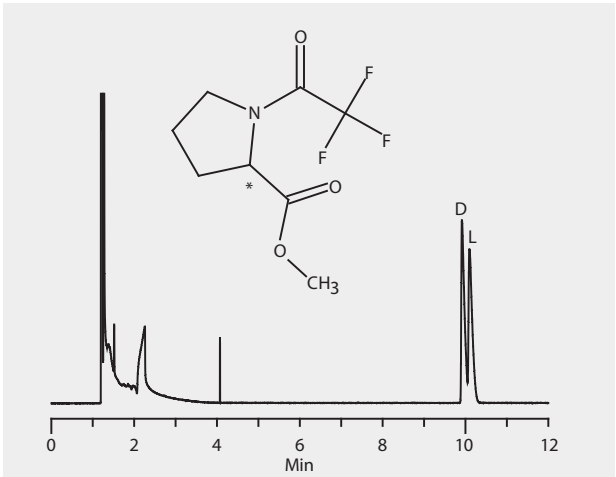


SUPELCO®
Solutions within.™

GC Analysis of Proline Methyl Ester Enantiomers (N-Acetyl Derivatives) on Astec® CHIRALDEX® G-TA

Elution order reversal using the N-trifluoroacetyl derivative.

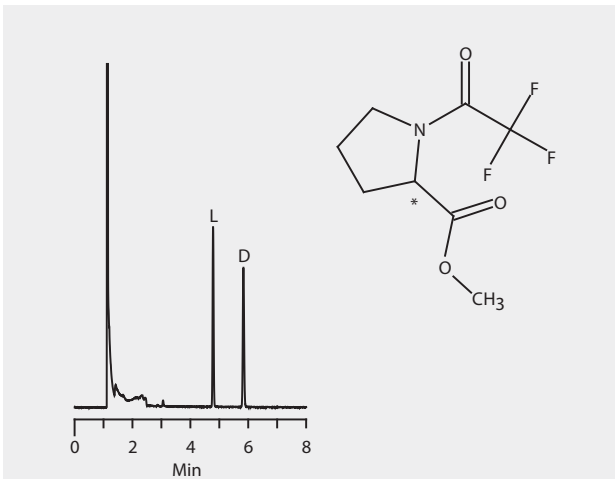
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 155 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL racemate in methanol
peak 1: D-proline methyl ester (N-acetyl derivative)
peak 2: L-proline methyl ester (N-acetyl derivative
Application No. G005102



GC Analysis of Proline Methyl Ester Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-TA

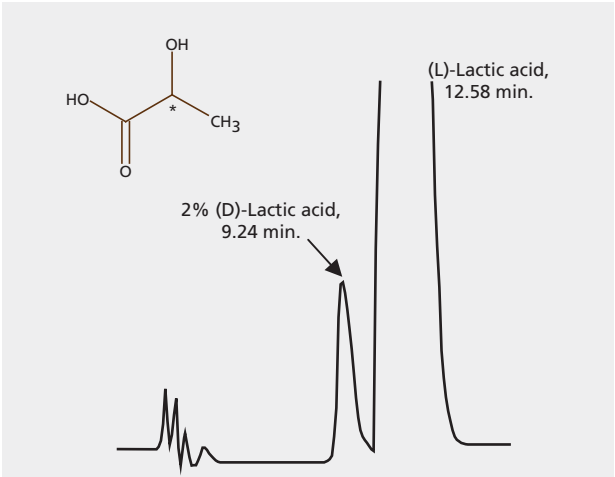
Elution order reversal using the N-acetyl derivative.

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 140 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL racemate in methanol
peak 1: L-proline methyl ester (N-TFA derivative)
peak 1: D-proline methyl ester (N-TFA derivative)
Application No. G005101



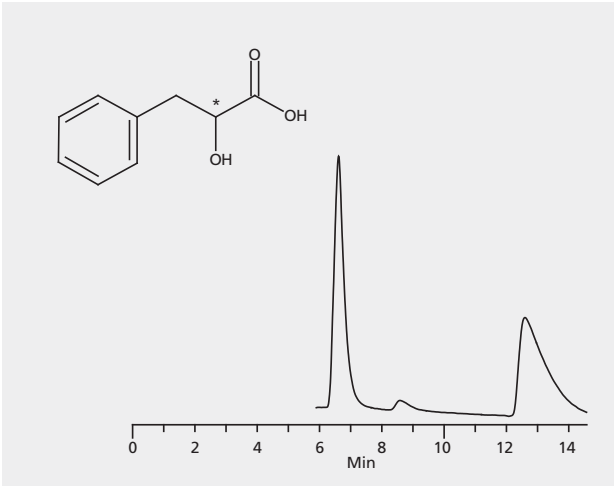
HPLC Analysis of Lactic Acid Enantiomers on Astec® CLC-L, Trace Level Detection

column . . . . . Astec CLC-L, 15 cm x 4.6 mm I.D., 5 µm particles (53123AST)
mobile phase . . . . . 5 mM copper sulfate
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 5 mg/mL in water
Application No. G004663



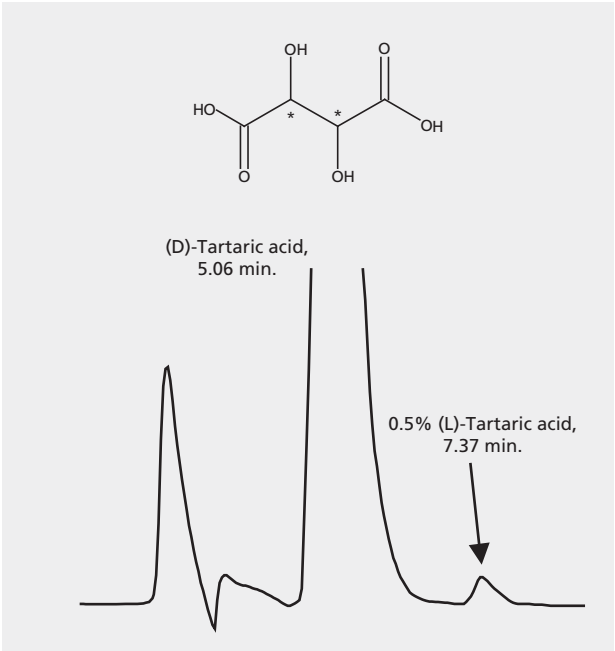
HPLC Analysis of 3-Phenyllactic Acid Enantiomers on Astec® CHIROBIOTIC® R

column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1% ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 0.5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004680



HPLC Analysis of Tartaric Acid Enantiomers on Astec® CLC-D, Trace Level Detection

column . . . . . Astec CLC-D, 15 cm x 4.6 mm I.D., 5 µm particles (53023AST)
mobile phase . . . . . 3 mM copper sulfate, pH 3.2
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 5 mg/mL in water
Application No. G004665

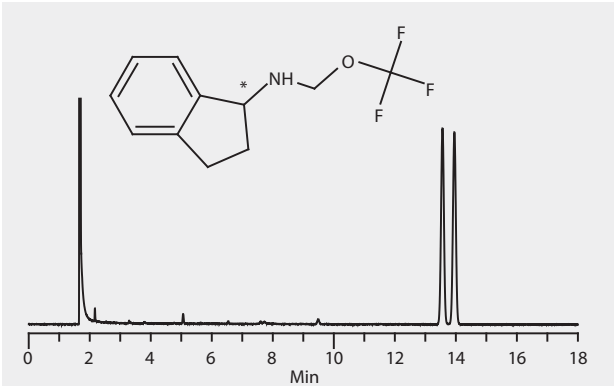


SUPELCO
Solutions within.™

Forensics and Toxicology

GC Analysis of 1-Aminoindan Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DA

column . . . . Astec CHIRALDEX G-DA, 30 m x 0.25 mm I.D., 0.12 µm (72033AST)
oven . . . . . 150 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
sample . . . . . peaks 1 & 2: 1-aminoindan enantiomers (N-TFA derivatives)
Application No. G005144

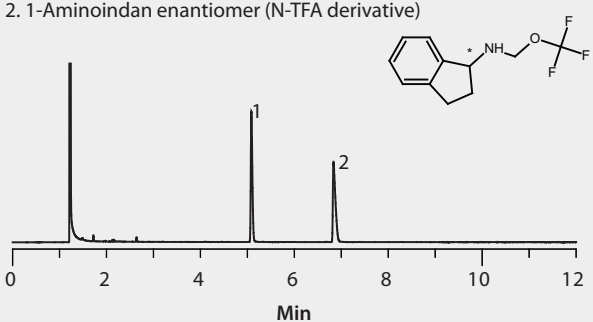


SUPELCO®
Solutions within.™

GC Analysis of 1-Aminoindan Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DP

column . . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 1-aminoindan enantiomers (N-TFA derivatives)
Application No. G005033

1. 1-Aminoindan enantiomer (N-TFA derivative)
2. 1-Aminoindan enantiomer (N-TFA derivative)

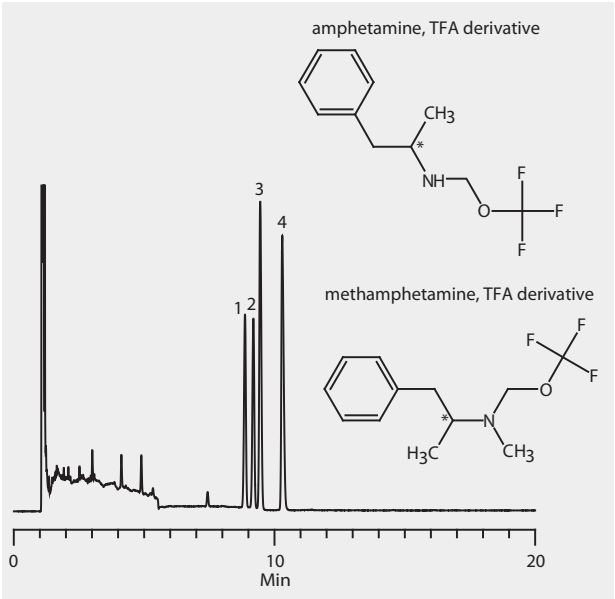


SUPELCO®
Solutions within.™

GC Analysis of Amphetamine and Methamphetamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-PN

Elution order reversal of amphetamine (d,l) by using CHIRALDEX G-DP, 140°C.

column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 130 °C
detector . . . . . FID, 250 °C
inj. temp. . . . . 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL each compound in methanol
peak 1: d-methamphetamine
peak 2: l-methamphetamine
peak 3: l-amphetamine
peak 4: d-amphetamine
Application No. G005071

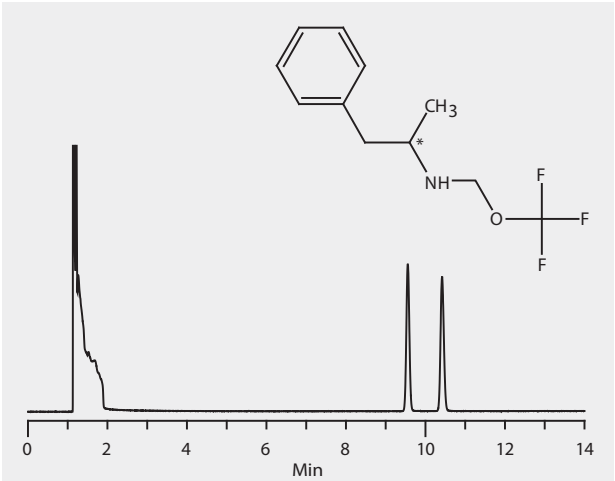


SUPELCO® Solutions within.™

GC Analysis of Amphetamine Enantiomers (N-Trifluoroacetyl Derivative) on Astec® CHIRALDEX® G-PN

Achieve elution order reversal (d,l) by using CHIRALDEX G-DP column, 140 °C (see G005151).

column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 130 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
inj. temp. . . . . 250 °C
liner . . . . . 4 mm I.D., double taper
sample . . . . . peak 1: l-amphetamine (N-TFA)
peak 2: d-amphetamine (N-TFA)
Application No. G005053

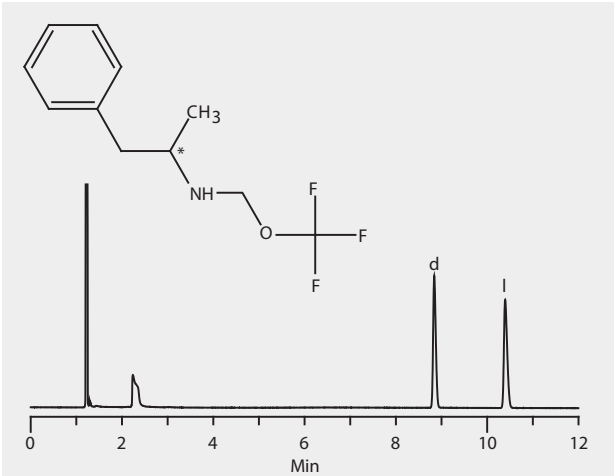


SUPELCO®
Solutions within.™

GC Analysis of Amphetamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DP

Elution order reversal (l,d) by using CHIRALDEX G-PN, 130°C (see G005053).

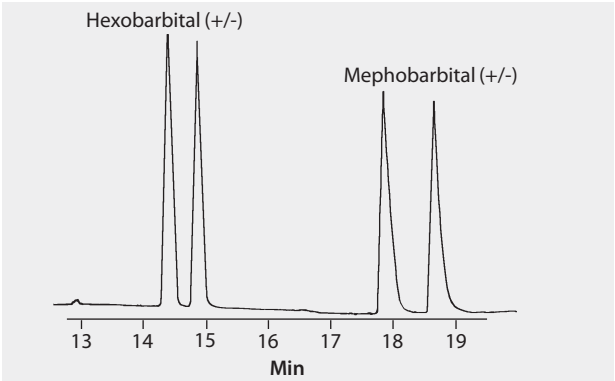
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 140 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 2.7 mL/min., constant flow
injection . . . . . 1 µL, 80:1 split
liner . . . . . 4 mm I.D., FocusLiner
sample . . . . . 4 mg/mL each compound in methylene chloride
peak 1: d-amphetamine (N-TFA derivative)
peak 2: l-amphetamine (N-TFA derivative)
Application No. G005151



SUPELCO® Solutions within.™

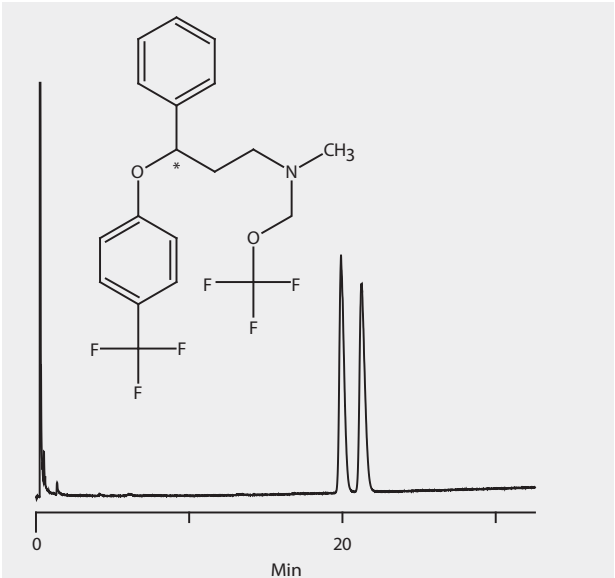
GC Analysis of Barbiturate Enantiomers on β-DEX™ 120

column	β-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24304)
oven	210 °C
inj. temp.	300 °C
detector	FID, 300 °C
carrier gas	helium, 20 cm/sec @ 275 °C
injection	100:1 split
Application No.	92-0342



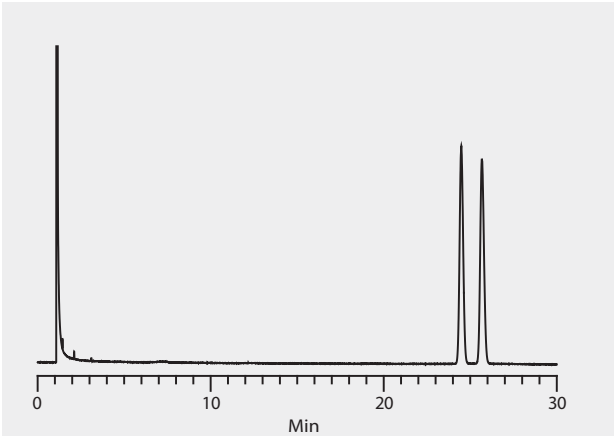
GC Analysis of Fluoxetine Enantiomers (N-TFA Derivatives) on Astec® CHIRALDEX® B-DA

column . . . . Astec CHIRALDEX B-DA, 10 m x 0.25 mm I.D., 0.12 µm (72021AST)
oven . . . . . 175 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
inj. temp. . . . . 250 °C
sample . . . . . peaks 1 & 2: fluoxetine enantiomers (N-TFA derivatives)
Application No. G005063



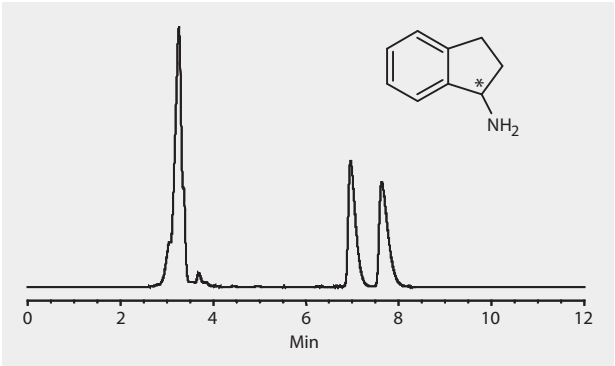
GC Analysis of Methylphenidate (Ritalin) Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® B-DA

column . . . . Astec CHIRALDEX B-DA, 30 m x 0.25 mm I.D., 0.12 µm (72023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 35 psi
sample . . . . . peaks 1 & 2: methylphenidate enantiomers (N-TFA derivative)
Application No. G005070



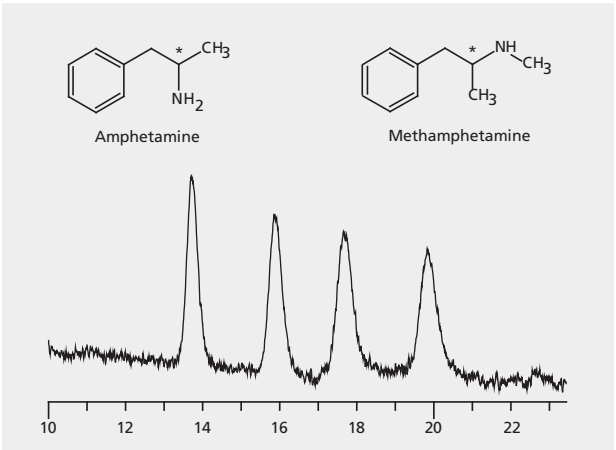
HPLC Analysis of 1-Aminoindan Enantiomers on LARIHC™ CF6-P

column . . LARIHC CF6-P, 25 cm x 4.6 mm I.D., 5 µm particles (AZYP Part No.L1001, available from Supelco/Sigma-Aldrich as a custom item)
mobile phase . . . . . (A) methanol: (B) acetonitrile: (C) acetic acid: (D) triethylamine, (70:30:0.3.0.2, A:B:C:D)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1-Aminoindan, 0.3 mg/mL in ethanol
Application No. G005255



HPLC Analysis of Amphetamine and Methamphetamine Enantiomers on Astec® CHIROBIOTIC® V2

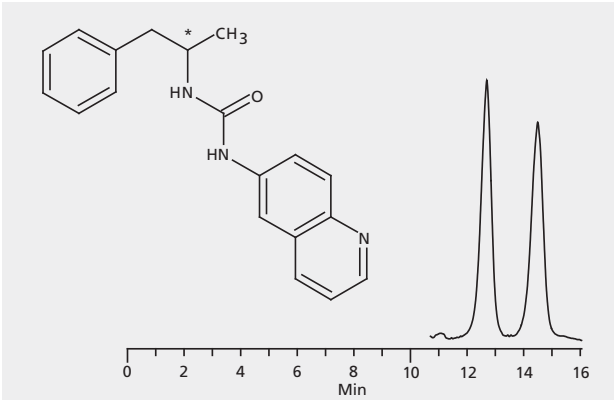
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) ammonium hydroxide; (99.88:0.1:0.01, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004467



SUPELCO
Solutions within.™

HPLC Analysis of AQC-Amphetamine Enantiomers on Astec® CYCLOBOND® I 2000 DMP

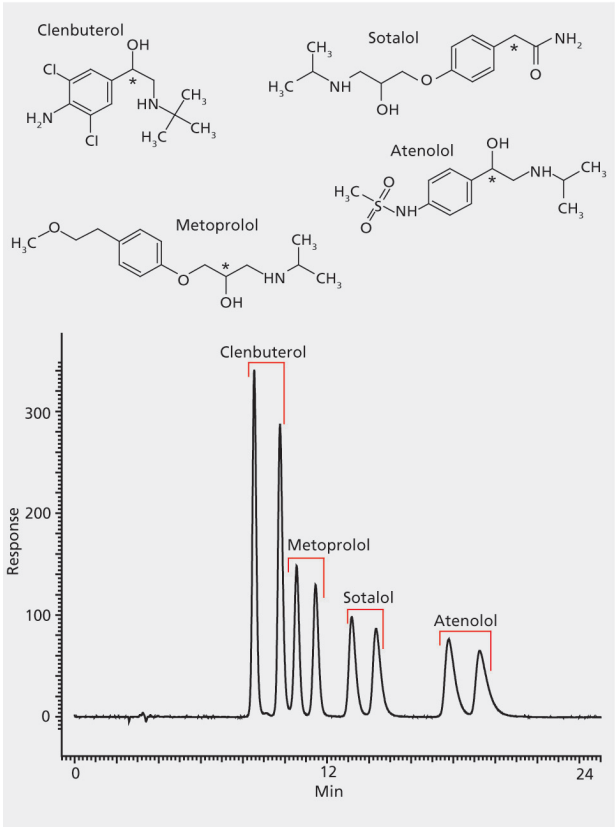
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) acetonitrile; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004696



SUPELCO®
Solutions within.™

HPLC Analysis of Beta-Receptor Agonist Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm, 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
Application No. G004337

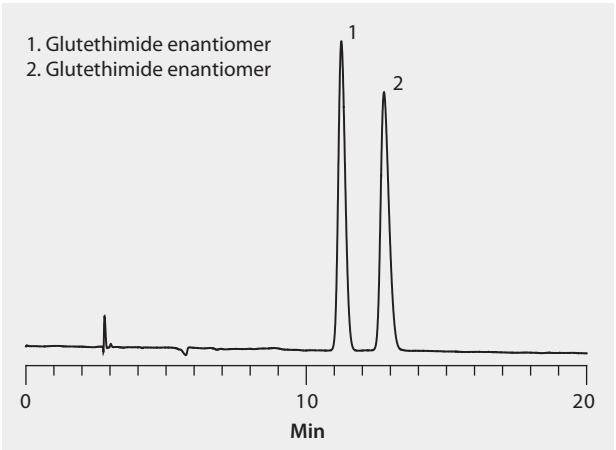


SUPELCO
Solutions within.™

HPLC Analysis of Glutethimide Enantiomers on Astec® Cellulose DMP

Glutethimide enantiomers are resolved by normal phase chromatography. Glutethimide is used to treat insomnia.

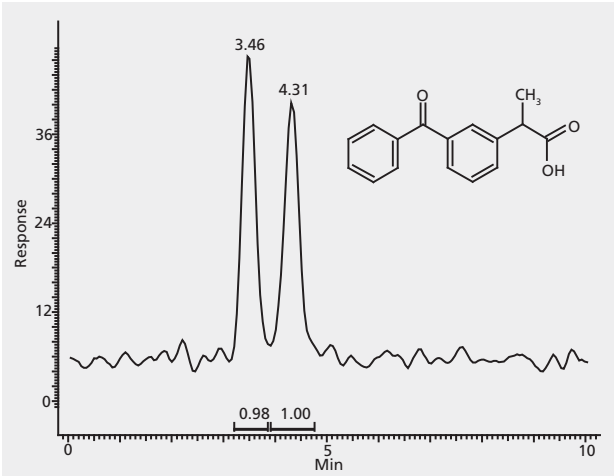
column . . Astec Cellulose DMP, 25 cm x 4.6 mm I.D., 5 µm particles (51099AST)
mobile phase . . . . . (A) heptane; (B) isopropanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
detector . . . . . UV, 254 nm
injection . . . . . 15 µL
sample . . . . . glutethimide, 1 g/L in heptane:isopropanol (50:50)
Application No. G005514



SUPELCO® Solutions within.™

HPLC Analysis of Ketoprofen Enantiomers on Astec® CHIROBIOTIC® R (MS Detection)

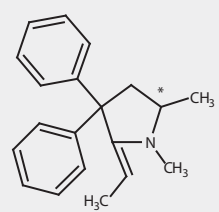
column . . . . . CHIROBIOTIC R, 15 cm x 2.1 mm, 5 µm particles (13019AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 5.6 (B) methanol; (70:30, A:B)
flow rate . . . . . 0.2 mL/min
column temp. . . . . 35 °C
detector . . . . . ESI(-)
Application No. G004331



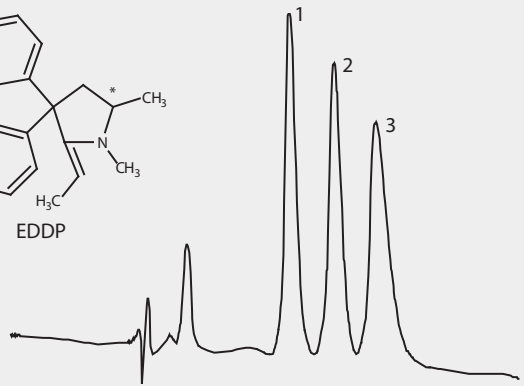
HPLC Analysis of Methadone Enantiomers and Methadone Metabolite EDDP on Astec® CYCLOBOND® I 2000 HP-RSP

column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . . . . (A) 0.1% acetic acid; (B) acetonitrile; (80:20, A:B)
flow rate . . . . . 0.8 mL/min
detector . . . . . UV, 292 nm
Application No. G004734

Peak	Rt (min)	Peak ID
1	8.5	R-Methadone
2	9.7	S-Methadone
3	11.0	R,S-EDDP (2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine)



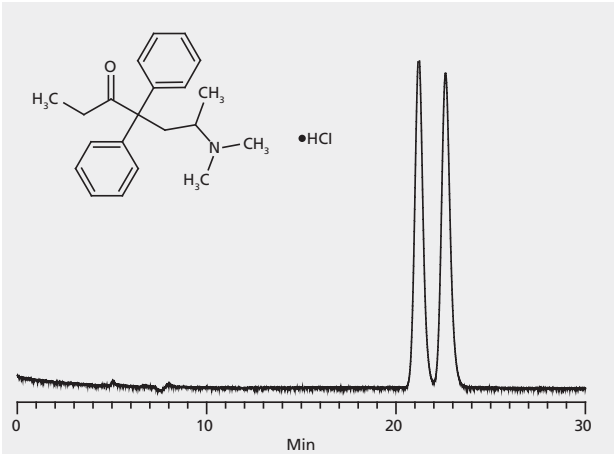
EDDP



SUPELCO®
Solutions within.™

HPLC Analysis of Methadone Enantiomers on Astec® CHIROBIOTIC® V2

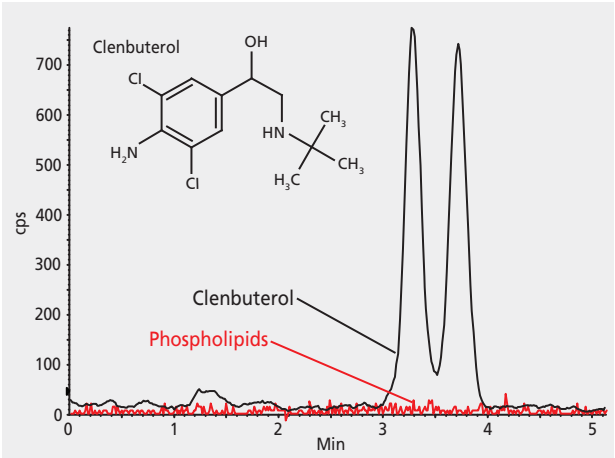
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . (A) methanol; (B) 20 mM ammonium formate; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 205 nm
injection . . . . . 2 µL
sample . . . . . methadone, 1 mg/mL in mobile phase
Application No. G004403



SUPELCO® Solutions within.™

LC-MS Analysis of Clenbuterol Enantiomers in Plasma on Astec® CHIROBIOTIC® T after SPE using HybridSPE®-Phospholipid

column . . . . . CHIROBIOTIC T, 10 cm x 2.1 mm I.D., 5 µm particles (12018AST)
mobile phase . . . . . 10 mM ammonium formate in methanol
flow rate . . . . . 0.3 mL/min
column temp. . . . . 30 °C
detector . . . . . ESI(+)
sample . . . . . clenbuterol, 10 ng/mL in rat plasma (phospholipids removed by extraction with HybridSPE-Phospholipid)
Application No. G004245

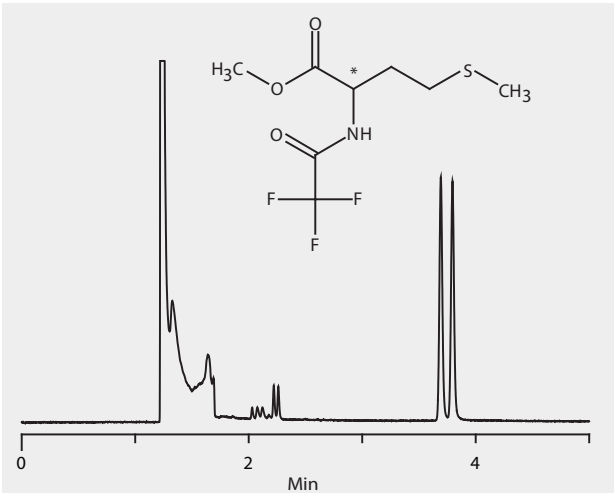


SUPELCO® Solutions within.™

Life Science and Biopharma

GC Analysis of Methionine Methyl Ester Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-TA

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . peaks 1 & 2: methionine methyl ester enantiomers (N-TFA derivatives)
Application No. G005061

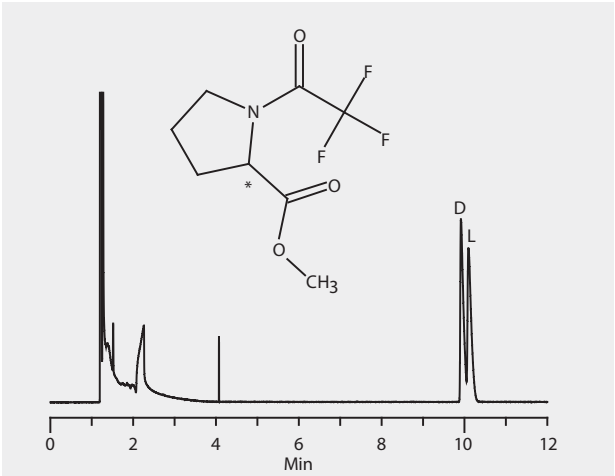


SUPELCO
Solutions within.™

GC Analysis of Proline Methyl Ester Enantiomers (N-Acetyl Derivatives) on Astec® CHIRALDEX® G-TA

Elution order reversal using the N-trifluoroacetyl derivative.

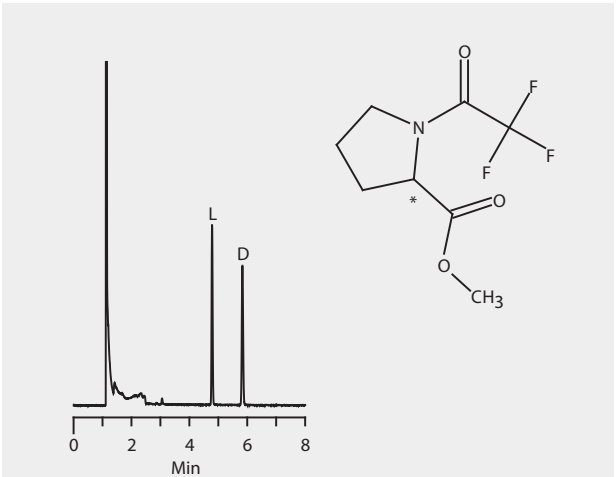
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 155 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL racemate in methanol
peak 1: D-proline methyl ester (N-acetyl derivative)
peak 2: L-proline methyl ester (N-acetyl derivative
Application No. G005102



GC Analysis of Proline Methyl Ester Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-TA

Elution order reversal using the N-acetyl derivative.

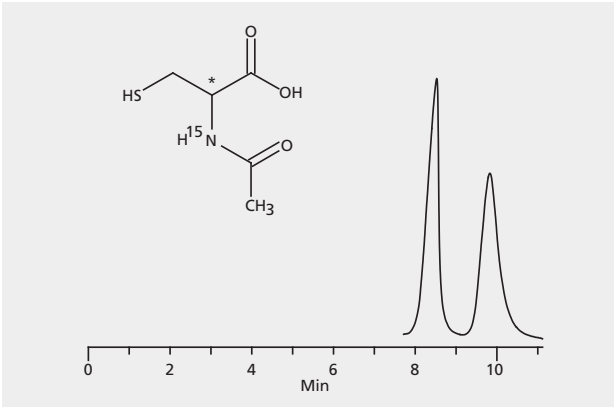
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 140 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL racemate in methanol
peak 1: L-proline methyl ester (N-TFA derivative)
peak 1: D-proline methyl ester (N-TFA derivative)
Application No. G005101



SUPELCO® Solutions within.™

HPLC Analysis of ^{15}N-Acetylcysteine Enantiomers on Astec® (R,R) P-CAP™

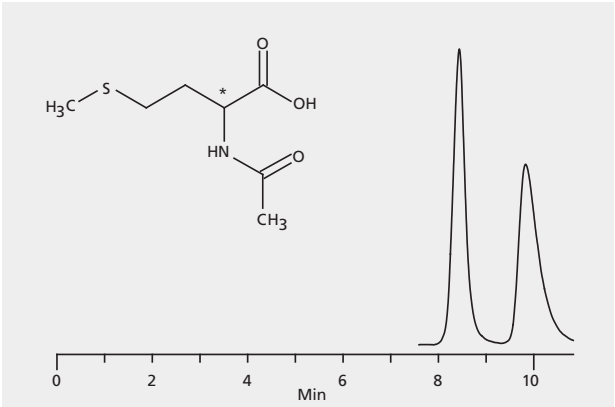
column . . . . Astec (R,R) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST)
mobile phase . . . . . 20 mM ammonium acetate in: (A) acetonitrile; (B) methanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004719



SUPELCO®
Solutions within.™

HPLC Analysis of N-Acetylmethionine Enantiomers on Astec® (R,R) P-CAP™

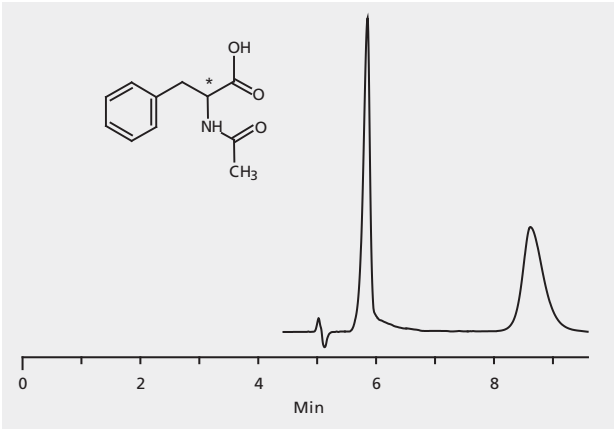
column . . . . Astec (R,R) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST)
mobile phase . . . . . 20 mM ammonium acetate in: (A) acetonitrile; (B) methanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004722



SUPELCO® Solutions within.™

HPLC Analysis of N-Acetylphenylalanine Enantiomers on Astec® CHIROBIOTIC® T

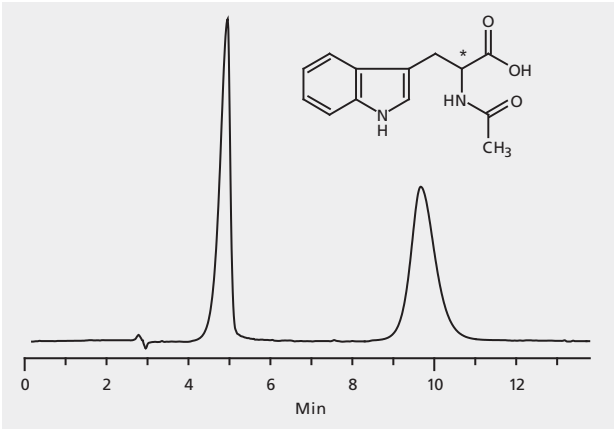
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 0.1% triethylamine acetate, pH 3.8; (B) ethanol; (20:80, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 225 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004556



SUPELCO
Solutions within.™

HPLC Analysis of N-Acetyltryptophan Enantiomers on Astec® CHIROBIOTIC® T

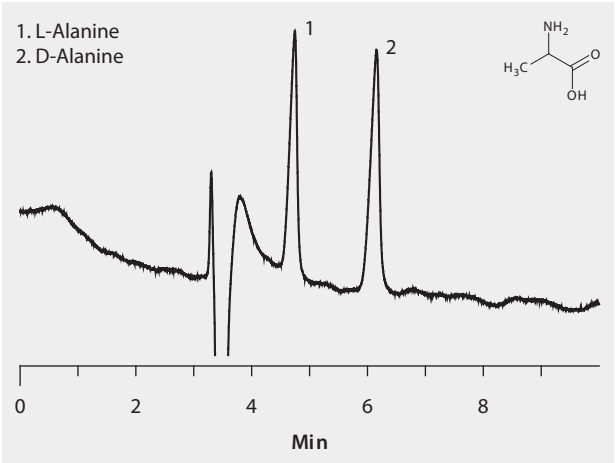
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) 20 mM ammonium acetate; (B) methanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004555



SUPELCO®
Solutions within.™

HPLC Analysis of Alanine Enantiomers on Astec® CHIROBIOTIC® T (Formic Acid Mobile Phase Modifier)

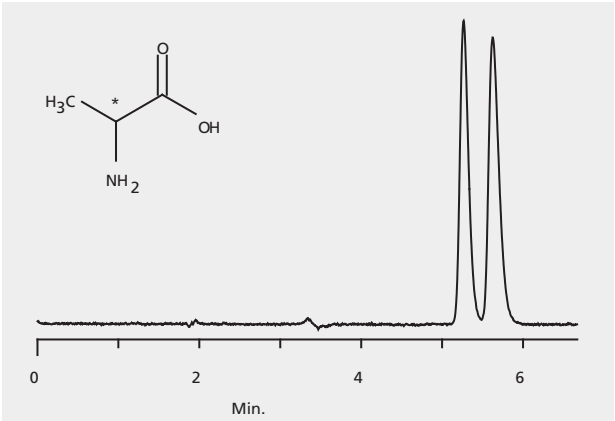
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 mg /mL in 30:70 water:methanol
Application No. G005330



SUPELCO® Solutions within.™

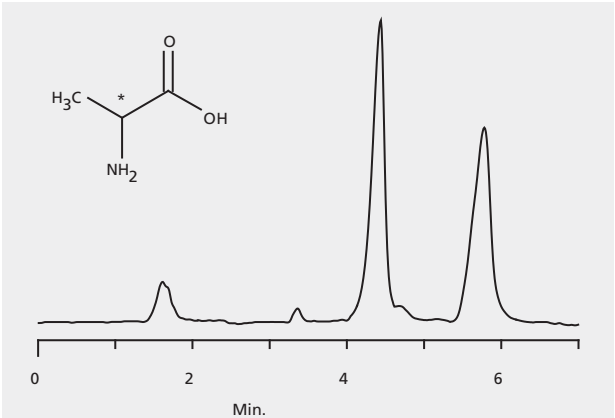
HPLC Analysis of Alanine Enantiomers on Astec® CHIROBIOTIC® T (No Mobile Phase Modifier)

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004485



HPLC Analysis of Alanine Enantiomers on Astec® CHIROBIOTIC® TAG

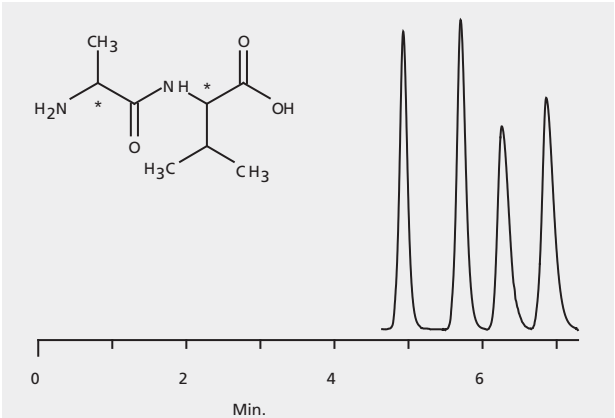
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (50:50, A:B)
flow rate . . . . . 0.8 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004603



SUPELCO®
Solutions within.™

HPLC Analysis of Alanylvaline Enantiomers on Astec® CHIROBIOTIC® T

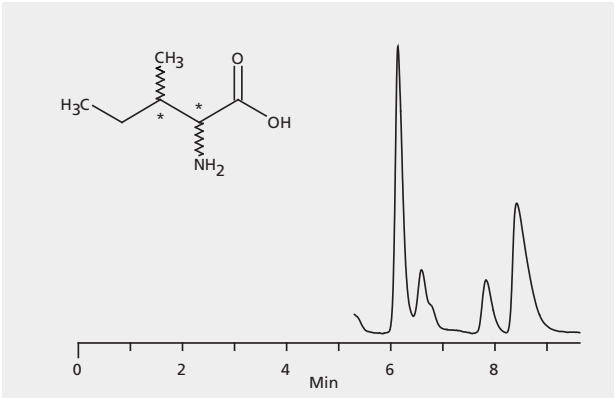
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) acetonitrile; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004582



SUPELCO
Solutions within.™

HPLC Analysis of Alloisoleucine Enantiomers on Astec® CHIROBIOTIC® R

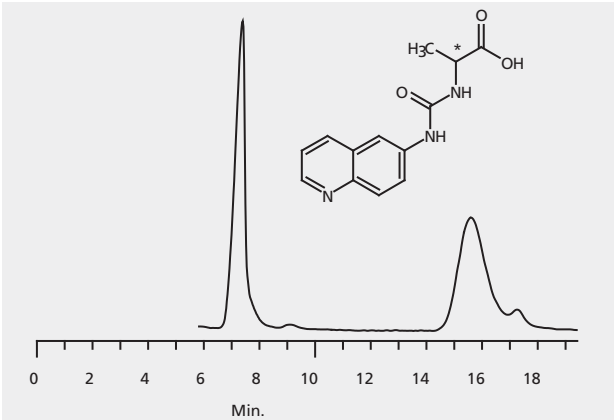
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . (A) water; (B) methanol; (40:60, A:B)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004676



SUPELCO®
Solutions within.™

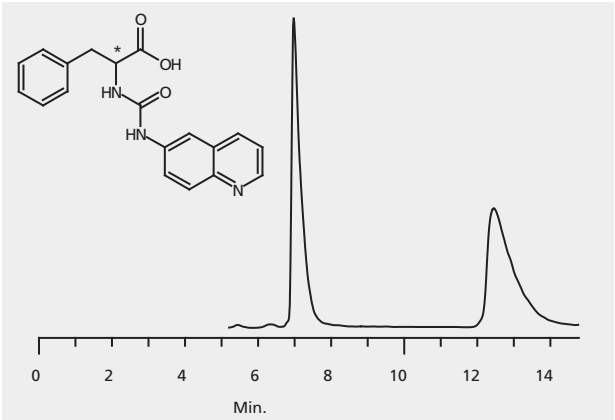
HPLC Analysis of AQC-Alanine Enantiomers on Astec® CHIROBIOTIC® T2

column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (50:50, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 0.5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004602



HPLC Analysis of AQC-Phenylalanine Enantiomers on Astec® CHIROBIOTIC® T

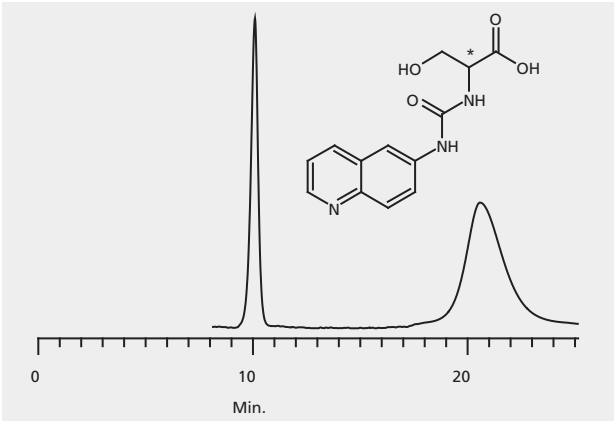
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) methanol; (50:50, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004583



SUPELCO® Solutions within.™

HPLC Analysis of AQC-Serine Enantiomers on Astec® CHIROBIOTIC® T

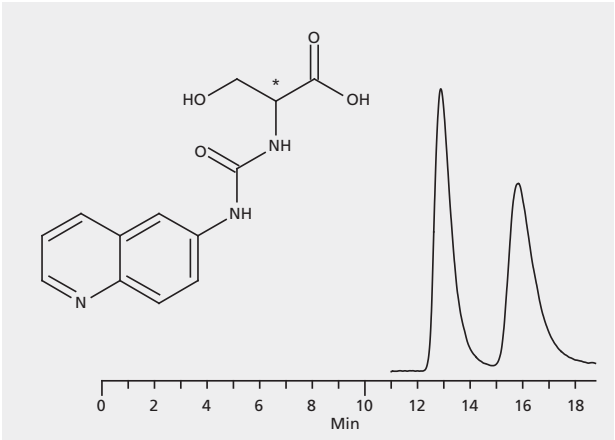
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) methanol; (70:30, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004576



SUPELCO® Solutions within.™

HPLC Analysis of AQC-Serine Enantiomers on Astec® CHIROBIOTIC® T2

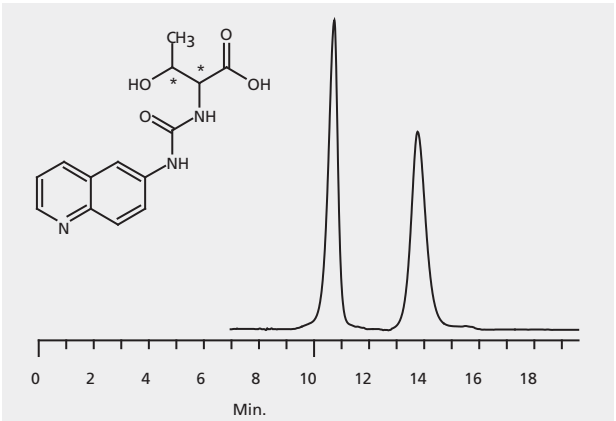
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (70:30, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 0.5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004739



SUPELCO® Solutions within.™

HPLC Analysis of AQC-Threonine Enantiomers on Astec® CHIROBIOTIC® T

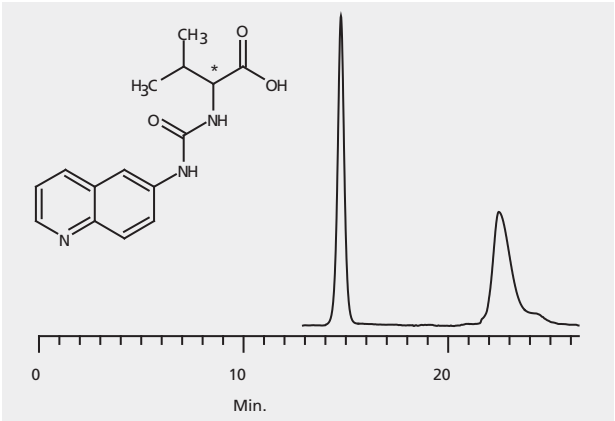
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (90:10, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004578



SUPELCO® Solutions within.™

HPLC Analysis of AQC-Valine Enantiomers on Astec® CHIROBIOTIC® T

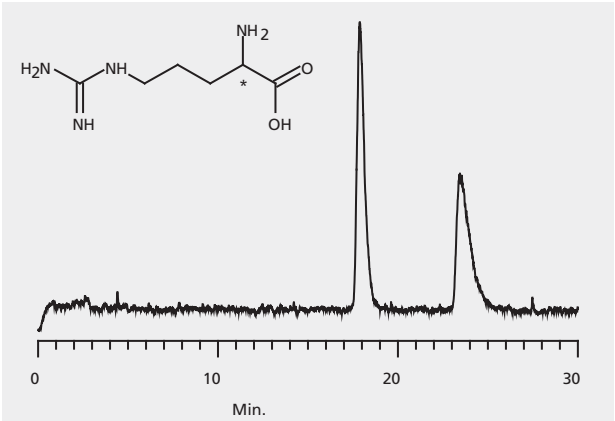
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) methanol; (70:30, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004577



SUPELCO® Solutions within.™

HPLC Analysis of Arginine Enantiomers on Astec® CHIROBIOTIC® T (23 °C)

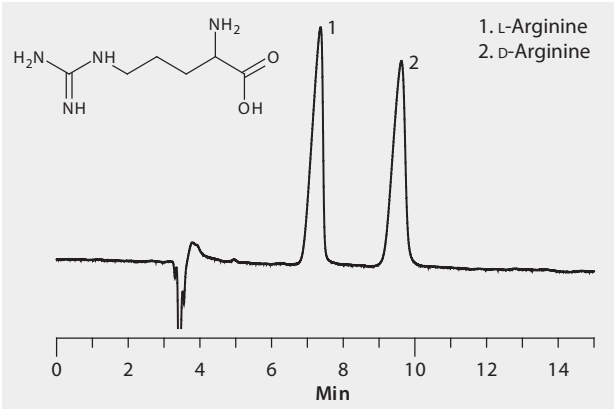
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004487



SUPELCO® Solutions within.™

HPLC Analysis of Arginine Enantiomers on Astec® CHIROBIOTIC® T (25 °C)

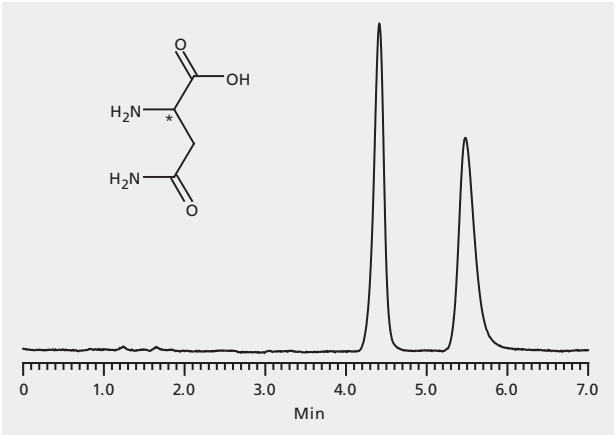
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water, (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005331



SUPELCO® Solutions within.™

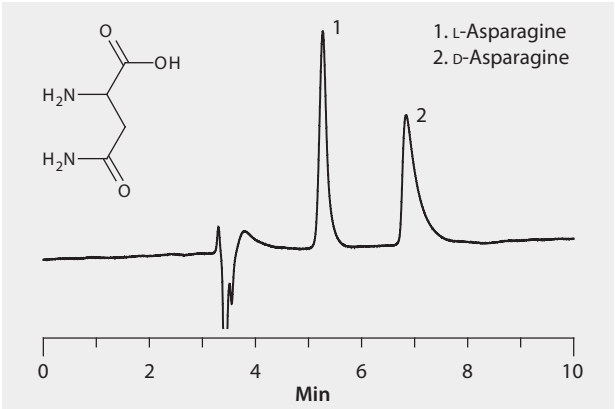
HPLC Analysis of Asparagine Enantiomers on Astec® CHIROBIOTIC® T (23 °C)

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample preparation . . . . . 1 mg/mL in methanol
Application No. G004488



HPLC Analysis of Asparagine Enantiomers on Astec® CHIROBIOTIC® T (25 °C)

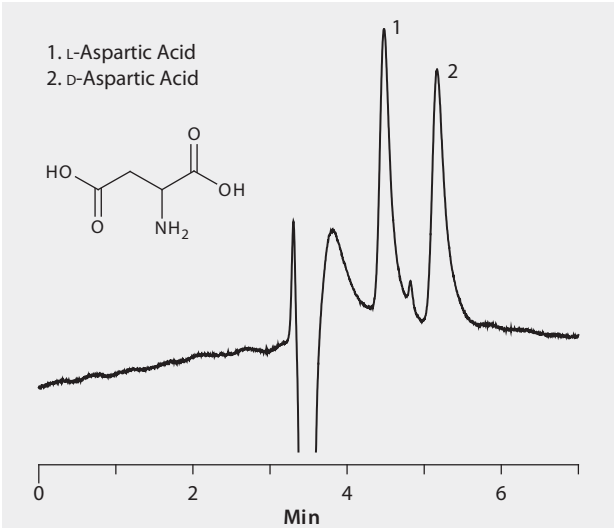
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . (A) water); (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
detector . . . . . UV, 205 nm
column temp. . . . . 25 °C
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005332



SUPELCO®
Solutions within.™

HPLC Analysis of Aspartic Acid Enantiomers on Astec® CHIROBIOTIC® T (Methanol Mobile Phase)

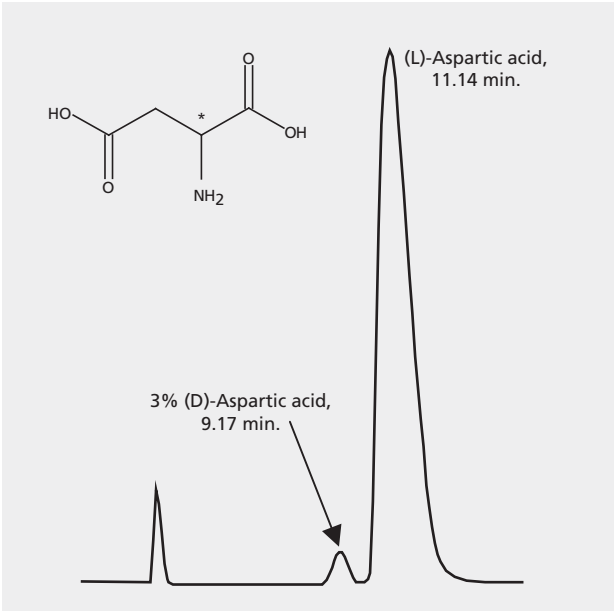
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005333



SUPELCO® Solutions within.™

HPLC Analysis of Aspartic Acid Enantiomers on Astec® CLC-L, Trace Level Detection

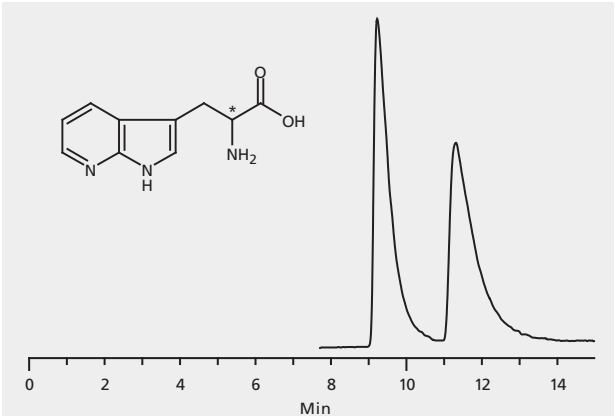
column . . . . . Astec CLC-L, 15 cm x 4.6 mm I.D., 5 µm particles (53123AST)
mobile phase . . . . . 5 mM copper sulfate
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 5 mg/mL in water
Application No. G004664



SUPELCO®
Solutions within.™

HPLC Analysis of 7-Azatryptophan Enantiomers on Astec® CHIROBIOTIC® T

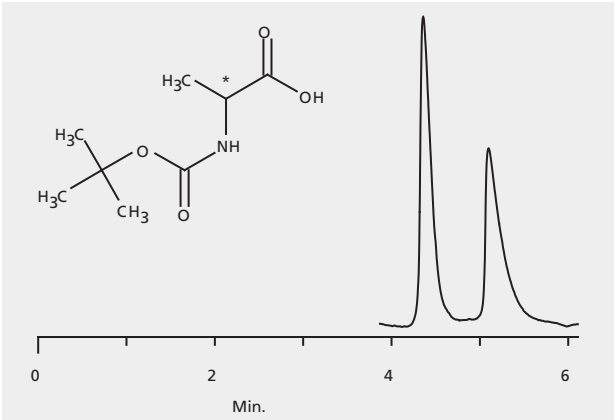
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (70:30, A:B)
flow rate . . . . . 0.8 mL/min
column temp. . . . . ambient
detector . . . . . UV, 210 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol/water/ammonium hydroxide
Application No. G004538



SUPELCO® Solutions within.™

HPLC Analysis of t-BOC-Alanine Enantiomers on Astec® CHIROBIOTIC® T

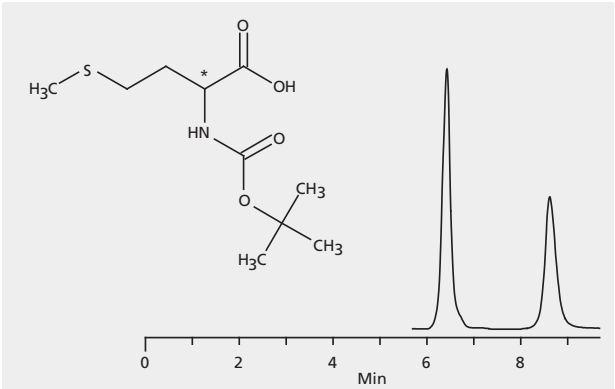
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 6; (B) methanol; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004573



SUPELCO
Solutions within.™

HPLC Analysis of t-BOC-Methionine Enantiomers on Astec® (R,R) P-CAP™

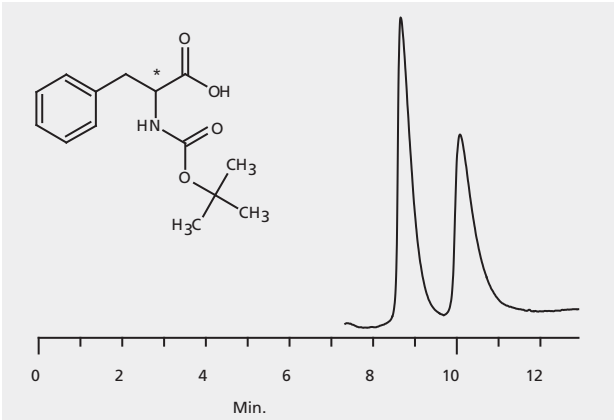
column . . . . Astec (R,R) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST)
mobile phase . . . . . 20 mM ammonium acetate in: (A) acetonitrile; (B) methanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004723



SUPELCO
Solutions within.™

HPLC Analysis of t-BOC-Phenylalanine Enantiomers on Astec® CHIROBIOTIC® T

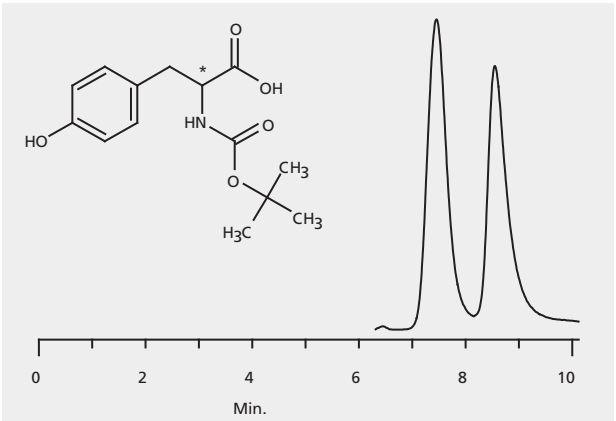
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 6; (B) methanol; (90:10, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004585



SUPELCO®
Solutions within.™

HPLC Analysis of t-BOC-Tyrosine Enantiomers on Astec® CHIROBIOTIC® T

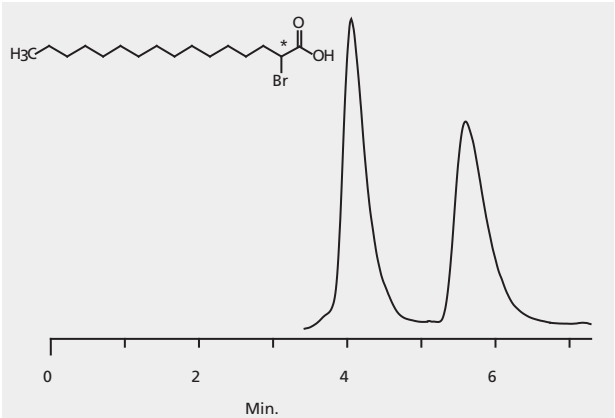
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 6; (B) methanol; (90:10, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004572



SUPELCO® Solutions within.™

HPLC Analysis of α-Bromopalmitic Acid Enantiomers on Astec® CHIROBIOTIC® T2

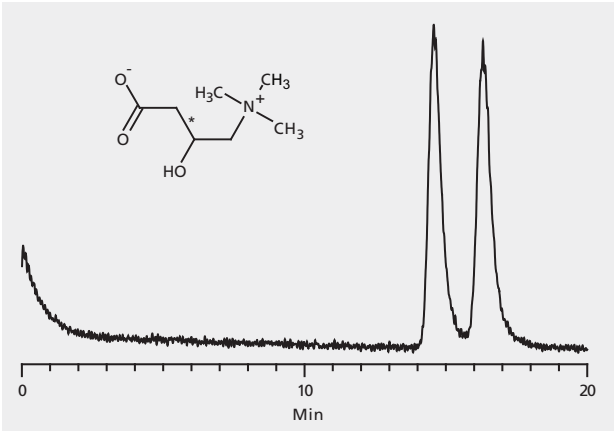
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 5.5; (B) methanol; (40:60, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004601



SUPELCO®
Solutions within.™

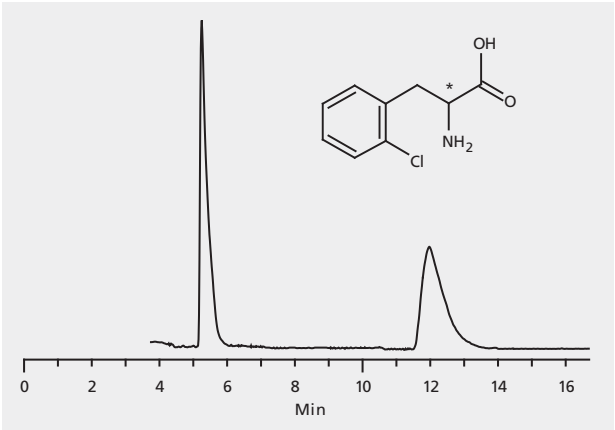
HPLC Analysis of Carnitine Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . (A) 5 mM ammonium acetate, pH 6; (B) methanol; (25:75, A:B)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 35 °C
detector . . . . . ESI(+)-MS (m/z = 162)
injection . . . . . 5 µL
sample . . . . . 1 µg/mL in mobile phase
Application No. G004524



HPLC Analysis of o-Chlorophenylalanine Enantiomers on Astec® CHIROBIOTIC® T

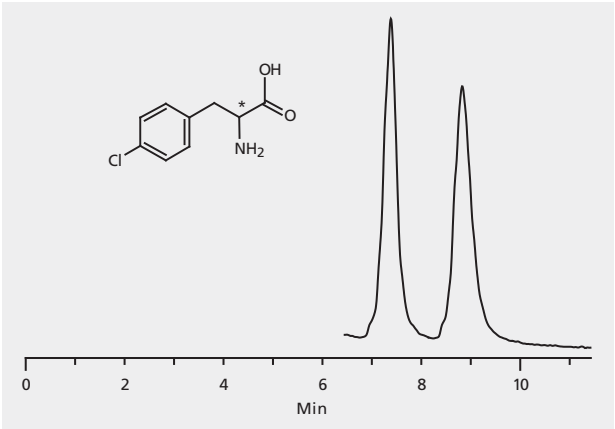
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 210 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004550



SUPELCO®
Solutions within.™

HPLC Analysis of p-Chlorophenylalanine Enantiomers on Astec® CHIROBIOTIC® T

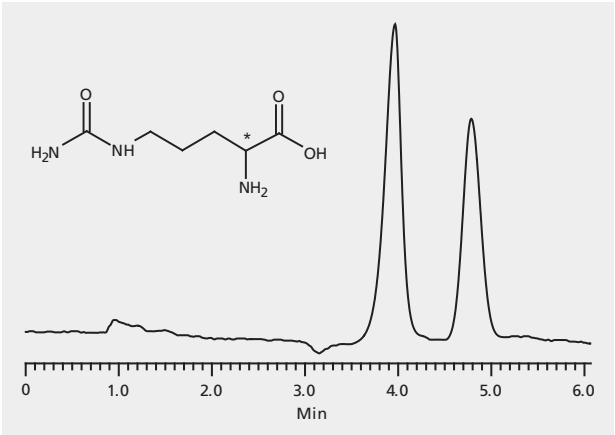
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 3 mg/mL in methanol
Application No. G004546



SUPELCO
Solutions within.™

HPLC Analysis of Citrulline Enantiomers on Astec® CHIROBIOTIC® T

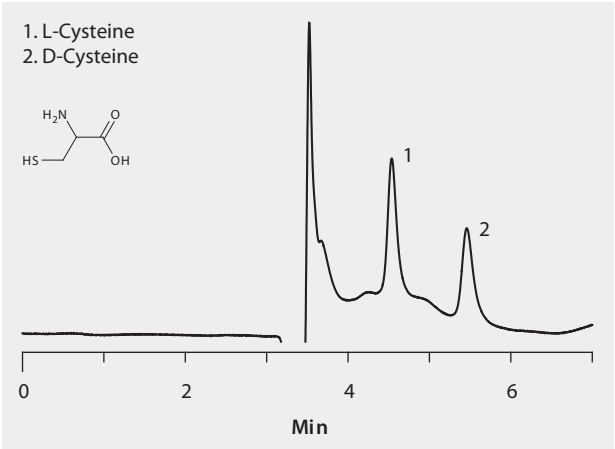
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (50:50, A:B)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004531



SUPELCO®
Solutions within.™

HPLC Analysis of Cysteine Enantiomers on Astec® CHIROBIOTIC® T (Formic Acid Mobile Phase Additive)

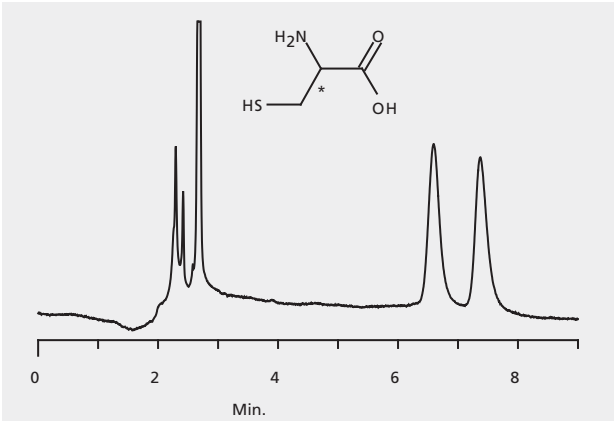
column . . Astec CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (40:60:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . (200 µg /mL in 50:50 water:methanol)
Application No. G005334



SUPELCO® Solutions within.™

HPLC Analysis of Cysteine Enantiomers on Astec® CHIROBIOTIC® T

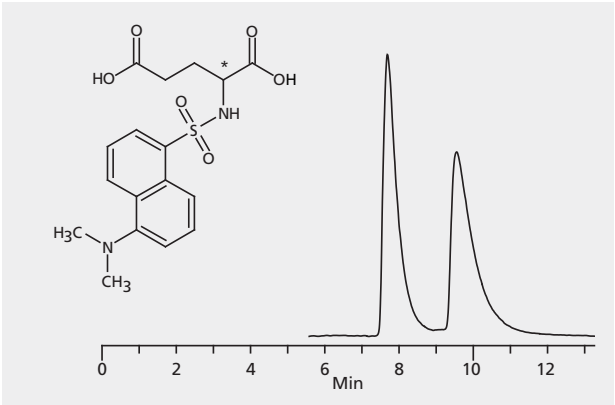
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (30:70, A:B)
extraction tube . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004495



SUPELCO®
Solutions within.™

HPLC Analysis of Dansyl-Glutamic Acid Enantiomers on Astec® CHIROBIOTIC® R

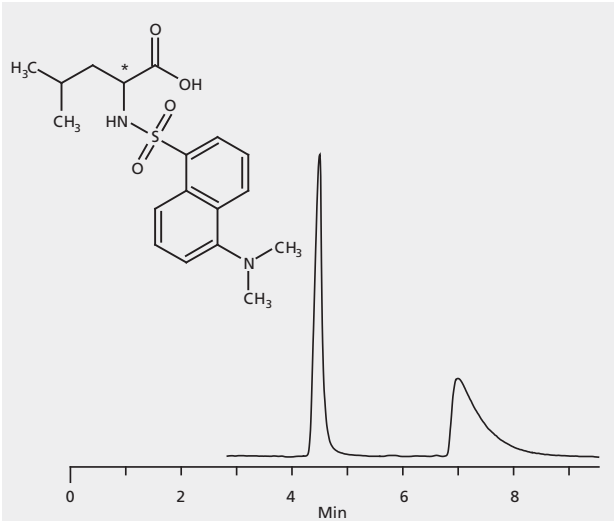
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004669



SUPELCO®
Solutions within.™

HPLC Analysis of Dansyl-Leucine Enantiomers on Astec® CHIROBIOTIC® R

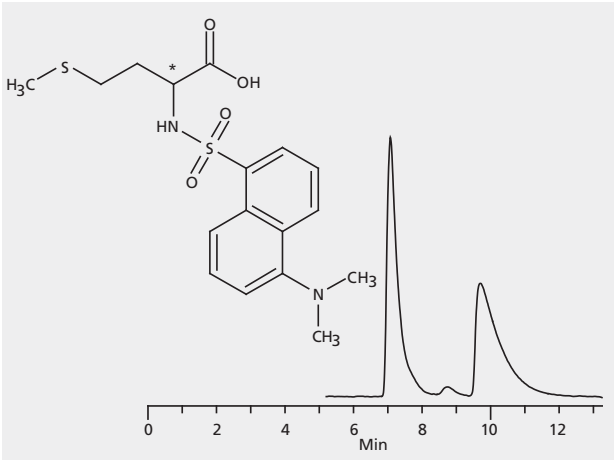
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004670



SUPELCO® Solutions within.™

HPLC Analysis of Dansyl-Methionine Enantiomers on Astec® CHIROBIOTIC® R

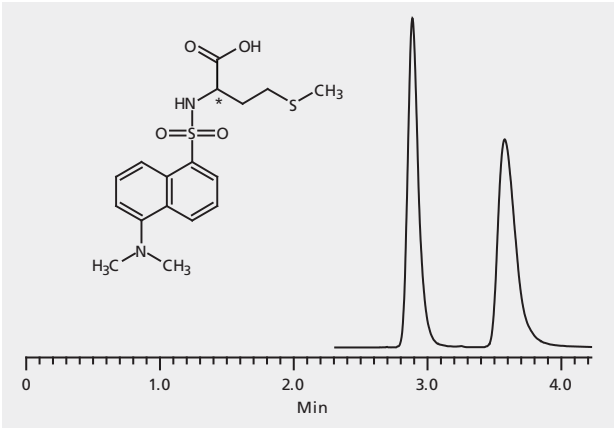
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004671



SUPELCO® Solutions within.™

HPLC Analysis of Dansyl-Methionine Enantiomers on Astec® CHIROBIOTIC® T

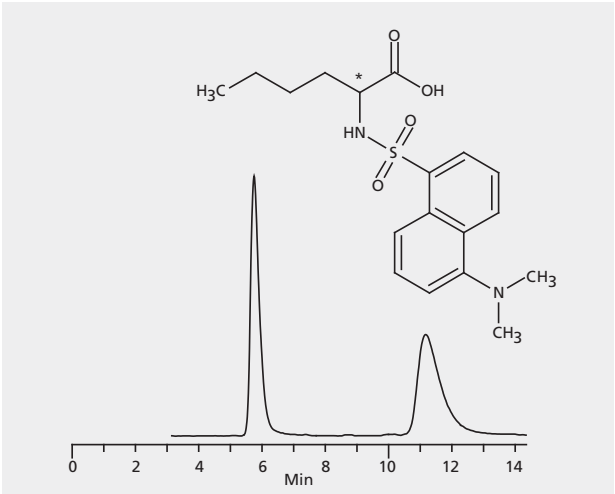
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 0.1 wt% ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 3 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004558



SUPELCO
Solutions within.™

HPLC Analysis of Dansyl-Norleucine Enantiomers on Astec® CHIROBIOTIC® R

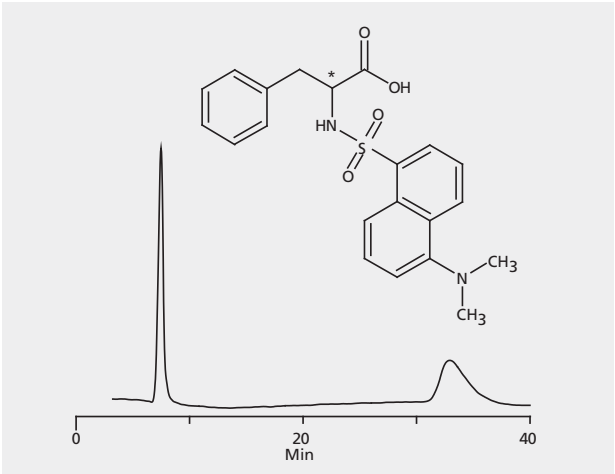
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (70:30. A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004672



SUPELCO® Solutions within.™

HPLC Analysis of Dansyl-Phenylalanine Enantiomers on Astec® CHIROBIOTIC® R

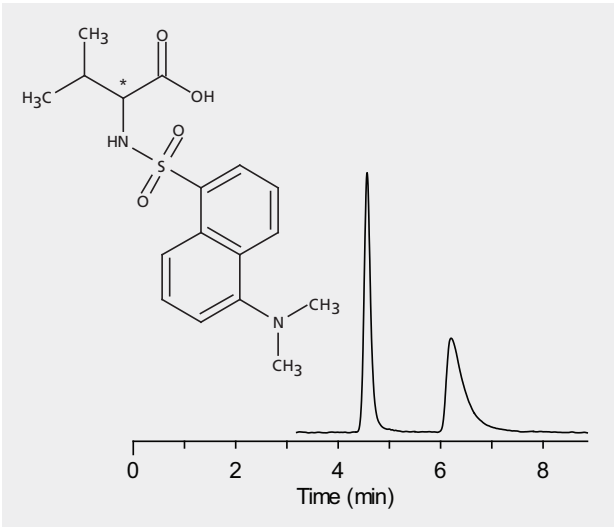
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . (A) 20 mM ammonium acetate; (B) methanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004673



SUPELCO®
Solutions within.™

HPLC Analysis of Dansyl-Valine Enantiomers on Astec® CHIROBIOTIC® R

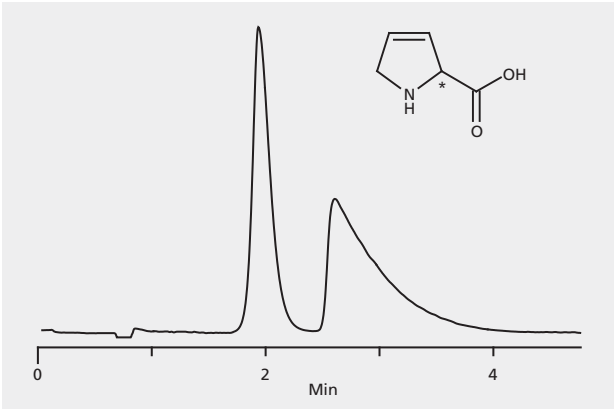
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004675



SUPELCO
Solutions within.™

HPLC Analysis of Dehydroproline Enantiomers on Astec® CHIROBIOTIC® T

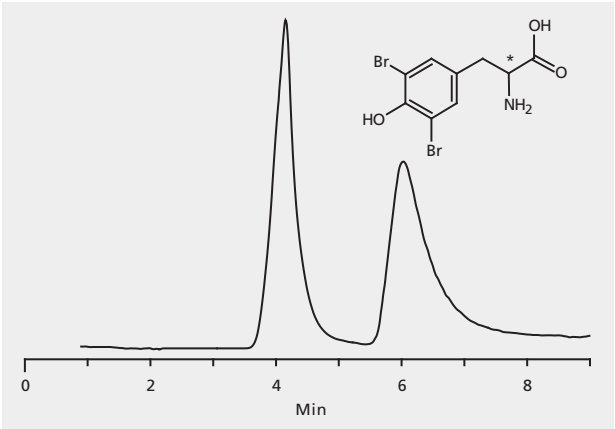
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . water
flow rate . . . . . 2.5 mL/min
column temp. . . . . ambient
detector . . . . . UV, 200 nm
injection . . . . . 100 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004528



SUPELCO
Solutions within.™

HPLC Analysis of 3,5-Dibromo-p-Tyrosine Enantiomers on Astec® CHIROBIOTIC® T

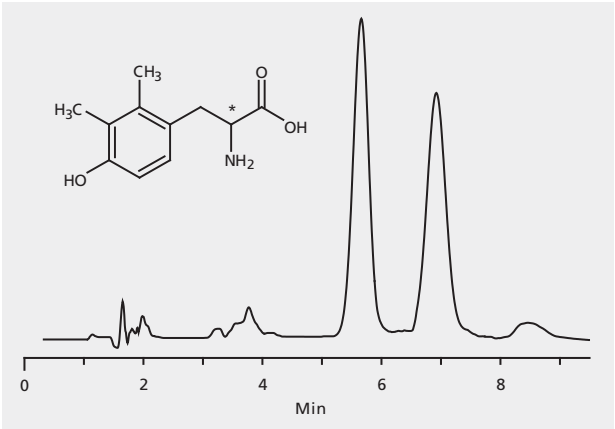
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (50:50, A:B)
flow rate . . . . . 0.8 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004552



SUPELCO® Solutions within.™

HPLC Analysis of 2,3-Dimethyltyrosine Enantiomers on Astec® CHIROBIOTIC® T

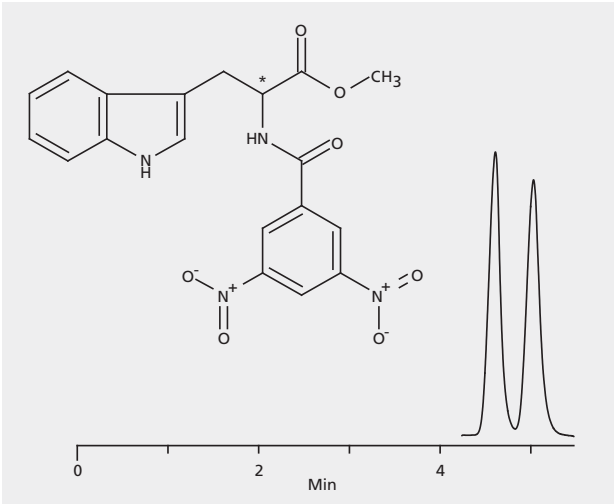
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 210 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004532



SUPELCO®
Solutions within.™

HPLC Analysis of 3,5-DNB-Tryptophan Methyl Ester Enantiomers on Astec® CYCLOBOND® I 2000 SN

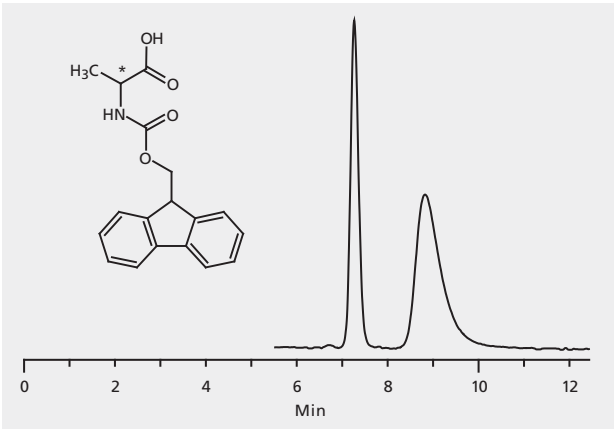
column . . CYCLOBOND I 2000 SN, 25 cm x 4.6 mm I.D., 5 µm particles (20524AST)
mobile phase . . . . . ethanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004709



SUPELCO
Solutions within.™

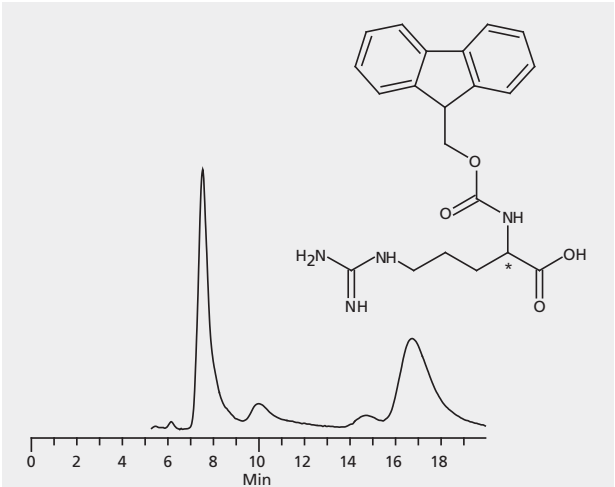
HPLC Analysis of FMOC-Alanine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 5.0; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004559



HPLC Analysis of FMOC-Arginine Enantiomers on Astec® CHIROBIOTIC® R

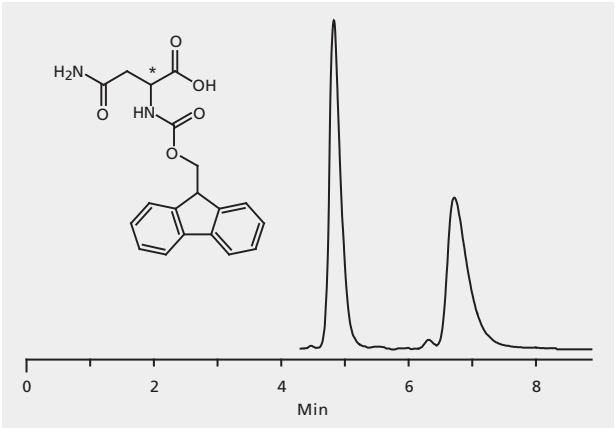
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 260 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004678



SUPELCO® Solutions within.™

HPLC Analysis of FMOC-Asparagine Enantiomers on Astec® CHIROBIOTIC® T

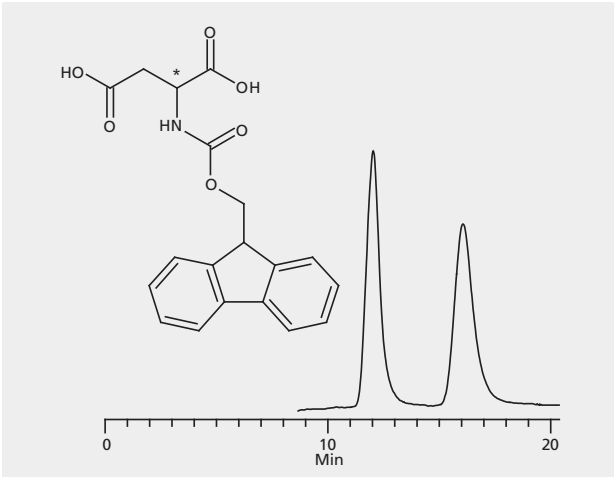
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004562



SUPELCO® Solutions within.™

HPLC Analysis of FMOC-Aspartic Acid Enantiomers on Astec® CHIROBIOTIC® R

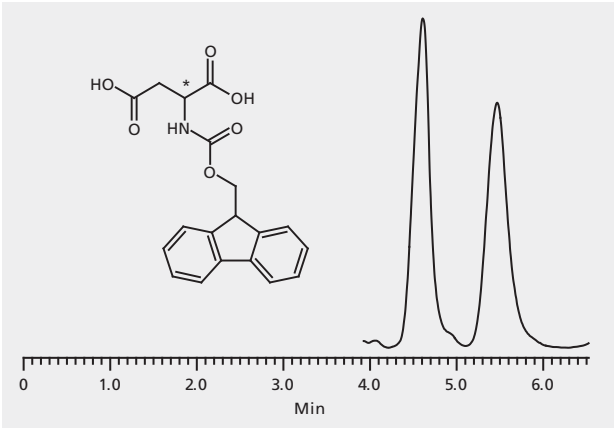
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 5.0; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004677



SUPELCO®
Solutions within.™

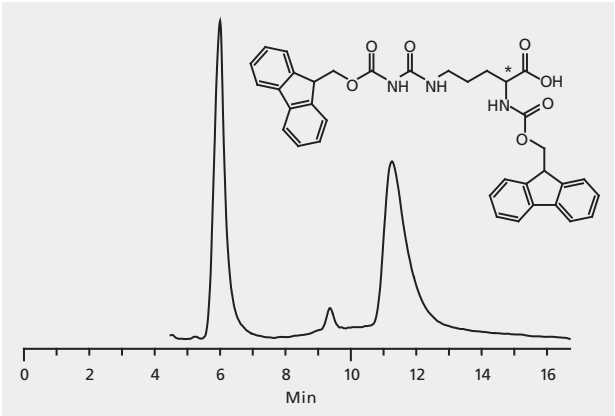
HPLC Analysis of FMOC-Aspartic Acid Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 280 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004560



HPLC Analysis of FMOC-Citrulline Enantiomers on Astec® CHIROBIOTIC® T

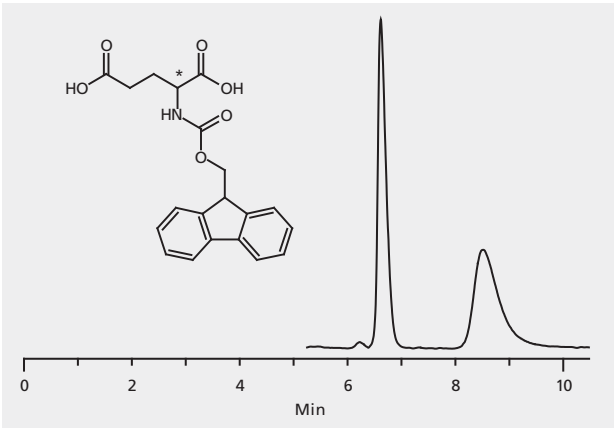
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004563



SUPELCO®
Solutions within.™

HPLC Analysis of FMOC-Glutamic Acid Enantiomers on Astec® CHIROBIOTIC® T

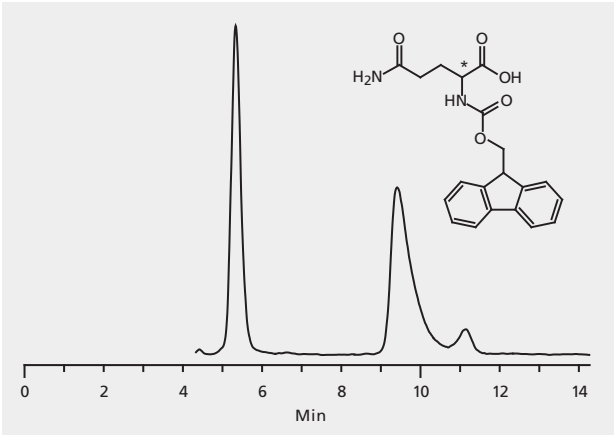
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004561



SUPELCO® Solutions within.™

HPLC Analysis of FMOC-Glutamine Enantiomers on Astec® CHIROBIOTIC® T

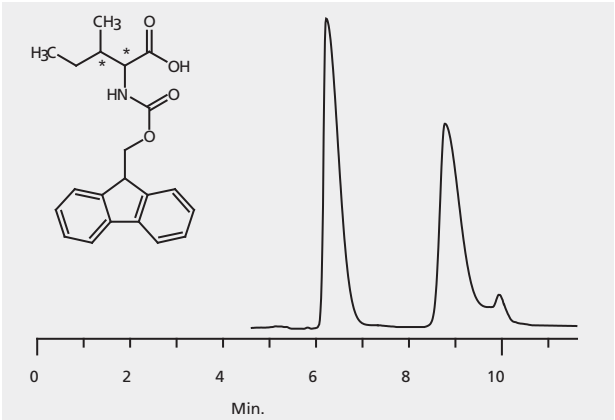
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004565



SUPELCO® Solutions within.™

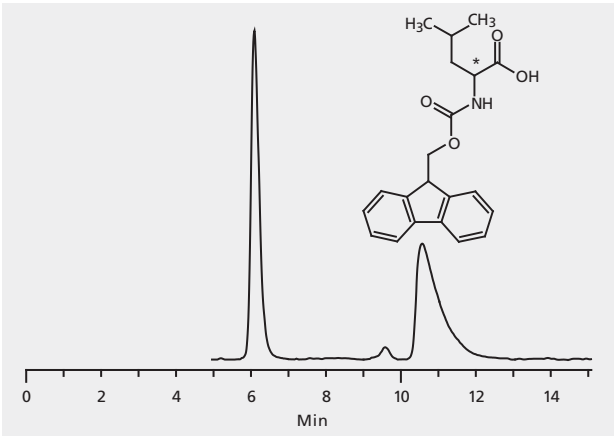
HPLC Analysis of FMOC-Isoleucine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 3 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004575



HPLC Analysis of FMOC-Leucine Enantiomers on Astec® CHIROBIOTIC® T

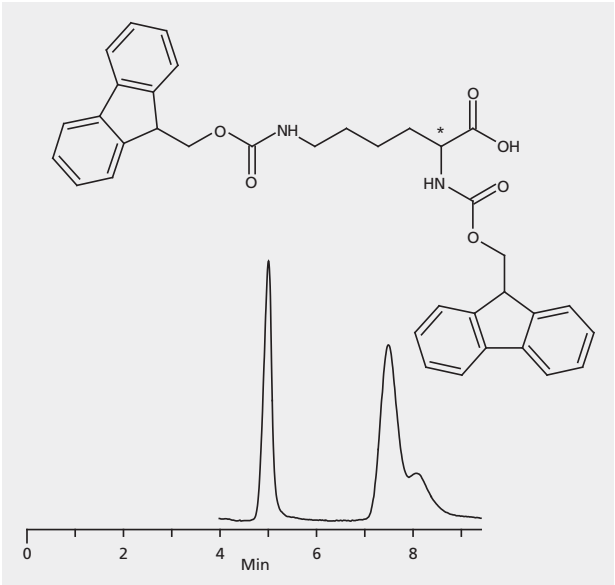
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004564



SUPELCO®
Solutions within.™

HPLC Analysis of FMOC-Lysine Enantiomers on Astec® CHIROBIOTIC® R

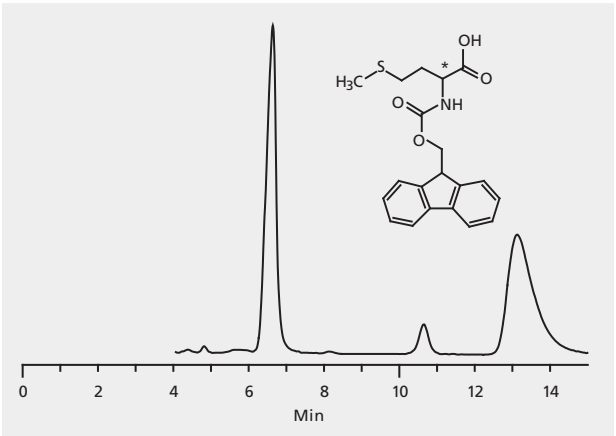
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004679



SUPELCO
Solutions within.™

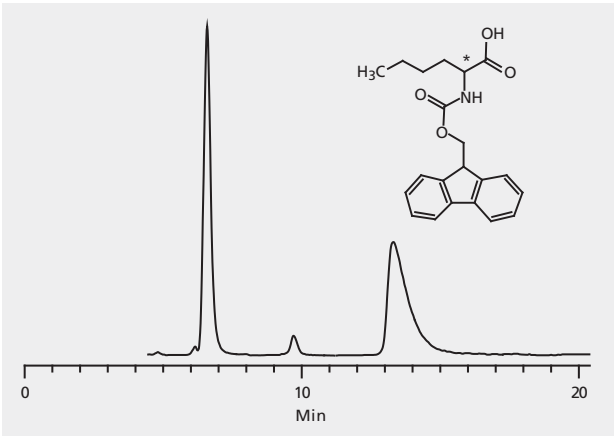
HPLC Analysis of FMOC-Methionine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004566



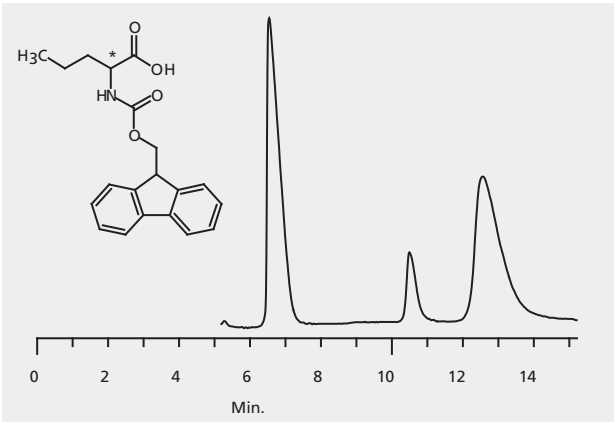
HPLC Analysis of FMOC-Norleucine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004567



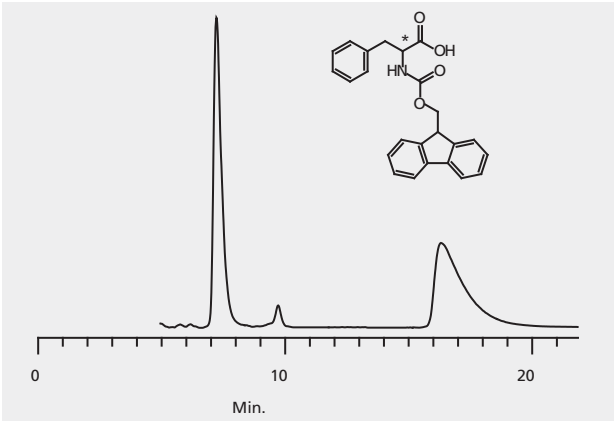
HPLC Analysis of FMOC-Norvaline Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 280 nm
injection . . . . . 0.5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004568



HPLC Analysis of FMOC-Phenylalanine Enantiomers on Astec® CHIROBIOTIC® T

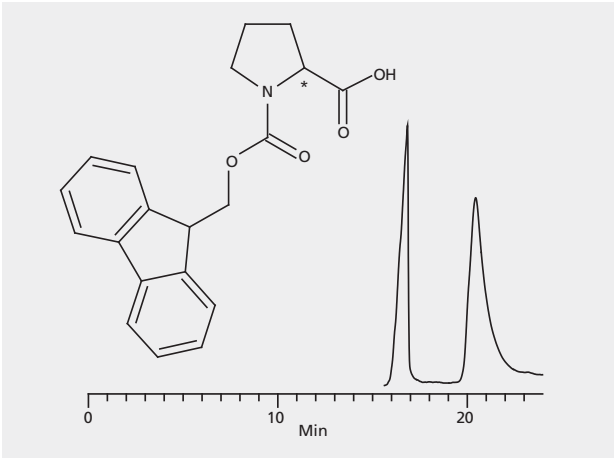
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004569



SUPELCO®
Solutions within.™

HPLC Analysis of FMOC-Proline Enantiomers on Astec® CYCLOBOND® I 2000 SN

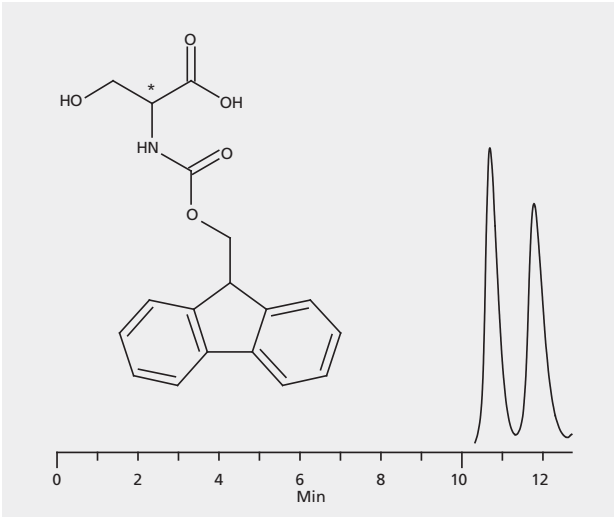
column . . CYCLOBOND I 2000 SN, 25 cm x 4.6 mm I.D., 5 µm particles (20524AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) ammonium hydroxide; (85:15:0.4:0.1, A:B:C:D)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004710



SUPELCO®
Solutions within.™

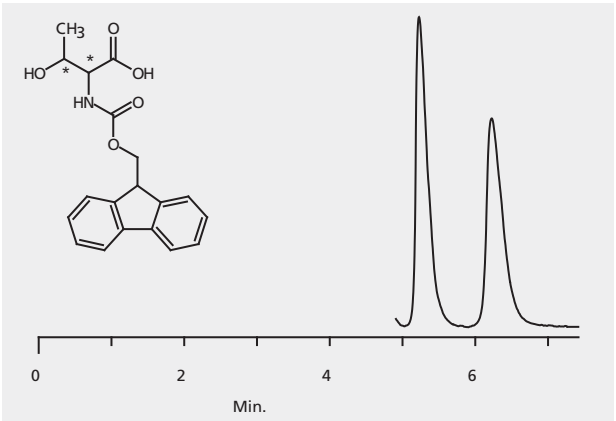
HPLC Analysis of FMOC-Serine Enantiomers on Astec® (R,R) P-CAP™

column . . . . Astec (R,R) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST)
mobile phase . . . . . 20 mM ammonium acetate in: (A) acetonitrile; (B) methanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 0.5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004725



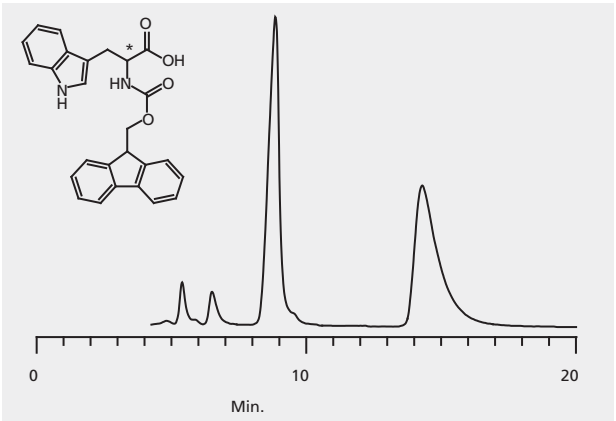
HPLC Analysis of FMOC-Threonine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 0.8 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004571



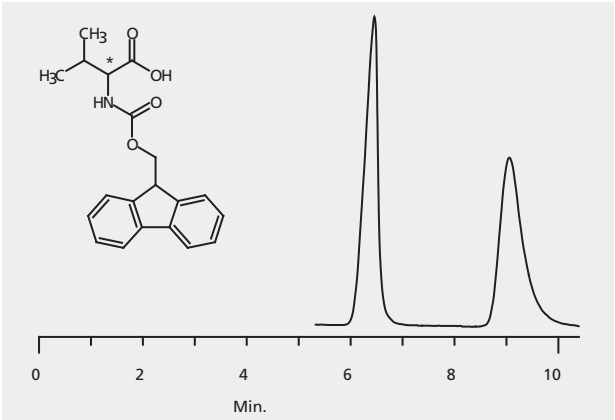
HPLC Analysis of FMOC-Tryptophan Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004570



HPLC Analysis of FMOC-Valine Enantiomers on Astec® CHIROBIOTIC® T

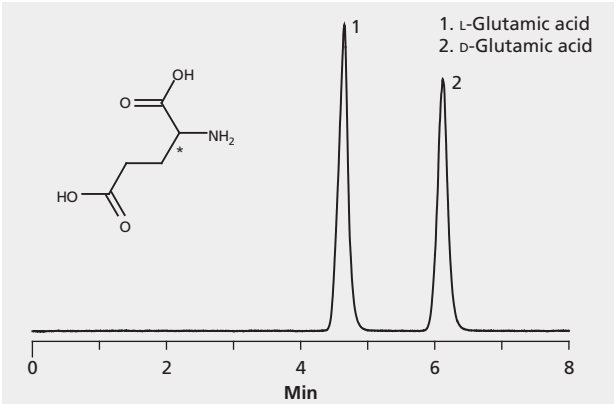
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 260 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004589



SUPELCO® Solutions within.™

HPLC Analysis of Glutamic Acid Enantiomers on Astec® CHIROBIOTIC® T (23 °C)

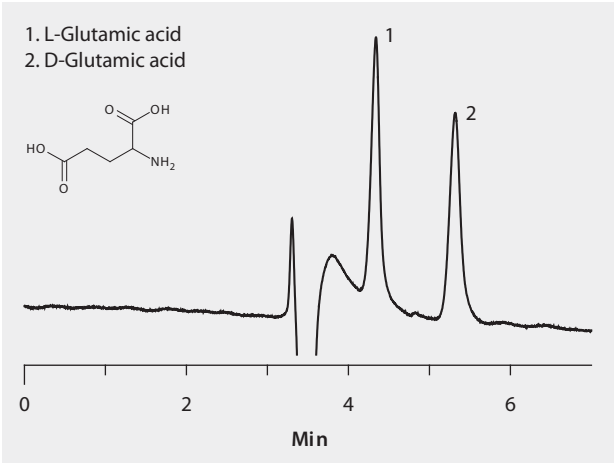
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (20:80:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004496



SUPELCO® Solutions within.™

HPLC Analysis of Glutamic Acid Enantiomers on Astec® CHIROBIOTIC® T (25 °C)

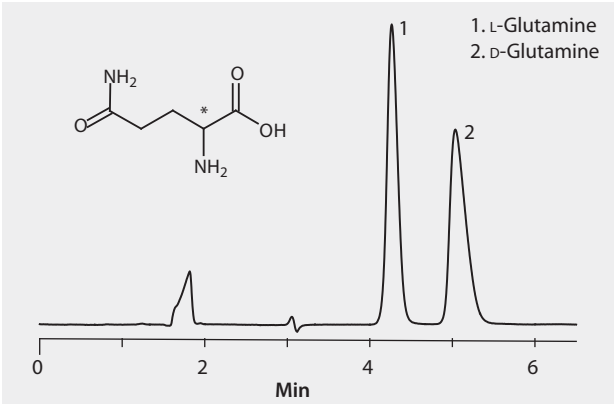
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005335



SUPELCO®
Solutions within.™

HPLC Analysis of Glutamine Enantiomers on Astec® CHIROBIOTIC® T (23 °C)

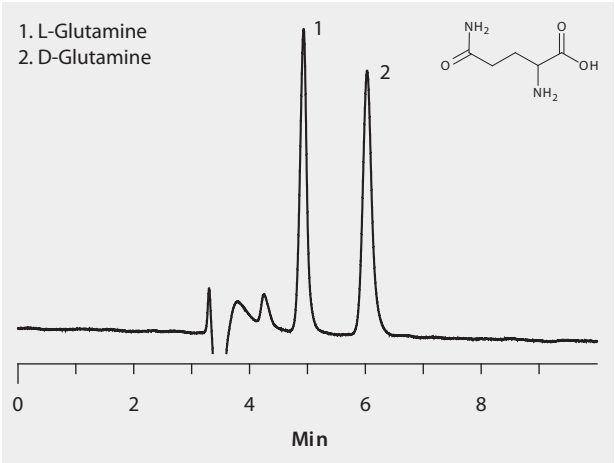
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample gas . . . . . 1 mg/mL in methanol
Application No. G004497



SUPELCO® Solutions within.™

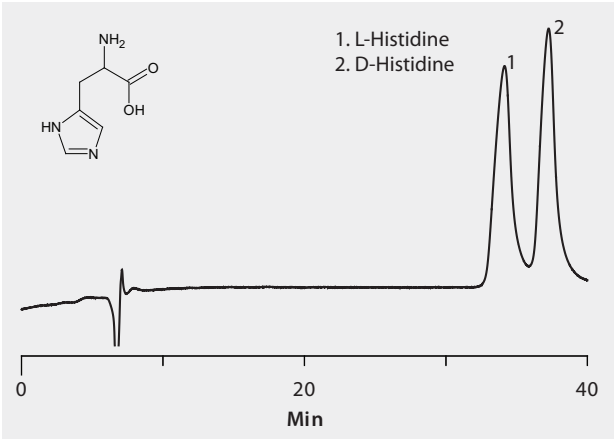
HPLC Analysis of Glutamine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005336



HPLC Analysis of Histidine Enantiomers on Astec® CHIROBIOTIC® T (15 °C)

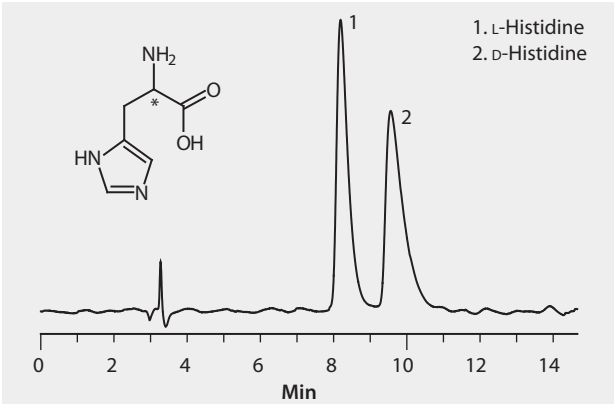
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.006, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 15 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 200 µg /mL in 50:50 water:methanol
Application No. G005337



SUPELCO® Solutions within.™

HPLC Analysis of Histidine Enantiomers on Astec® CHIROBIOTIC® T (23 °C)

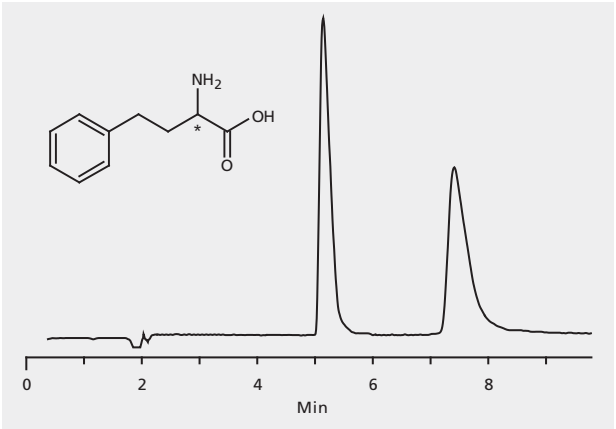
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 160 mM sodium phosphate, pH 4.5; (B) ethanol; (40:60, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004498



SUPELCO® Solutions within.™

HPLC Analysis of Homophenylalanine Enantiomers on Astec® CHIROBIOTIC® T

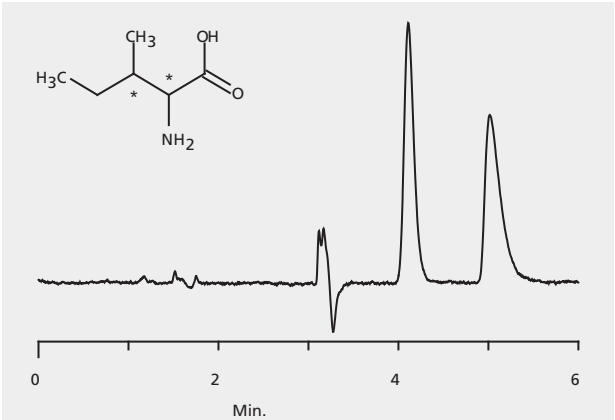
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 5 µL
sample . . . . . 10 mg/mL in methanol
Application No. G004533



SUPELCO®
Solutions within.™

HPLC Analysis of Isoleucine Enantiomers on Astec® CHIROBIOTIC® T (23 °C)

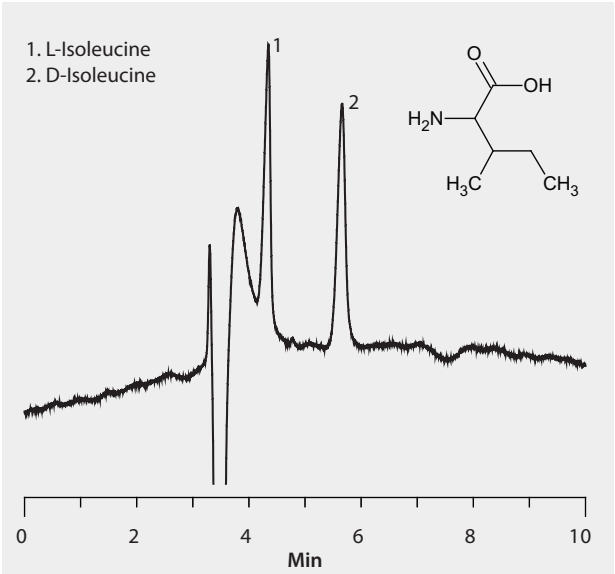
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004500



SUPELCO® Solutions within.™

HPLC Analysis of Isoleucine Enantiomers on Astec® CHIROBIOTIC® T (25 °C)

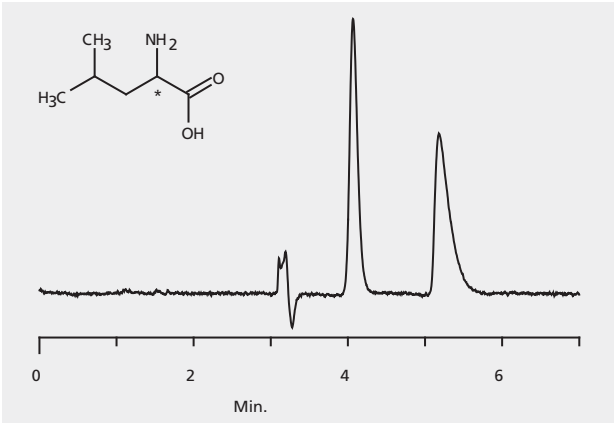
column . . Astec CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005338



SUPELCO® Solutions within.™

HPLC Analysis of Leucine Enantiomers on Astec® CHIROBIOTIC® T (23 °C)

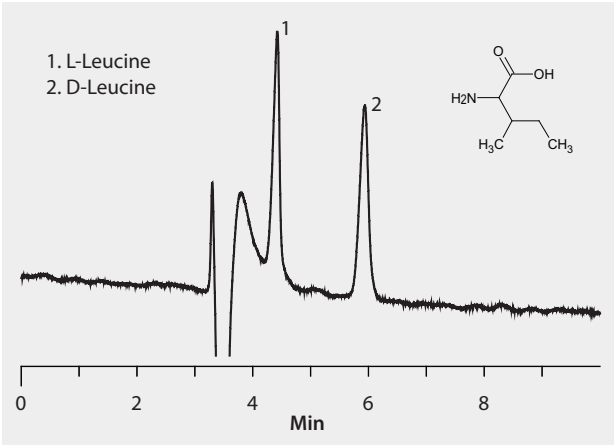
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004501



SUPELCO® Solutions within.™

HPLC Analysis of Leucine Enantiomers on Astec® CHIROBIOTIC® T (25 °C)

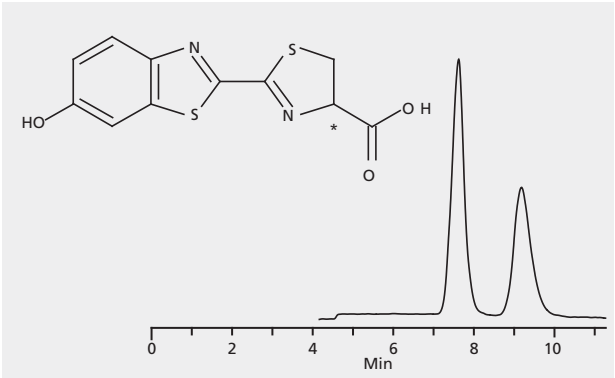
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005339



SUPELCO® Solutions within.™

HPLC Analysis of Luciferin Enantiomers on Astec® CHIROBIOTIC® V

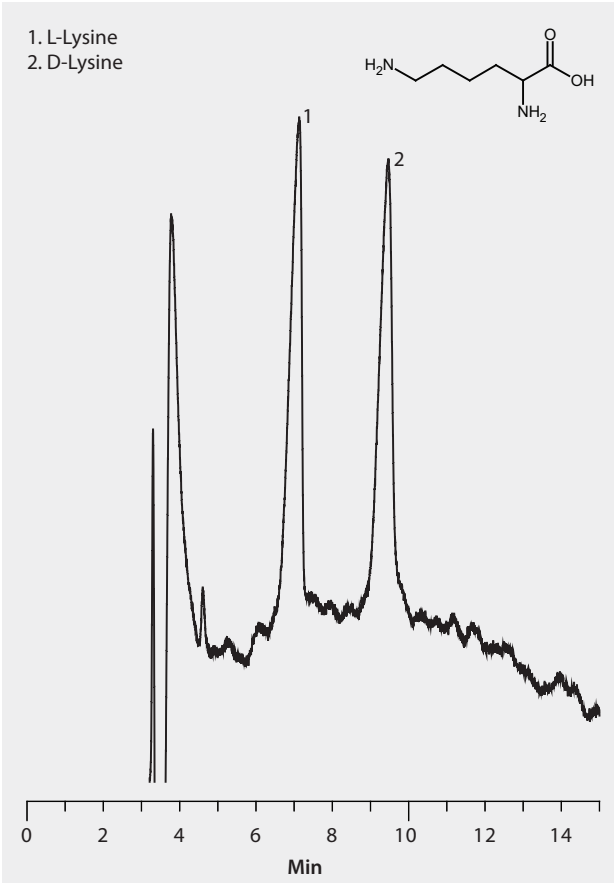
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM ammonium nitrate, pH 5.5; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 254 nm
injection . . . . . 6 µL
sample . . . . . 0.5 mg/mL in methanol
Application No. G004641



SUPELCO® Solutions within.™

HPLC Analysis of Lysine Enantiomers on Astec® CHIROBIOTIC® T

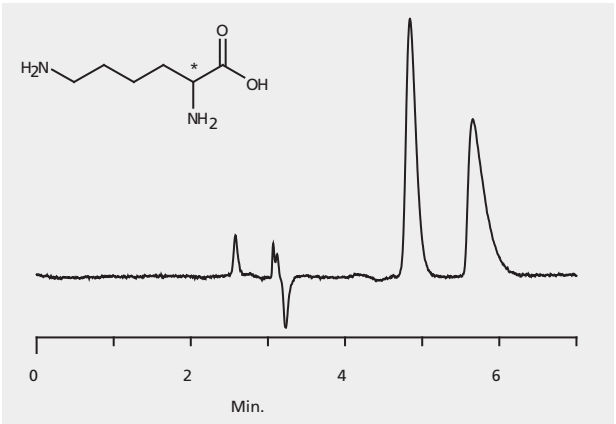
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005340



SUPELCO® Solutions within.™

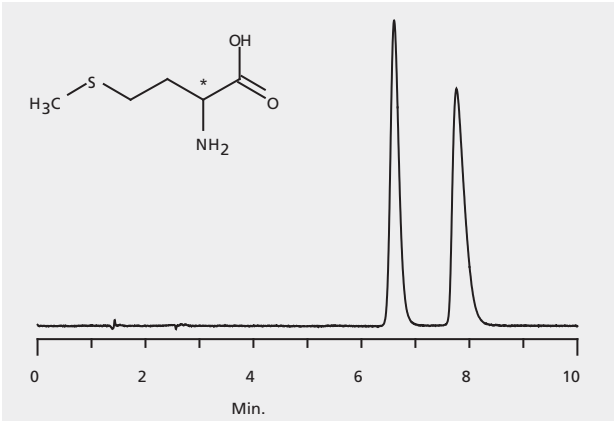
HPLC Analysis of Lysine Enantiomers on Astec® CHIROBIOTIC® T (Ethanol Mobile Phase)

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 100 mM sodium phosphate, pH 4.5; (B) ethanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004502



HPLC Analysis of Methionine Enantiomers on Astec® CHIROBIOTIC® T (No Additives)

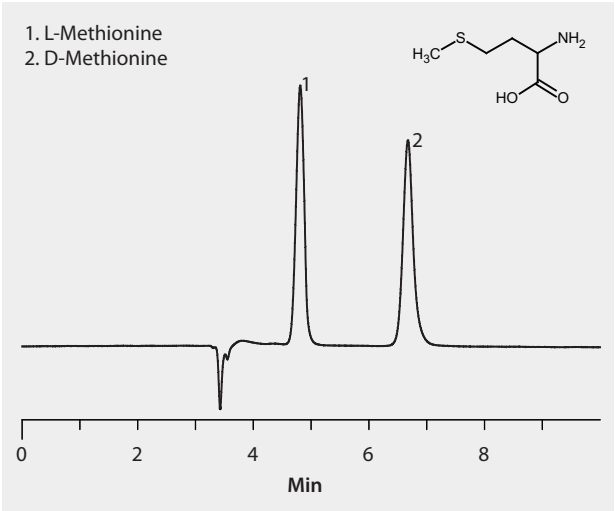
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (30:70, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004503



SUPELCO® Solutions within.™

HPLC Analysis of Methionine Enantiomers on Astec® CHIROBIOTIC® T

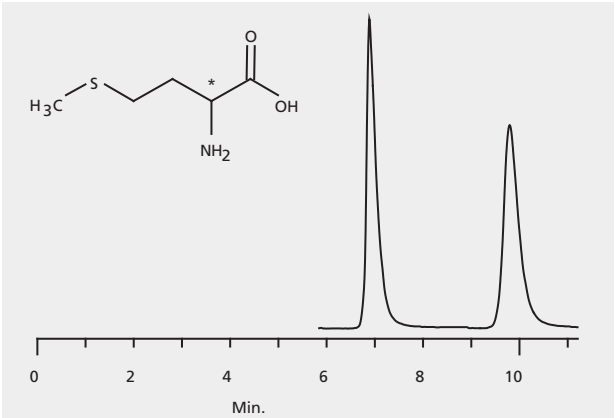
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005341



SUPELCO® Solutions within.™

HPLC Analysis of Methionine Enantiomers on Astec® CHIROBIOTIC® T2

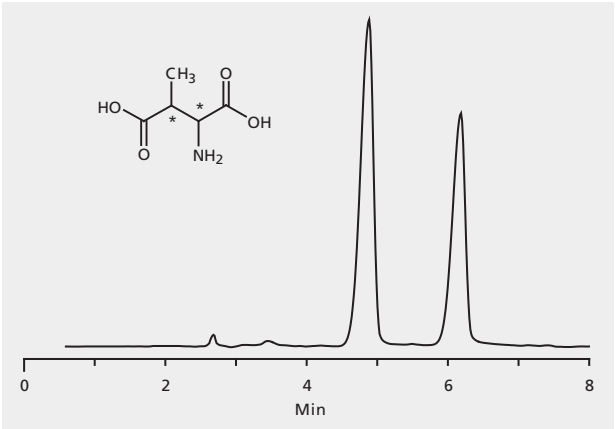
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (25:75, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004598



SUPELCO
Solutions within.™

HPLC Analysis of 3-Methylaspartic Acid Enantiomers on Astec® CHIROBIOTIC® T

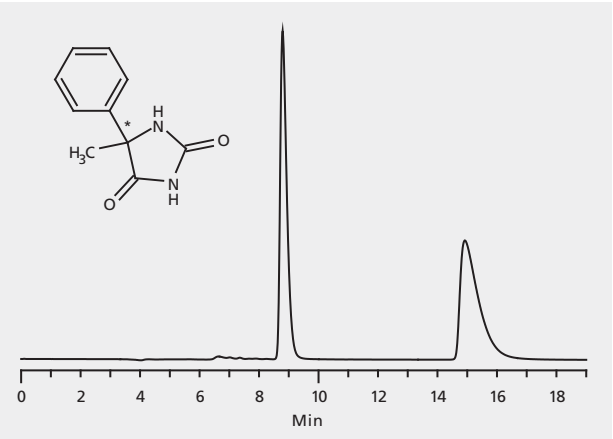
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) methanol; (B) water; (C) formic acid; (80:20:0.02, A:B:C)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . ELSD
injection . . . . . 4 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004553



SUPELCO®
Solutions within.™

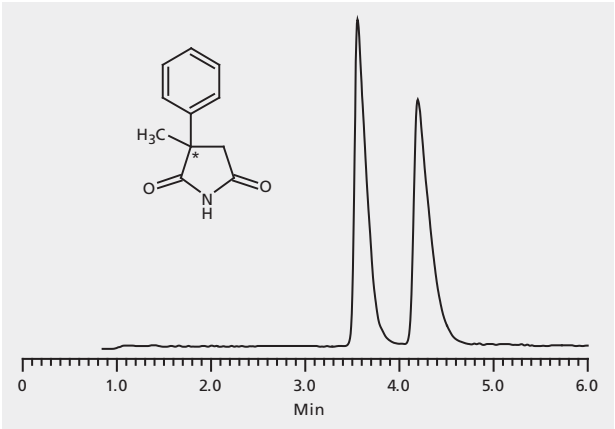
HPLC Analysis of 5-Methyl-5-Phenylhydantoin Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . methanol
flow rate . . . . . 0.48 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004525



HPLC Analysis of α-Methyl-α-Phenylsuccinimide Enantiomers on Astec® CHIROBIOTIC® T

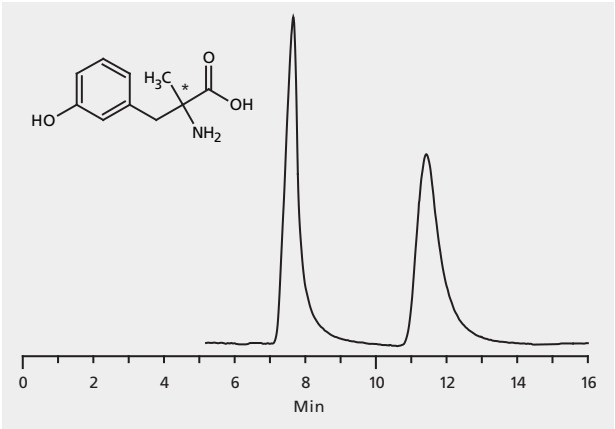
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) ethanol; (B) hexane; (20:80, A:B)
flow rate . . . . . 3 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 210 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004544



SUPELCO
Solutions within.™

HPLC Analysis of α-Methyl-m-Tyrosine Enantiomers on Astec® CHIROBIOTIC® T

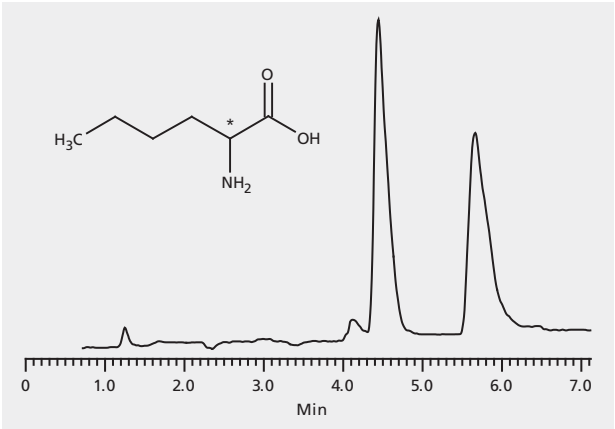
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . methanol
extraction tube . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 1 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004557



SUPELCO® Solutions within.™

HPLC Analysis of Norleucine Enantiomers on Astec® CHIROBIOTIC® T

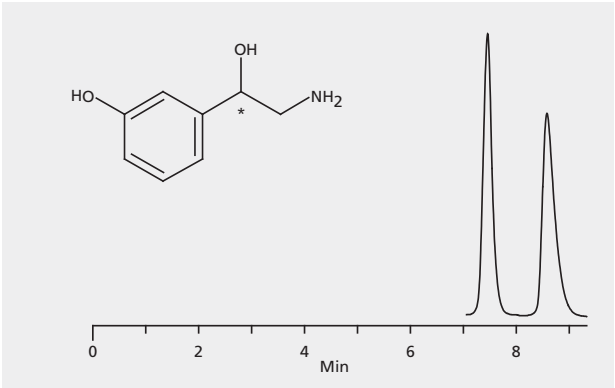
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (80:20, A:B)
flow velocity . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004534



SUPELCO®
Solutions within.™

HPLC Analysis of Norphenylephrine Enantiomers on Astec® CYCLOBOND® I 2000 AC (pH 4.1)

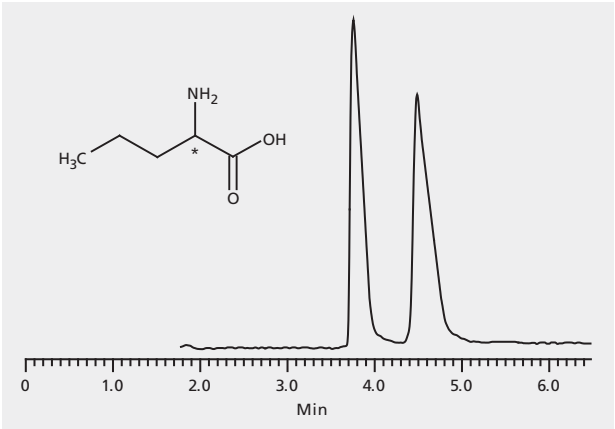
column . . CYCLOBOND I 2000 AC, 25 cm x 4.6 mm I.D., 5 µm particles (20124AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (93:7, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004693



SUPELCO® Solutions within.™

HPLC Analysis of Norvaline Enantiomers on Astec® CHIROBIOTIC® T

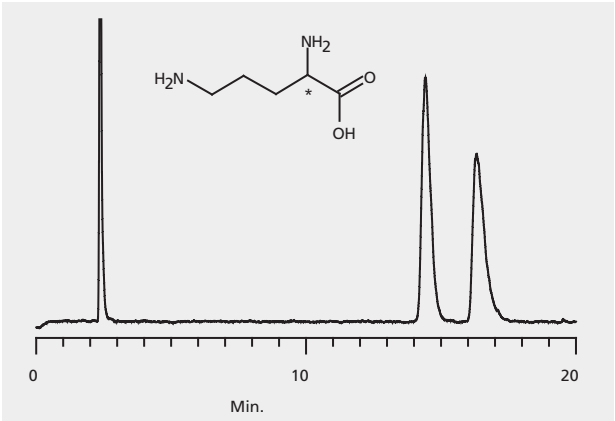
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004535



SUPELCO
Solutions within.™

HPLC Analysis of Ornithine Enantiomers on Astec® CHIROBIOTIC® T

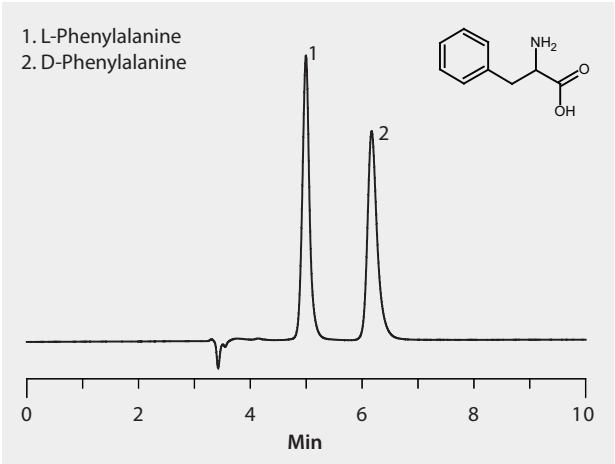
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004506



SUPELCO
Solutions within.™

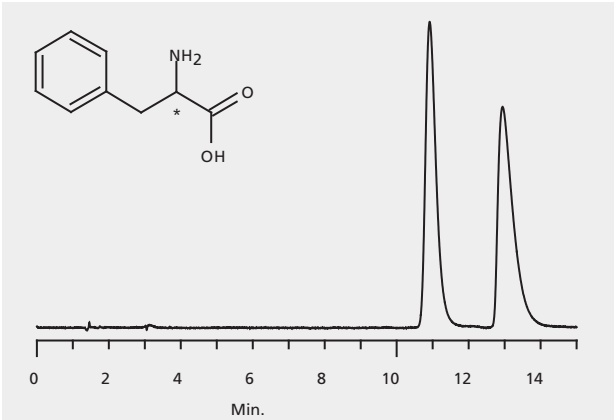
HPLC Analysis of Phenylalanine Enantiomers on Astec® CHIROBIOTIC® T (Formic Acid Mobile Phase Additive)

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005342



HPLC Analysis of Phenylalanine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (20:80, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004508

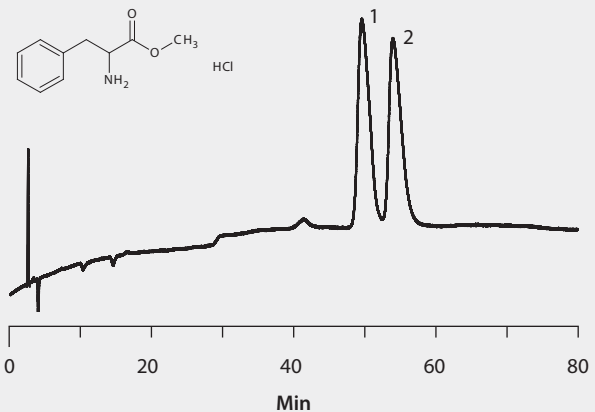


SUPELCO® Solutions within.™

HPLC Analysis of Phenylalanine Methyl Ester Enantiomers on LARIHC™ CF6-P

column . . LARIHC CF6-P, 25 cm x 4.6 mm I.D., 5 µm particles (AZYP Part No.L1001, available from Supelco/Sigma-Aldrich as a custom item)
mobile phase . . . . . (A) methanol: (B) acetonitrile: (C) acetic acid: (D) triethylamine, (70:30:0.3:0.2. A:B:C:D)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . Phenylalanine methyl ester, 0.3 mg/mL in ethanol
Application No. G005259

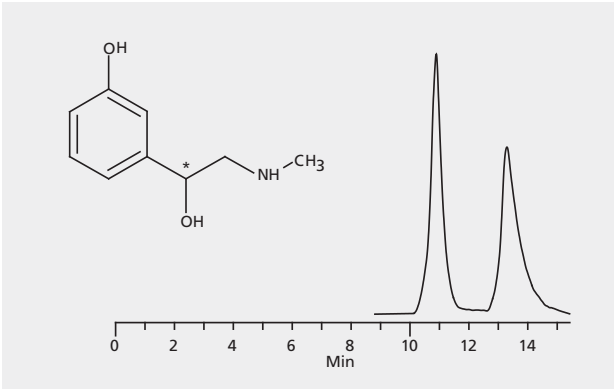
1. Phenylalanine methyl ester enantiomer
2. Phenylalanine methyl ester enantiomer



Ref: 1. Ping Sun, Chunlei Wang, Zachary S. Breitbach, Ying Zhang, and Daniel W. Armstrong, Development of New HPLC Chiral Stationary Phases Based on Native and Derivatized Cyclofructans *Anal. Chem.* **81**, 10215 (2009)
2. Ping Sun and Daniel W. Armstrong, Effective enantiomeric separations of racemic primary amines by the isopropyl carbamate-cyclofructan6 chiral stationary phase *J. Chromatogr. A.* **1217**, 4904 (2010)

HPLC Analysis of Phenylephrine Enantiomers on Astec® CYCLOBOND® I 2000 AC

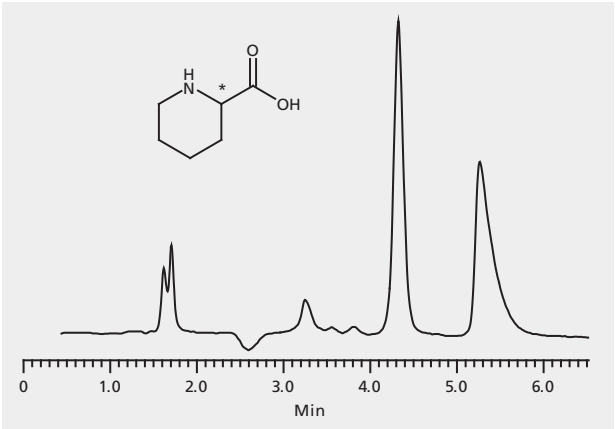
column . . CYCLOBOND I 2000 AC, 25 cm x 4.6 mm I.D., 5 µm particles (20124AST)
mobile phase . . (A) 0.5% w/v sodium acetate, pH 5.5; (B) methanol; (90:10, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004694



SUPELCO
Solutions within.™

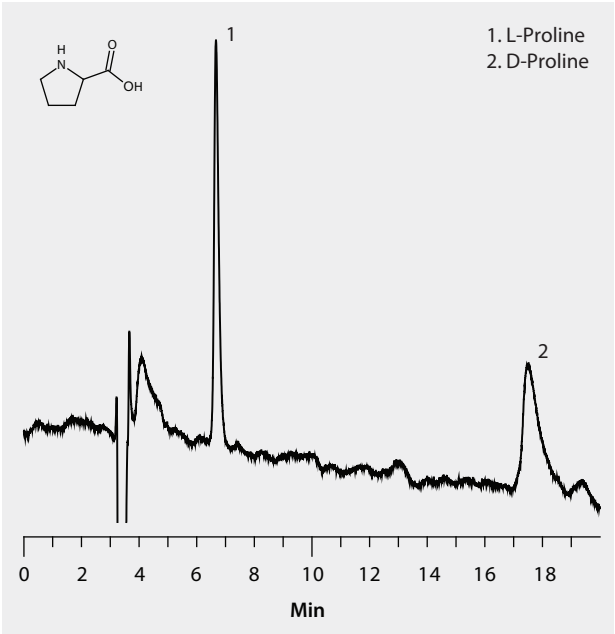
HPLC Analysis of Pipecolic Acid Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004554



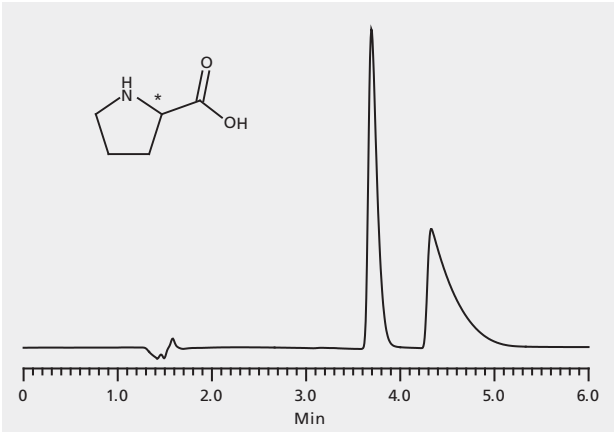
HPLC Analysis of Proline Enantiomers on Astec® CHIROBIOTIC® T (Formic Acid Mobile Phase Additive)

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (40:60:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 200 µg /mL in 50:50 water:methanol
Application No. G005343



HPLC Analysis of Proline Enantiomers on Astec® CHIROBIOTIC® T

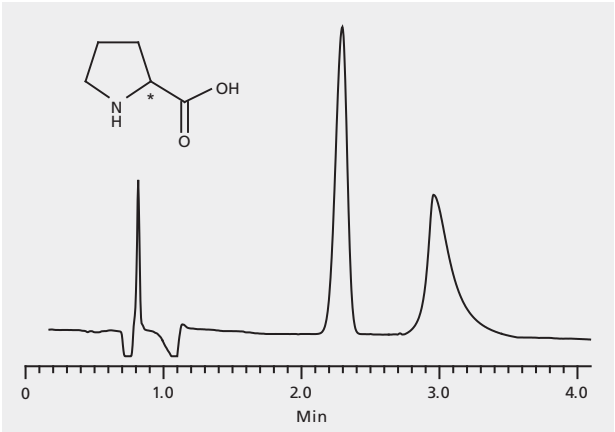
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
detector . . . . . UV, 210 nm
injection . . . . . 20 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004526



SUPELCO®
Solutions within.™

HPLC Analysis of Proline Enantiomers on Astec® CHIROBIOTIC® T, Fast Analysis

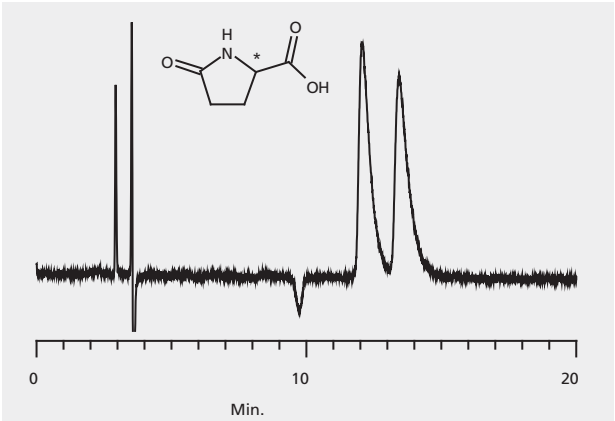
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . water
flow rate . . . . . 0.65 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004527



SUPELCO®
Solutions within.™

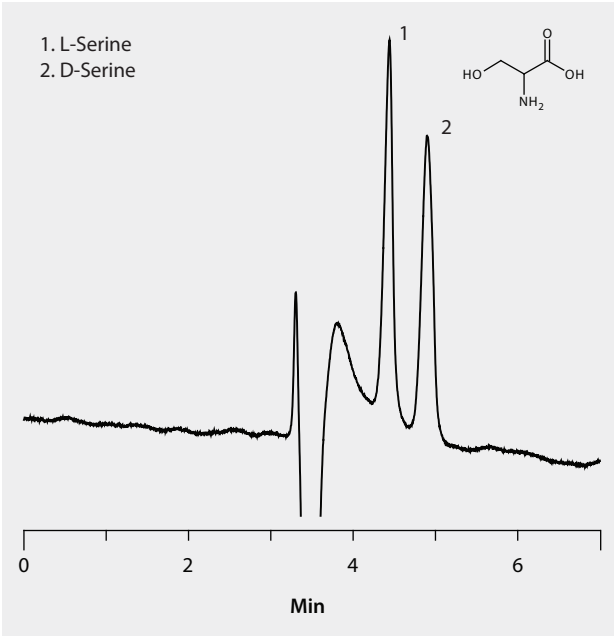
HPLC Analysis of Pyroglutamic Acid Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) triethylamine; (54.5:45:0.3:0.2, A:B:C:D)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004511



HPLC Analysis of Serine Enantiomers on Astec® CHIROBIOTIC® T (Formic Acid Mobile Phase Additive)

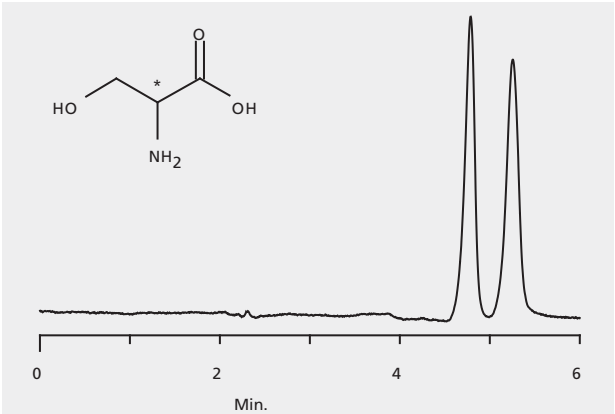
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005344



SUPELCO
Solutions within.™

HPLC Analysis of Serine Enantiomers on Astec® CHIROBIOTIC® T

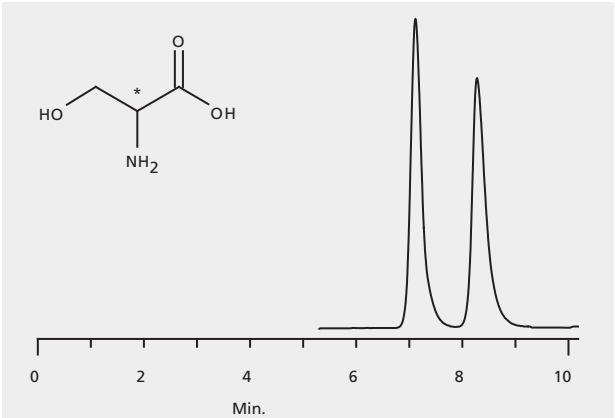
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004513



SUPELCO®
Solutions within.™

HPLC Analysis of Serine Enantiomers on Astec® CHIROBIOTIC® TAG

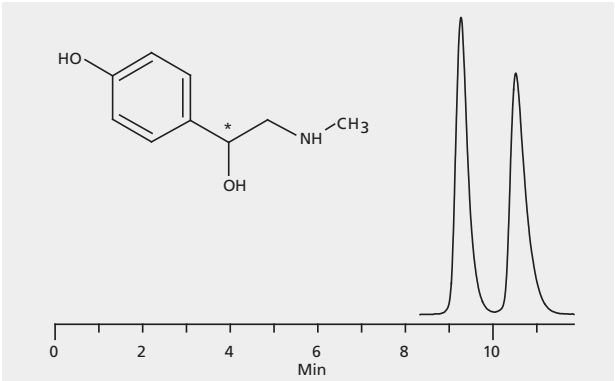
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 5 µL
sample . . . . . 10 mg/mL in methanol
Application No. G004614



SUPELCO® Solutions within.™

HPLC Analysis of Synephrine Enantiomers on Astec® CYCLOBOND® I 2000 AC

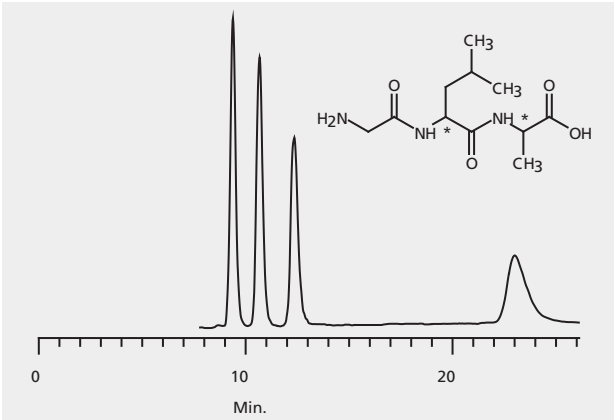
column . . CYCLOBOND I 2000 AC, 25 cm x 4.6 mm I.D., 5 µm particles (20124AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (95:5, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 10 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004695



SUPELCO® Solutions within.™

HPLC Analysis of the Peptide Glycine-Leucine-Alanine Enantiomers on Astec® CHIROBIOTIC® TAG

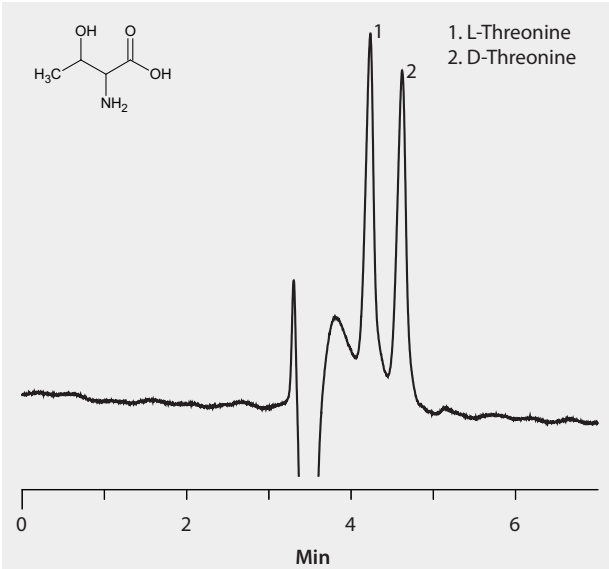
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . (A) 5 mM ammonium acetate, pH 4.1; (B) acetonitrile; (35:65, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004617



SUPELCO
Solutions within.™

HPLC Analysis of Threonine Enantiomers on Astec® CHIROBIOTIC® T (Formic Acid Mobile Phase Additive)

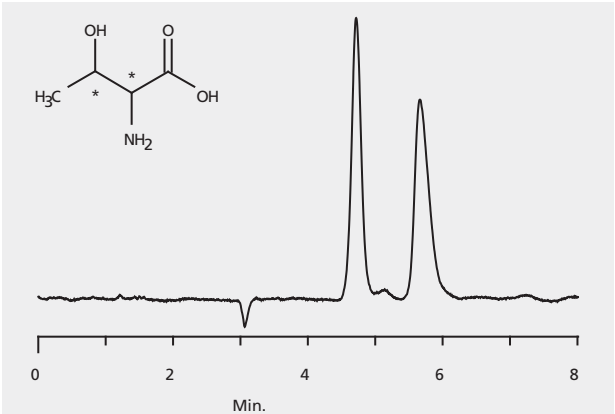
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A); water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005345



SUPELCO
Solutions within.™

HPLC Analysis of Threonine Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (30:70, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004517

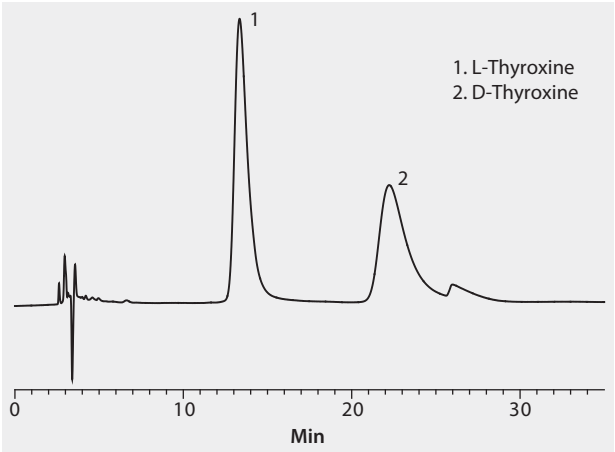


SUPELCO®
Solutions within.™

HPLC Analysis of Thyroxine Enantiomers on Astec® CHIROBIOTIC® TAG

Baseline resolution of the chiral enantiomers of DL-Thyroxine is achieved by polar ionic mode on the Astec CHIROBIOTIC TAG with the use of an LC/MS-compatible mobile phase.

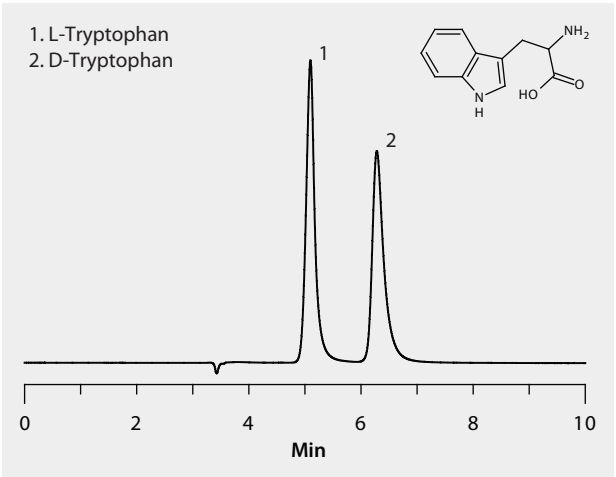
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . 1% ammonium formate in methanol
flow rate . . . . . 1 mL/min
pressure . . . . . 826 psi (57 bar)
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 10 µL
sample . . . . . each enantiomer 0.1 mg/L in methanol
Application No. G005515



SUPELCO® Solutions within.™

HPLC Analysis of Tryptophan Enantiomers on Astec® CHIROBIOTIC® T (Formic Acid Mobile Phase Additive)

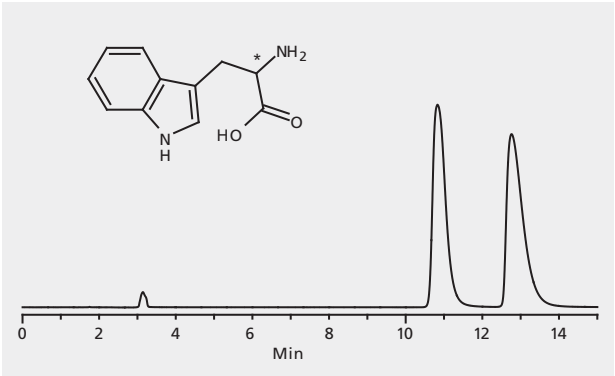
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005346



SUPELCO® Solutions within.™

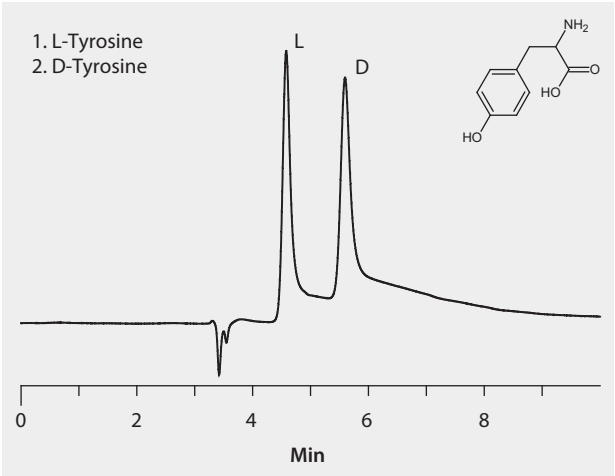
HPLC Analysis of Tryptophan Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (20:80, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004521



HPLC Analysis of Tyrosine Enantiomers on Astec® CHIROBIOTIC® T

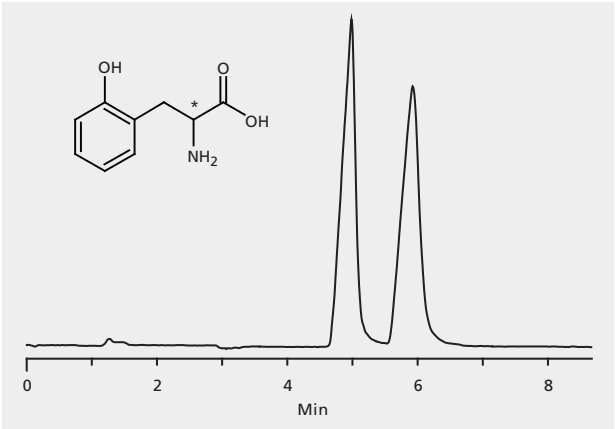
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005347



SUPELCO® Solutions within.™

HPLC Analysis of o-Tyrosine Enantiomers on Astec® CHIROBIOTIC® T

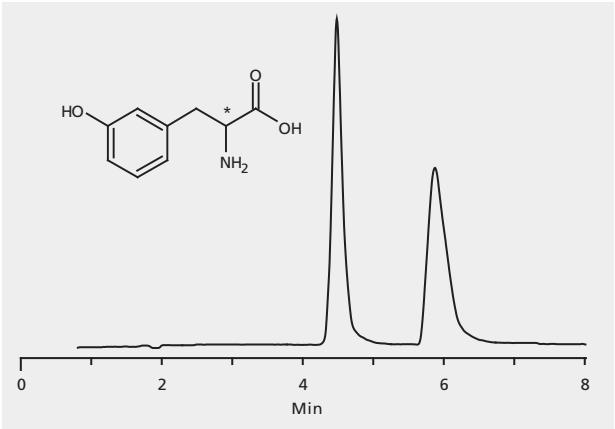
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 24 °C
detector . . . . . UV, 210 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004537



SUPELCO® Solutions within.™

HPLC Analysis of m-Tyrosine Enantiomers on Astec® CHIROBIOTIC® T

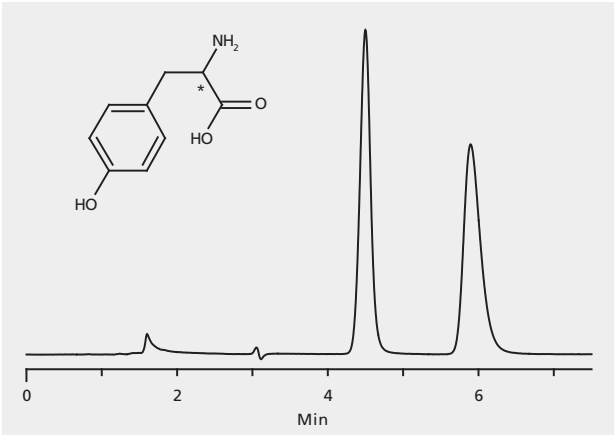
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 210 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004536



SUPELCO
Solutions within.™

HPLC Analysis of p-Tyrosine Enantiomers on Astec® CHIROBIOTIC® T

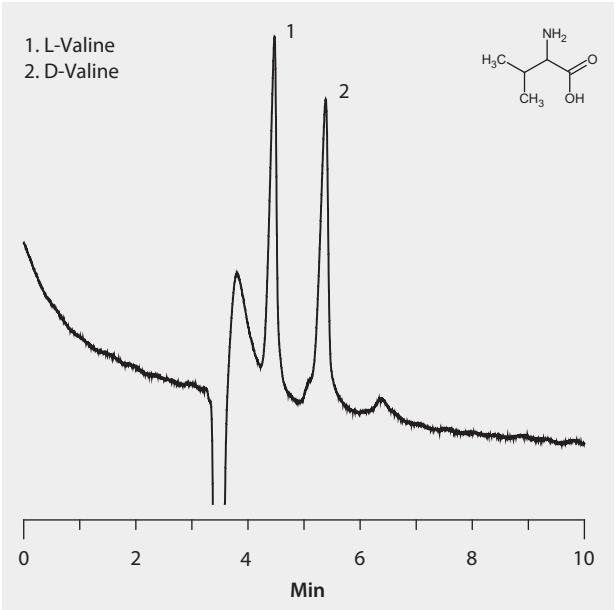
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004522



SUPELCO
Solutions within.™

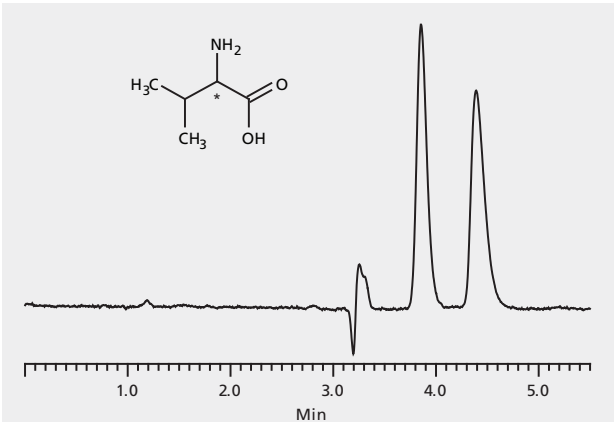
HPLC Analysis of Valine Enantiomers on Astec® CHIROBIOTIC® T (Formic Acid Mobile Phase Additive)

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) methanol; (C) formic acid; (30:70:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 300 µg /mL in 30:70 water:methanol
Application No. G005348



HPLC Analysis of Valine Enantiomers on Astec® CHIROBIOTIC® T

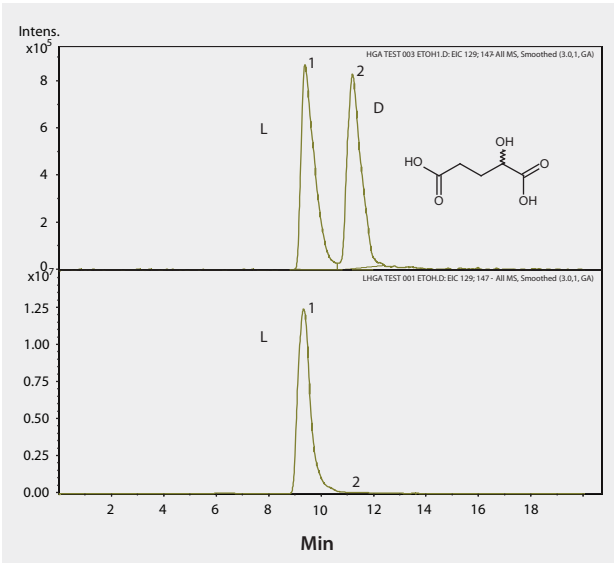
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004523



LC-MS/MS Analysis of 2-Hydroxyglutaric Acid Enantiomers on Astec® CHIROBIOTIC® R

Chiral 2-hydroxyglutarates (2-OHG) are important molecular signatures of both healthy and diseased biological cells, their specific biochemical pathways and inborn errors of metabolism. The chiral differentiation and quantification of D-2-OHG (R(-)-2-OHG) and L-2-OHG (S(+)-2-OHG) is key for characterizing neurometabolic disorders like the 2-hydroxyglutaric acidurias that cause neurological impairment early in life. The ability to distinguish and quantify the enantiomers of 2-OHG is therefore important to be able to track its disposition throughout the metabolic pathway of normal vs. mutated cells. We show here a rapid and sensitive method to separate and measure D-2-OHG and L-2-OHG using LC-MS/MS detection. An Astec® CHIROBIOTIC R (ristocetin chiral selector) column was run under polar ionic mobile phase conditions. Using tandem MS eliminated two fundamental analytical challenges with these compounds: the lack of a UV-absorbing chromophore in the 2-OHG molecule, and the abundance of competing low molecular weight acids in urine. The upper panel in the chromatogram shows the separation of D-2-OHG and L-2-OHG obtained during method development. The lower panel shows the pure L-2-hydroxyglutaric acid. Besides providing the necessary enantioselectivity, Astec® CHIROBIOTIC columns have the advantage of operating in aqueous and polar organic mobile phases that are amenable to polar drugs and metabolites. Their ionic interactions promote analyte ionization which enhances sensitivity in ESI detection. In addition to the CHIROBIOTIC columns, Sigma-Aldrich also provides the high purity mobile phase agents, racemic and pure chiral 2-OHG enantiomers and other compounds in the isocitrate dehydrogenase (IDH) pathway.

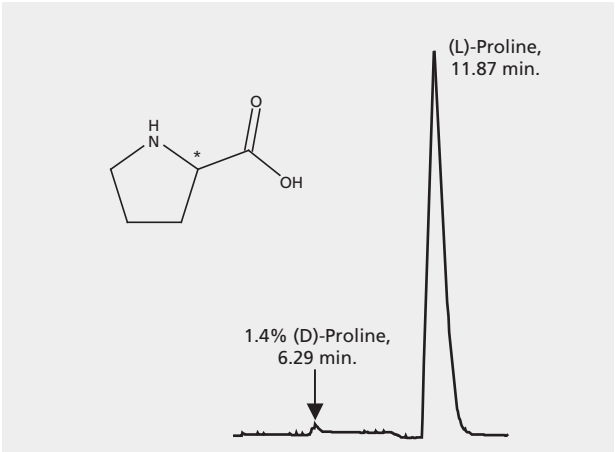
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . (A) ethanol:methanol (3:1, v:v); (B) 0.1% v/v TEA in water, adjusted to pH 4.5 with acetic acid; 75:25 (A:B)
flow rate . . . . . 0.4 mL/min
column temp. . . . . 20 °C
detector . . . . . MS, ESI(-), 100-1000 m/z
injection . . . . . 5 µL
sample . . . . . each enantiomer, 100 µg/mL in water
Application No. G005848



SUPELCO
Solutions within.™

Trace HPLC Analysis of Proline Enantiomers on Astec® CLC-L

column . . . . . Astec CLC-L, 15 cm x 4.6 mm I.D., 5 µm particles (53123AST)
mobile phase . . . . . 5 mM copper sulfate
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in water
Application No. G004662

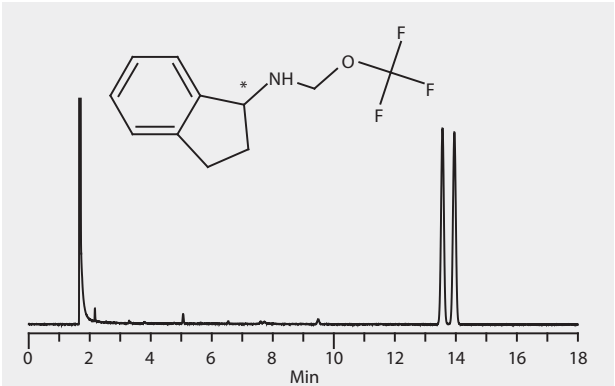


SUPELCO®
Solutions within.™

Pharmaceutical (Small Molecule)

GC Analysis of 1-Aminoindan Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DA

column . . . . Astec CHIRALDEX G-DA, 30 m x 0.25 mm I.D., 0.12 µm (72033AST)
oven . . . . . 150 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
sample . . . . . peaks 1 & 2: 1-aminoindan enantiomers (N-TFA derivatives)
Application No. G005144

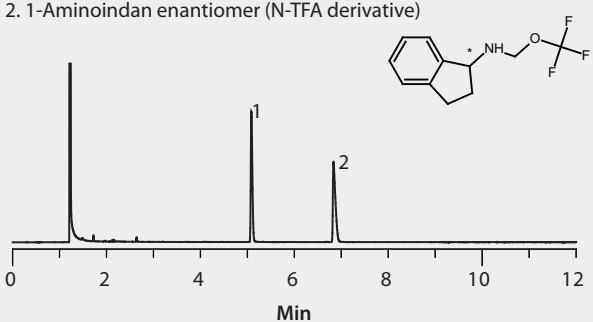


SUPELCO® Solutions within.™

GC Analysis of 1-Aminoindan Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DP

column . . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm
oven . . . . . 160 °C
inj. temp. . . . . 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: 1-aminoindan enantiomers (N-TFA derivatives)
Application No. G005033

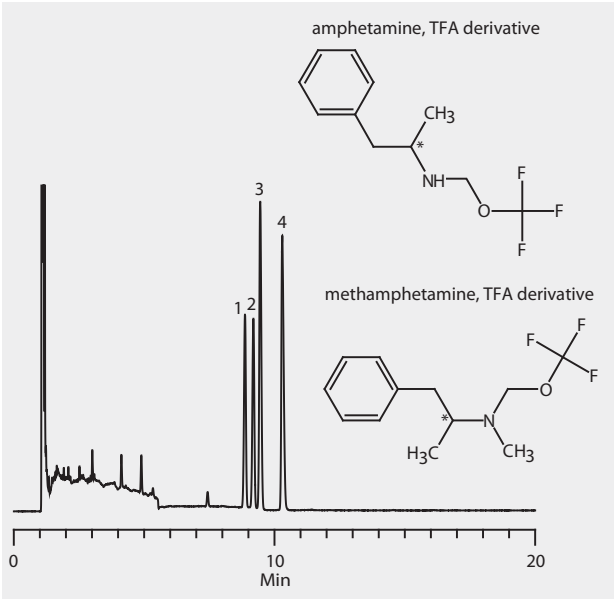
1. 1-Aminoindan enantiomer (N-TFA derivative)
2. 1-Aminoindan enantiomer (N-TFA derivative)



GC Analysis of Amphetamine and Methamphetamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-PN

Elution order reversal of amphetamine (d,l) by using CHIRALDEX G-DP, 140°C.

column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 130 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 3 mg/mL each compound in methanol
peak 1: d-methamphetamine
peak 2: l-methamphetamine
peak 3: l-amphetamine
peak 4: d-amphetamine
Application No. G005071

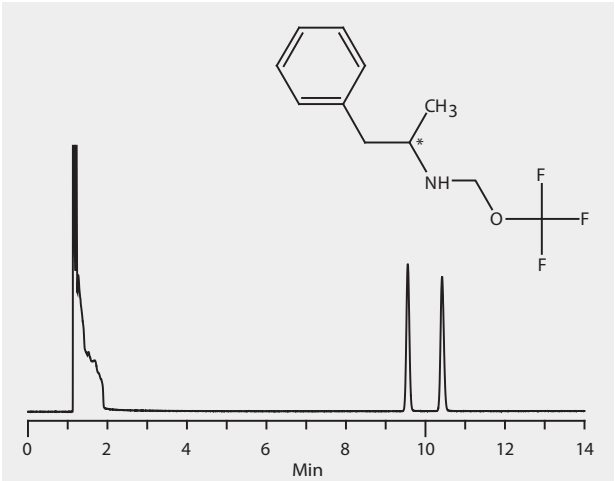


SUPELCO® Solutions within.™

GC Analysis of Amphetamine Enantiomers (N-Trifluoroacetyl Derivative) on Astec® CHIRALDEX® G-PN

Achieve elution order reversal (d,l) by using CHIRALDEX G-DP column, 140 °C (see G005151).

column . . . . Astec CHIRALDEX G-PN, 30 m x 0.25 mm I.D., 0.12 µm (74033AST)
oven . . . . . 130 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
inj. temp. . . . . 250 °C
liner . . . . . 4 mm I.D., double taper
sample . . . . . peak 1: l-amphetamine (N-TFA)
peak 2: d-amphetamine (N-TFA)
Application No. G005053

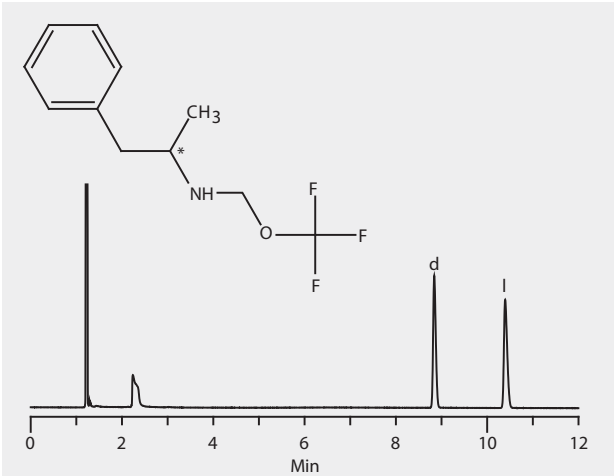


SUPELCO®
Solutions within.™

GC Analysis of Amphetamine Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® G-DP

Elution order reversal (l,d) by using CHIRALDEX G-PN, 130°C (see G005053).

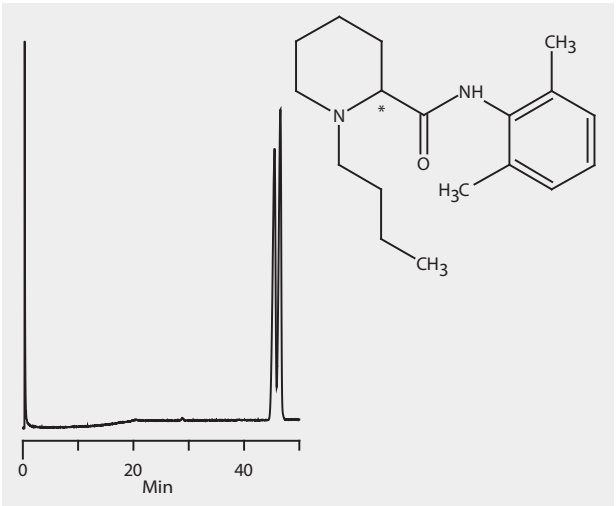
column .... Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven ..... 140 °C
inj. temp. ..... 250 °C
detector ..... FID, 250 °C
carrier gas ..... helium, 2.7 mL/min., constant flow
injection ..... 1 µL, 80:1 split
liner ..... 4 mm I.D., FocusLiner
sample ..... 4 mg/mL each compound in methylene chloride
peak 1: d-amphetamine (N-TFA derivative)
peak 2: l-amphetamine (N-TFA derivative)
Application No. G005151



SUPELCO®
Solutions within.™

GC Analysis of Bupivacaine Enantiomers on Astec® CHIRALDEX® B-PH

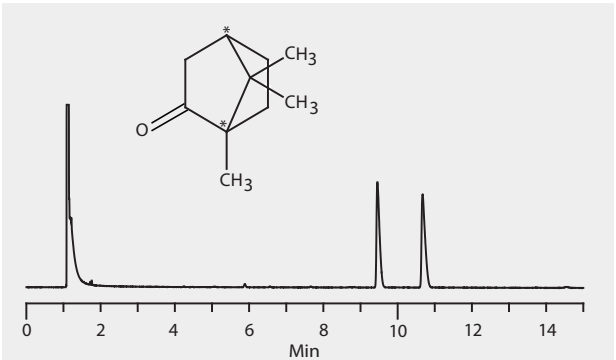
column . . . . . Astec CHIRALDEX B-PH, 10 m x 0.25 mm I.D., 0.12 µm (custom)
gradient . . . . . 130 °C, 2 °C/min to 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 12 psi
sample . . . . . peaks 1 & 2: bupivacaine enantiomers
Application No. G005072



SUPELCO® Solutions within.™

GC Analysis of Camphor Enantiomers on Astec® CHIRALDEX® G-DP

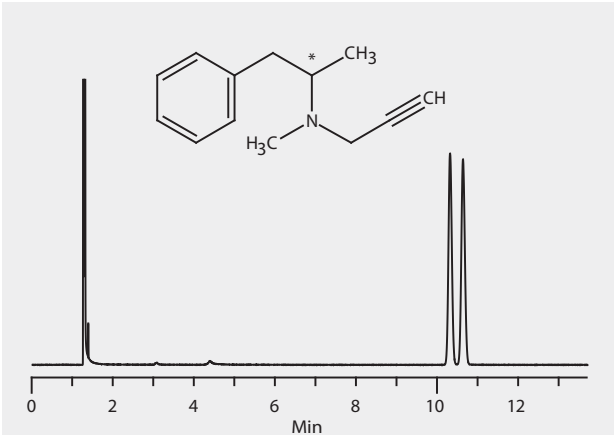
column . . . . Astec CHIRALDEX G-DP, 30 m x 0.25 mm I.D., 0.12 µm (78033AST)
oven . . . . . 100 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peaks 1 & 2: camphor enantiomers
Application No. G005058



SUPELCO® Solutions within.™

GC Analysis of Deprenyl (Selegiline) Enantiomers on Astec® CHIRALDEX® B-DM

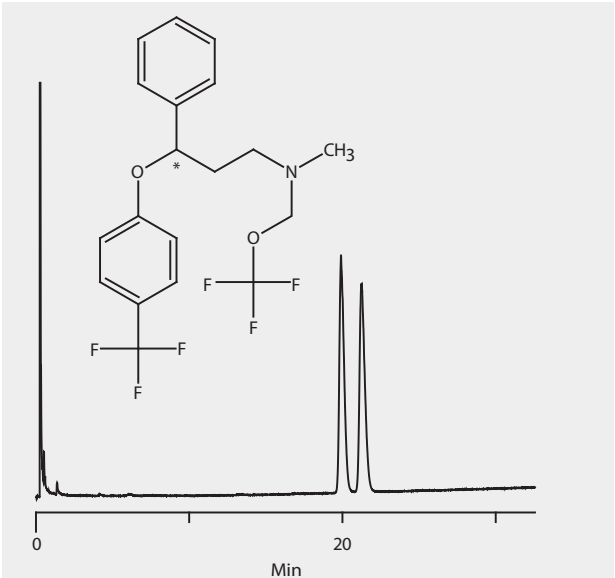
column . . . . Astec CHIRALDEX B-DM, 30 m x 0.25 mm I.D., 0.12 µm (77023AST)
oven . . . . . 130 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 24 psi
sample . . . . . peak 1: R(-)-deprenyl (Selegiline)
peak 2: S(+)-deprenyl
Application No. G005059



SUPELCO
Solutions within.™

GC Analysis of Fluoxetine Enantiomers (N-TFA Derivatives) on Astec® CHIRALDEX® B-DA

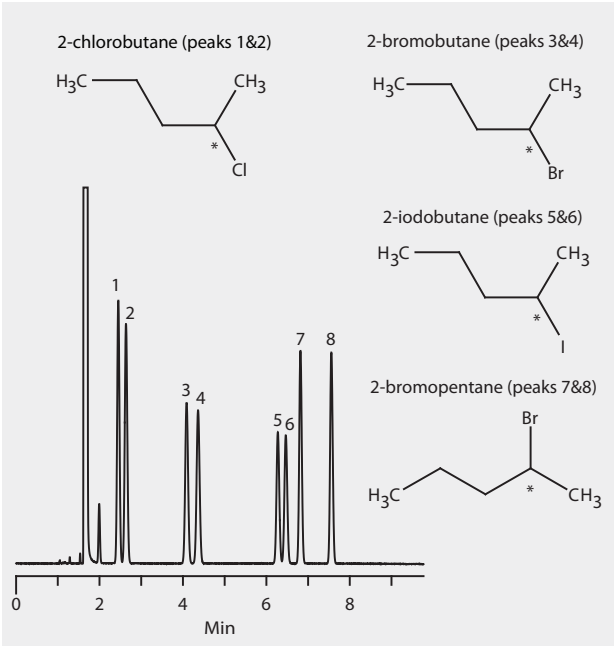
column . . . . Astec CHIRALDEX B-DA, 10 m x 0.25 mm I.D., 0.12 µm (72021AST)
oven . . . . . 175 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 15 psi
inj. temp. . . . . 250 °C
sample . . . . . peaks 1 & 2: fluoxetine enantiomers (N-TFA derivatives)
Application No. G005063



SUPELCO®
Solutions within.™

GC Analysis of 2-Halohydrocarbon Enantiomers on Astec® CHIRALDEX® G-TA

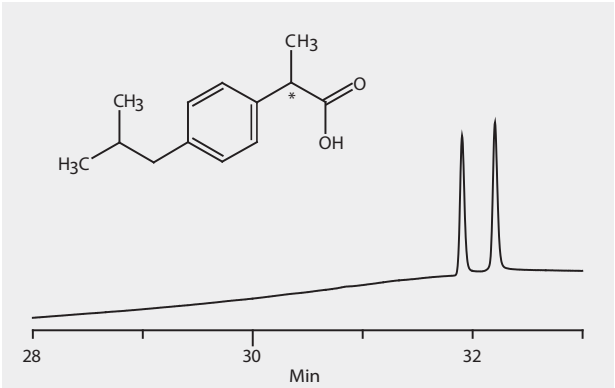
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
gradient . . . . . 30 °C (3 min), 5 °C/min to 70 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2.5 mg/mL of each compound
Application No. G005064



SUPELCO® Solutions within.™

GC Analysis of Ibuprofen Enantiomers (Underivatized) on β-DEX™ 120

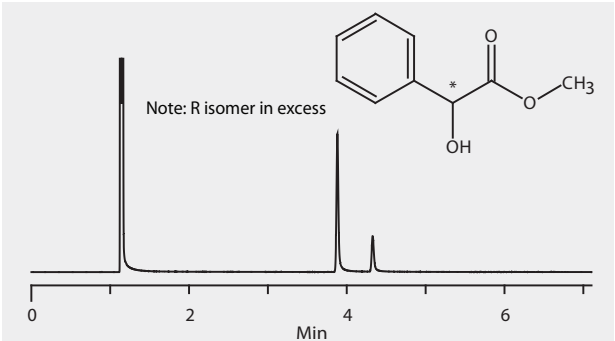
column . . . . . Supelco β-DEX 120, 30 m x 0.25 mm I.D., 0.25 µm (24304)
gradient . . . . . 50 °C (5 min), 5 °C/min to 200 °C (10 min)
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 60 m/sec., constant flow
injection . . . . . 1 µL, 100:1 split
sample . . . . . 2 mg/mL in methanol
peak 1: S(+)-ibuprofen
peak 2: R(-)-ibuprofen
liner . . . . . 4 mm I.D., FocusLiner™
Application No. G005065



SUPELCO
Solutions within.™

GC Analysis of Mandelic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® B-DP

column . . . . Astec CHIRALDEX B-DP, 30 m x 0.25 mm I.D., 0.12 µm (78023AST)
oven . . . . . 140 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
sample . . . . . peak 1: R(-)-methyl mandelate
peak 2: S(+)-methyl mandelate
Application No. G005068

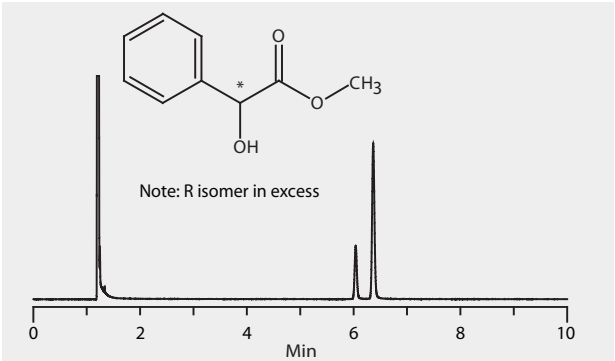


SUPELCO
Solutions within.™

GC Analysis of Mandelic Acid Methyl Ester Enantiomers on Astec® CHIRALDEX® G-TA

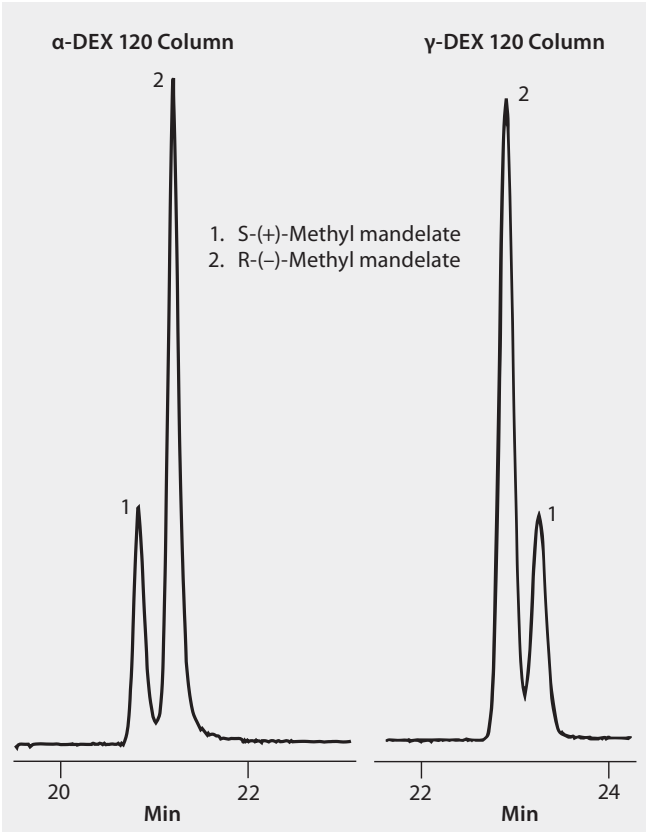
Elution order reversal on CHIRALDEX B-DP.

column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 140 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
inj. temp. . . . . 250 °C
sample . . . . . peak 1: S(+)-methyl mandelate
peak 2: R(-)-methyl mandelate
Application No. G005067



GC Analysis of Mandelic Acid Methyl Ester Enantiomers on α-DEX™ 120 and γ-DEX™ 120

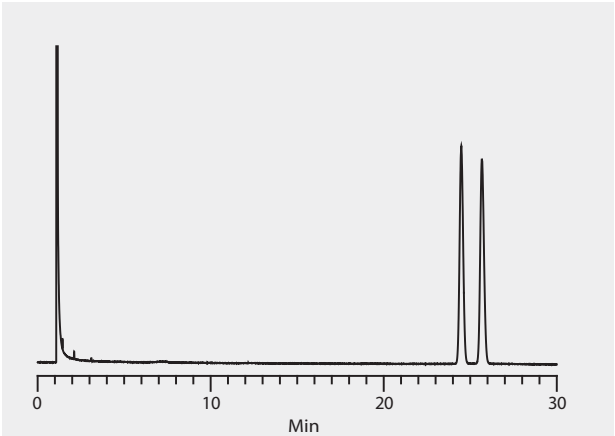
column	α-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24310)
column	γ-DEX 120, 30 m × 0.25 mm I.D., 0.25 µm (24307)
oven	130 °C
inj. temp.	250 °C
detector	FID, 300 °C
carrier gas	helium, 35 cm/sec
injection	1 µL, 100:1 split
sample	1 mg/mL in methylene chloride
Application No.	794-0282



SUPELCO® Solutions within.™

GC Analysis of Methylphenidate (Ritalin) Enantiomers (N-Trifluoroacetyl Derivatives) on Astec® CHIRALDEX® B-DA

column . . . . Astec CHIRALDEX B-DA, 30 m x 0.25 mm I.D., 0.12 µm (72023AST)
oven . . . . . 170 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 35 psi
sample . . . . . peaks 1 & 2: methylphenidate enantiomers (N-TFA derivative)
Application No. G005070

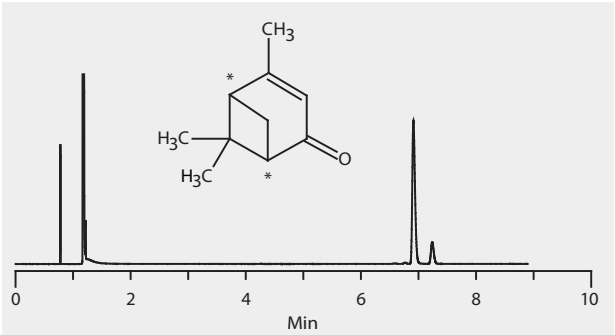


SUPELCO
Solutions within.™

GC Analysis of Verbenone Enantiomers on Astec® CHIRALDEX® B-TA

Can reverse elution order by using CHIRALDEX G-TA.

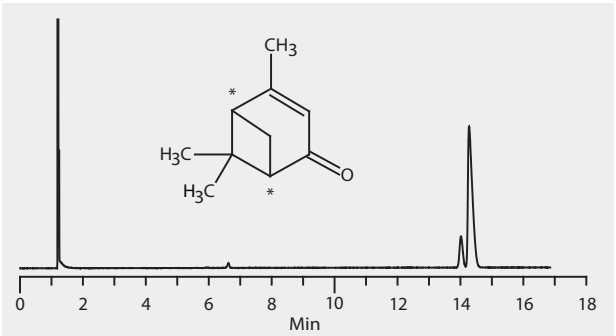
column . . . . Astec CHIRALDEX B-TA, 30 m x 0.25 mm I.D., 0.12 µm (73023AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2.5 mg/mL
peak 1: S(-)-verbenone
peak 2: R(+)-verbenone
Application No. G005077



GC Analysis of Verbenone Enantiomers on Astec® CHIRALDEX® G-TA

Can reverse elution order by using CHIRALDEX B-TA.

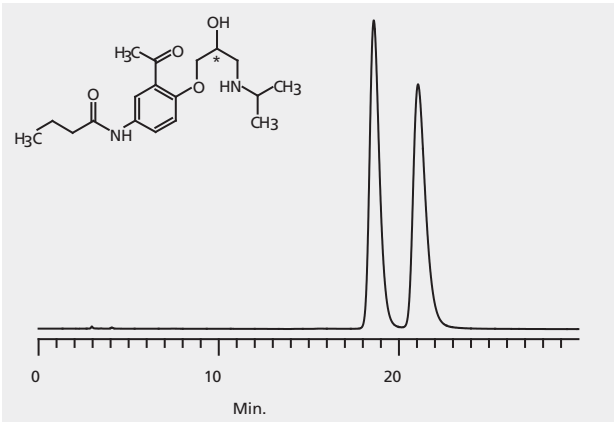
column . . . . Astec CHIRALDEX G-TA, 30 m x 0.25 mm I.D., 0.12 µm (73033AST)
oven . . . . . 120 °C
inj. temp. . . . . 250 °C
detector . . . . . FID, 250 °C
carrier gas . . . . . helium, 30 psi
injection . . . . . 1 µL, 80:1 split
sample . . . . . 2.5 mg/mL
peak 1: R(+)-verbenone
peak 2: S(-)-verbenone
Application No. G005076



SUPELCO®
Solutions within.™

HPLC Analysis of Acebutolol Enantiomers on Astec® CHIROBIOTIC® T2

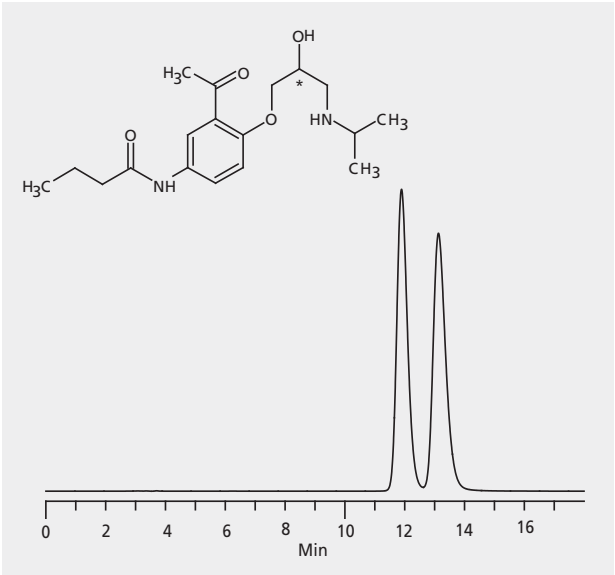
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.8:0.1:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 12 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004482



SUPELCO
Solutions within.™

HPLC Analysis of Acebutolol Enantiomers on Astec® CHIROBIOTIC® V2

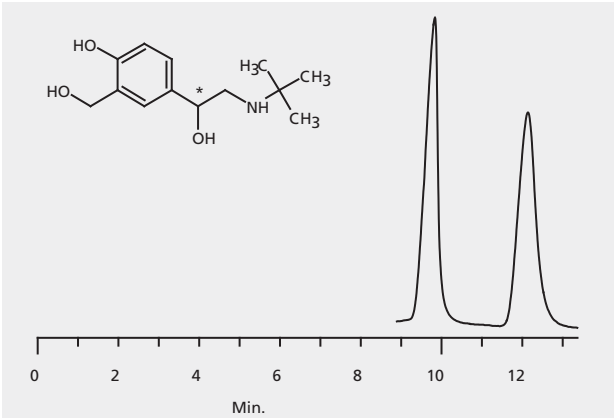
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (100:0.1:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004457



SUPELCO® Solutions within.™

HPLC Analysis of Albuterol Enantiomers on Astec® CHIROBIOTIC® T2

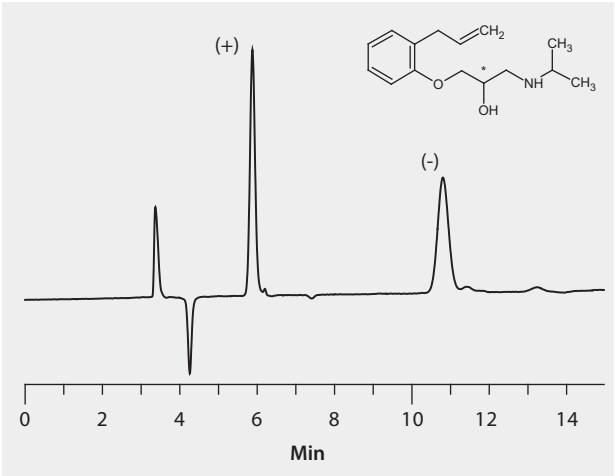
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . 0.1 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004593



SUPELCO
Solutions within.™

HPLC Analysis of Alprenolol Enantiomers on Astec® Cellulose DMP

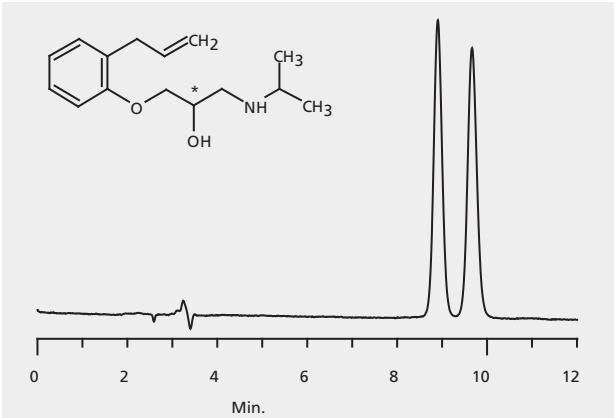
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) DEA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004984



SUPELCO® Solutions within.™

HPLC Analysis of Alprenolol Enantiomers on Astec® CHIROBIOTIC® T

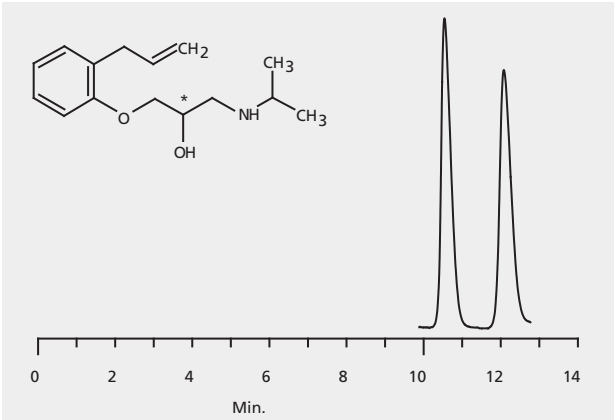
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 215 nm
injection . . . . . 3 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004486



SUPELCO
Solutions within.™

HPLC Analysis of Alprenolol Enantiomers on Astec® CHIROBIOTIC® T2

column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . 0.1 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 0.5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004592

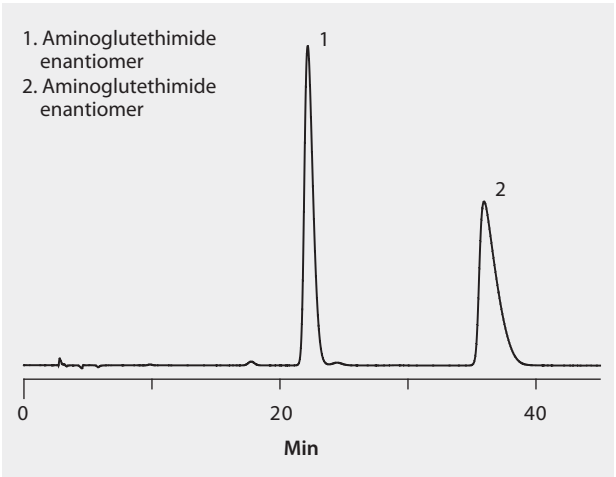


SUPELCO® Solutions within.™

HPLC Analysis of Aminoglutethimide Enantiomers on Astec® Cellulose DMP

Aminoglutethimide enantiomers are resolved by normal phase chromatography.

column . . ASTEC Cellulose DMP; 25 cm x 4.6 mm I.D., 5 µm particles (51099AST)
mobile phase . . (A) heptane; (B) isopropanol; (C) diethylamine; (70:30:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
injection . . . . . 15 µL
sample . . . . . aminoglutethimide, 1 g/L in 50:50, heptane:isopropanol
Application No. G005466



HPLC Analysis of 1-Aminoindan Enantiomers on LARIHC™ CF6-P

column . . . . . LARIHC CF6-P, 25 cm x 4.6 mm I.D., 5 µm particles (AZYP Part No.L1001, available from Supelco/Sigma-Aldrich as a custom item)

mobile phase . . . . . (A) methanol: (B) acetonitrile: (C) acetic acid: (D) triethylamine, (70:30:0.3.0.2, A:B:C:D)

flow rate . . . . . 1 mL/min

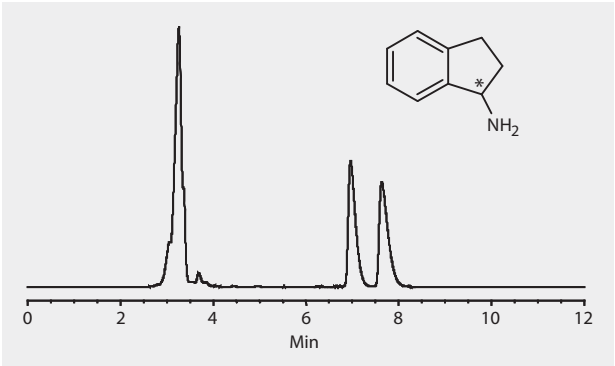
column temp. . . . . 20 °C

detector . . . . . UV, 254 nm

injection . . . . . 5 µL

sample . . . . . 1-Aminoindan, 0.3 mg/mL in ethanol

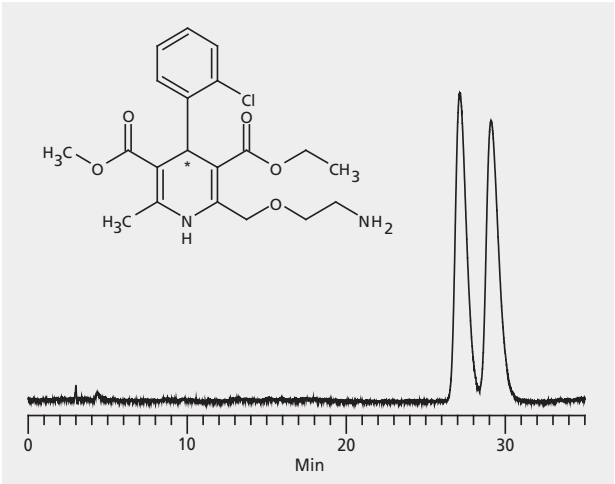
Application No. G005255



SUPELCO
Solutions within.™

HPLC Analysis of Amlodipine Enantiomers on Astec® CHIROBIOTIC® V2

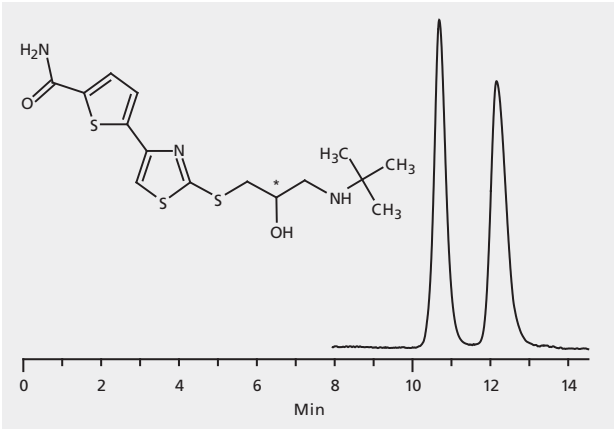
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) methanol; (B) 20 mM ammonium acetate, pH 4.1; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004463



SUPELCO® Solutions within.™

HPLC Analysis of Arotinolol Enantiomers on Astec® CHIROBIOTIC® T

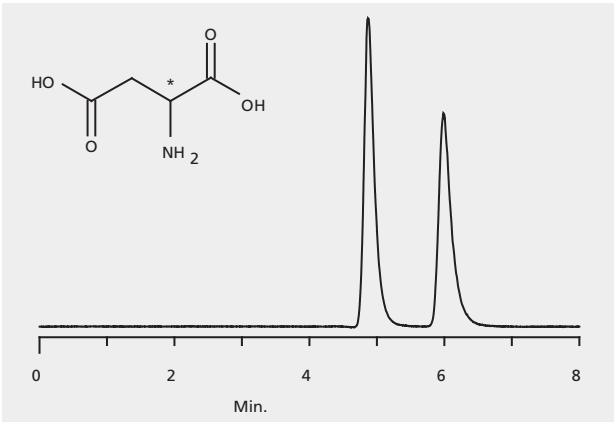
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) triethylamine; (55:45:0.3:0.2, A:B:C:D)
flow rate . . . . . 2 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004539



SUPELCO®
Solutions within.™

HPLC Analysis of Aspartic Acid Enantiomers on Astec® CHIROBIOTIC® T, Ethanol Mobile Phase

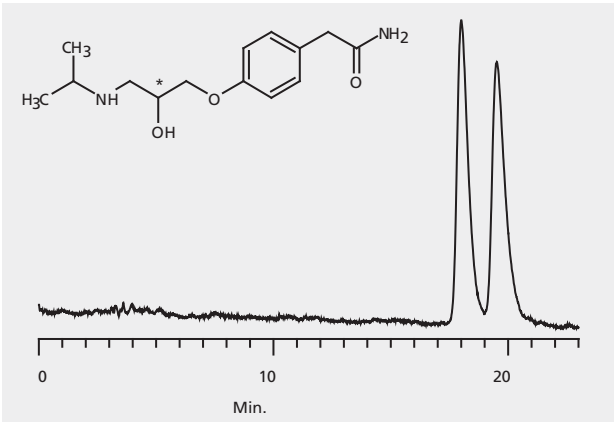
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (C) formic acid; (20:80:0.02, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004489



SUPELCO® Solutions within.™

HPLC Analysis of Atenolol Enantiomers on Astec® CHIROBIOTIC® T

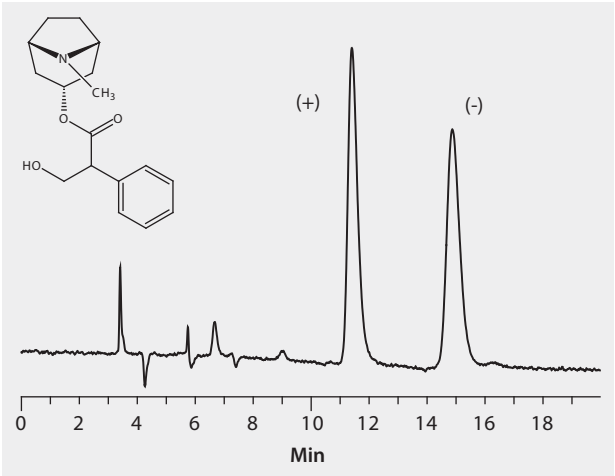
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 220 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004490



SUPELCO® Solutions within.™

HPLC Analysis of Atropine Enantiomers on Astec® Cellulose DMP

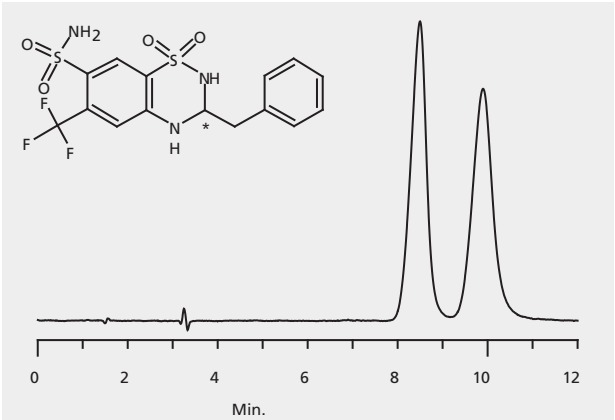
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) DEA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004985



SUPELCO® Solutions within.™

HPLC Analysis of Bendroflumethiazide Enantiomers on Astec® CHIROBIOTIC® T

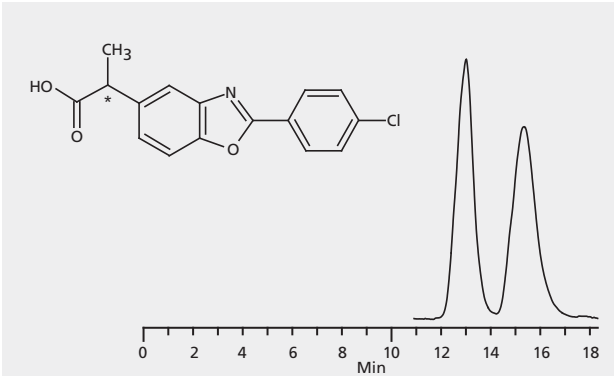
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 215 nm
injection . . . . . 5 µg/mL
sample . . . . . 1 mg/mL in methanol
Application No. G004491



SUPELCO®
Solutions within.™

HPLC Analysis of Benoxaprofen Enantiomers on Astec® CHIROBIOTIC® V

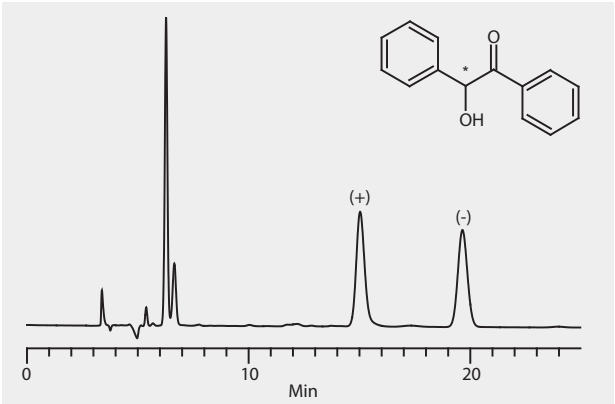
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 0.1 wt% triethylamine, pH 7.0; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004637



SUPELCO
Solutions within.™

HPLC Analysis of Benzoin Enantiomers on Astec® Cellulose DMP

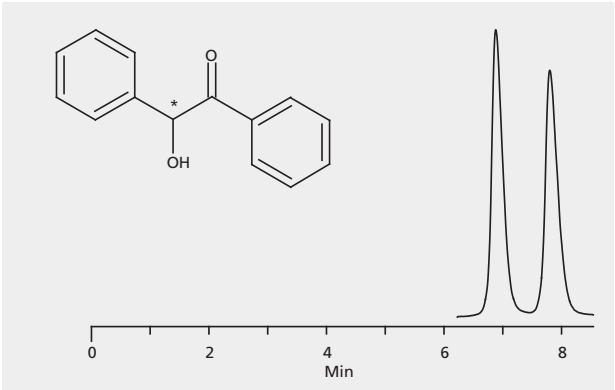
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) TFA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004986



SUPELCO® Solutions within.™

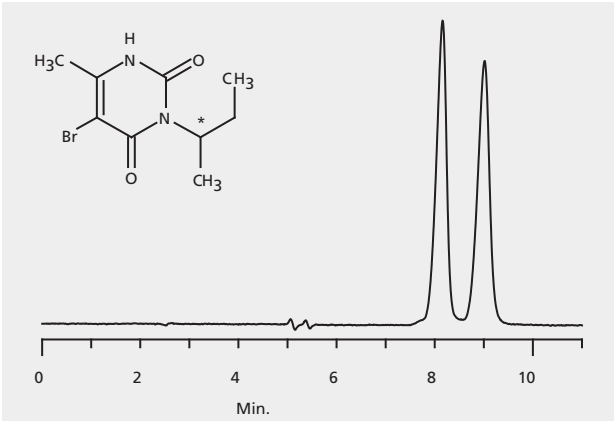
HPLC Analysis of Benzoin Enantiomers on Astec® (R,R) P-CAP™-DP

column . . Astec (R,R) P-CAP-DP, 25 cm x 4.6 mm I.D., 5 µm particles (35024AST)
mobile phase . . . . . (A) hexane; (B) ethanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004726



HPLC Analysis of Bromacil Enantiomers on Astec® CHIROBIOTIC® T

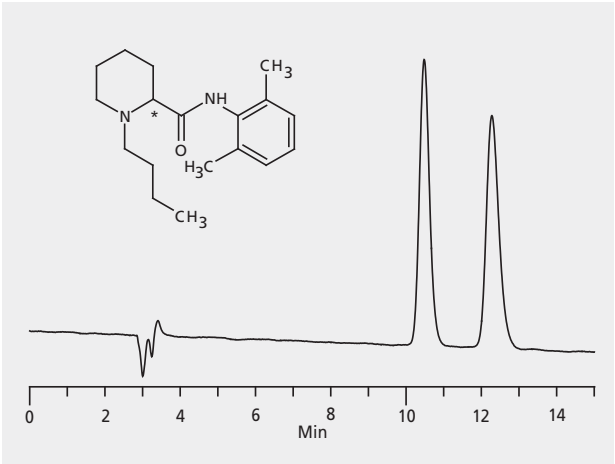
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (60:40, A:B)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 215 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004492



SUPELCO®
Solutions within.™

HPLC Analysis of Bupivacaine Enantiomers on Astec® CHIROBIOTIC® V2, Acetate Mobile Phase

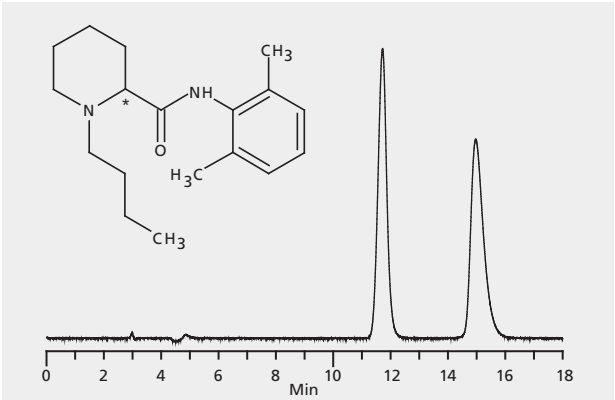
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) methanol; (B) 20 mM ammonium acetate, pH 4.1; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004464



SUPELCO® Solutions within.™

HPLC Analysis of Bupivacaine Enantiomers on Astec® CHIROBIOTIC® V2, Formate Mobile Phase

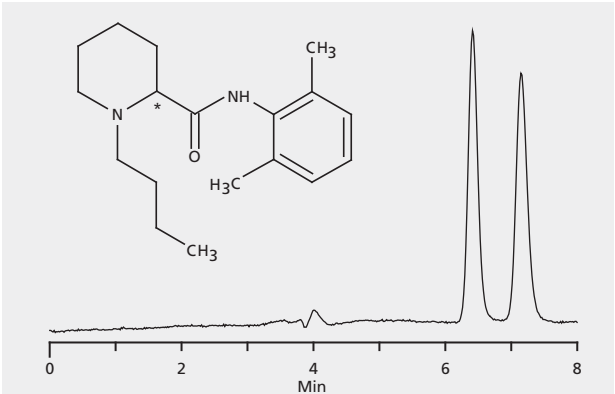
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) 20 mM ammonium formate, pH 4.1; (B) methanol; (5:95, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004619



SUPELCO® Solutions within.™

HPLC Analysis of Bupivacaine Enantiomers on Astec® CHIROBIOTIC® V

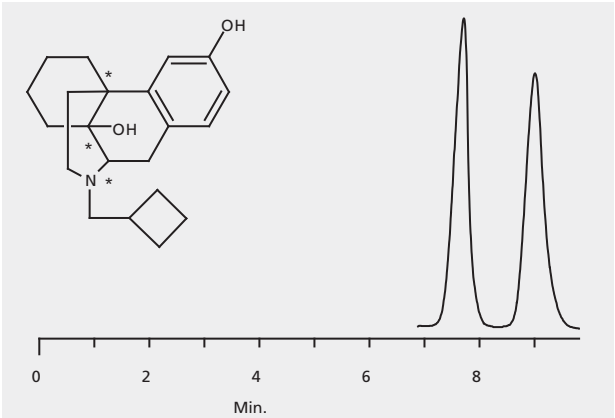
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 1% triethylamine, pH 4.1; (B) methanol; (5:95, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 202 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004623



SUPELCO®
Solutions within.™

HPLC Analysis of Butorphanol Enantiomers on Astec® CHIROBIOTIC® T

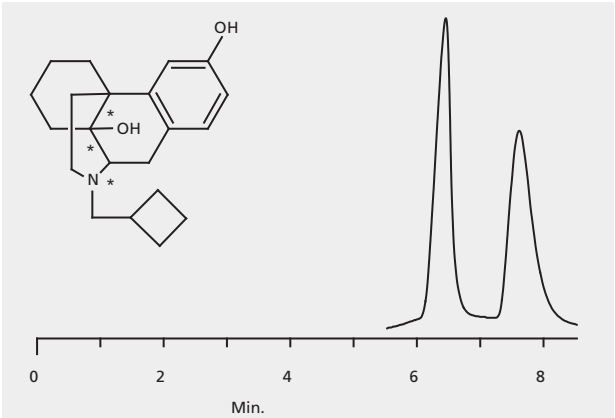
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004574



SUPELCO
Solutions within.™

HPLC Analysis of Butorphanol Enantiomers on Astec® CHIROBIOTIC® T2

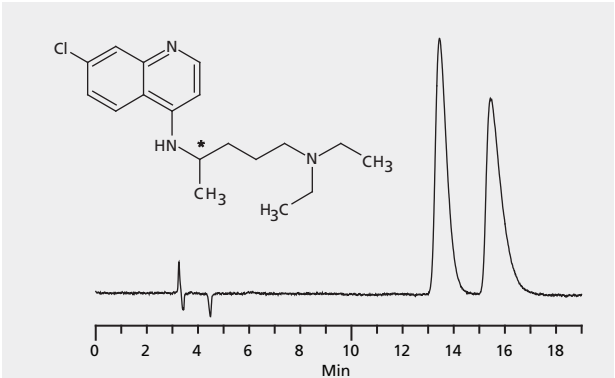
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004591



SUPELCO®
Solutions within.™

HPLC Analysis of Chloroquine Enantiomers on Astec® CHIROBIOTIC® V

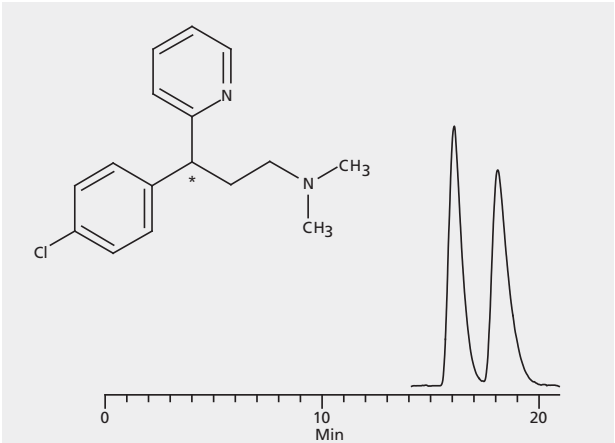
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . (A) methanol; (B) acetic acid; (C) triethylamine; (98:1:1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004620



SUPELCO
Solutions within.™

HPLC Analysis of Chlorpheniramine Enantiomers on Astec® CYCLOBOND® I 2000

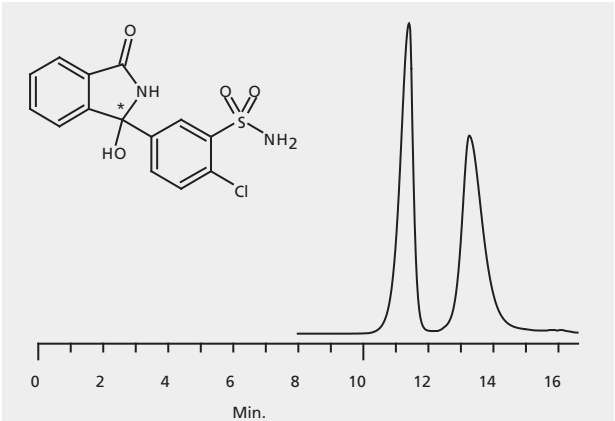
column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . (A) 1% triethylamine acetate, pH 4.1; (B) acetonitrile; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004688



SUPELCO®
Solutions within.™

HPLC Analysis of Chlorthalidone Enantiomers on Astec® CHIROBIOTIC® T

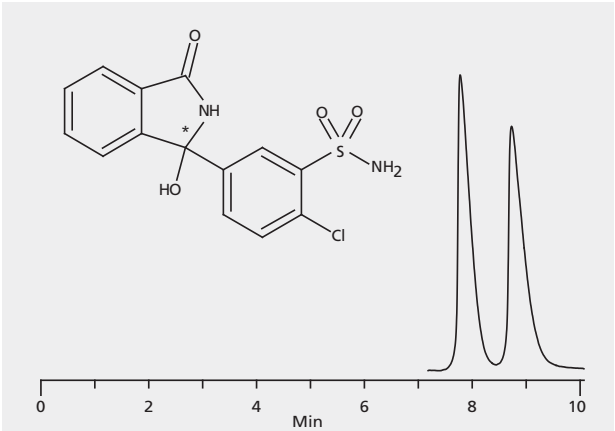
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) methanol; (80:20, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004584



SUPELCO® Solutions within.™

HPLC Analysis of Chlorthalidone Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

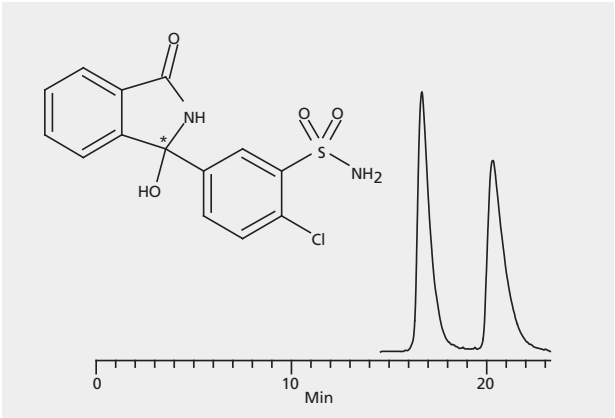
column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.0; (B) acetonitrile; (85:15, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 235 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004712



SUPELCO® Solutions within.™

HPLC Analysis of Chlorthalidone Enantiomers on Astec® CYCLOBOND® I 2000 RSP

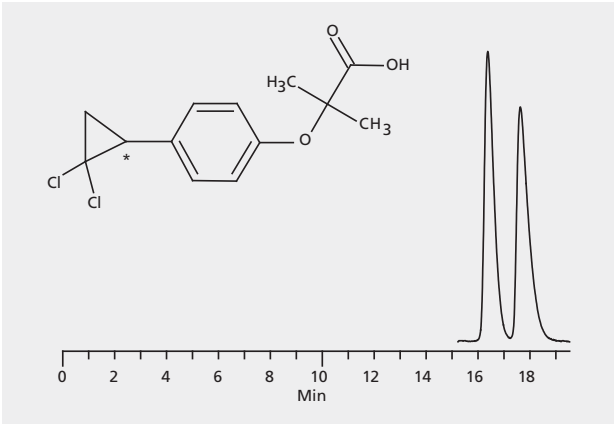
column . . CYCLOBOND I 2000 RSP, 25 cm x 4.6 mm I.D., 5 µm particles (20324AST)
mobile phase . . (A) 1% triethylamine acetate, pH 4.1; (B) acetonitrile; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004704



SUPELCO
Solutions within.™

HPLC Analysis of Ciprofibrate Enantiomers on Astec® CYCLOBOND® I 2000

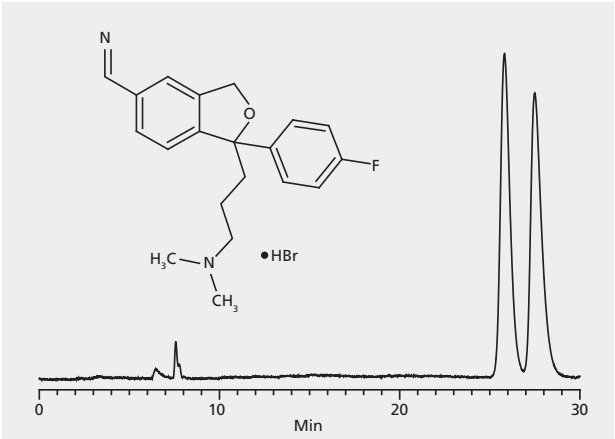
column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) triethylamine; (90:10:0.3:0.2, A:B:C:D)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004689



SUPELCO® Solutions within.™

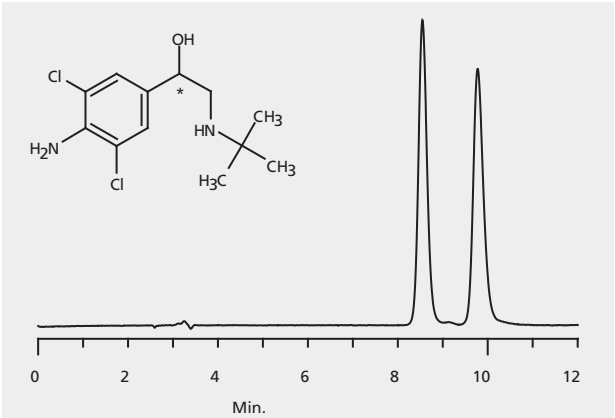
HPLC Analysis of Citalopram Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.8:0.1:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 213 nm
injection . . . . . 5 µL
sample . . . . . citalopram, 1 mg/mL in mobile phase
Application No. G004408



HPLC Analysis of Clenbutorol Enantiomers on Astec® CHIROBIOTIC® T

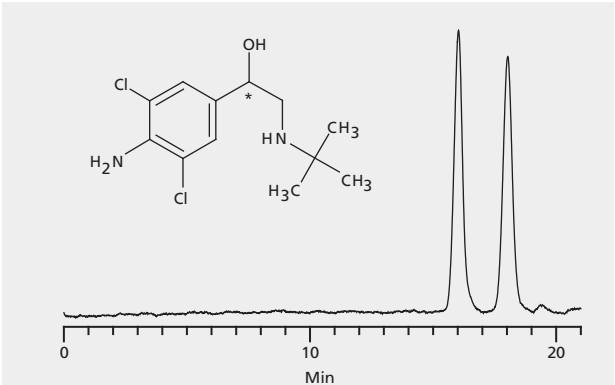
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 3 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004493



SUPELCO
Solutions within.™

HPLC Analysis of Clenbuterol Enantiomers on Astec® CHIROBIOTIC® V

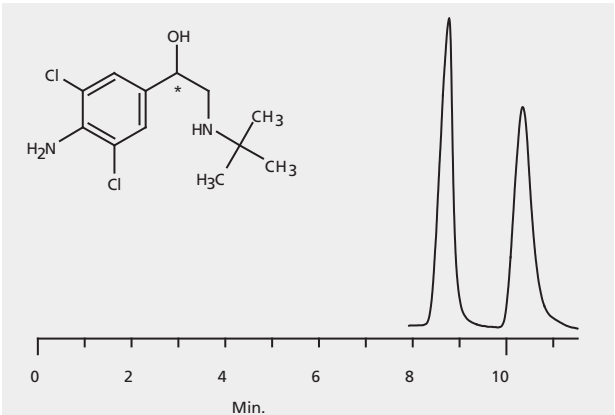
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.98:0.01:0.01, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004621



SUPELCO
Solutions within.™

HPLC Analysis of Clenbuterol Enantiomers on Astec® CHIROBIOTIC® T2

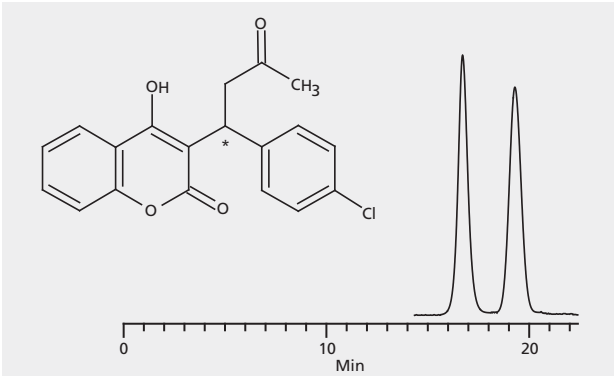
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . 0.1 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004596



SUPELCO
Solutions within.™

HPLC Analysis of Coumachlor Enantiomers on Astec® CHIROBIOTIC® V

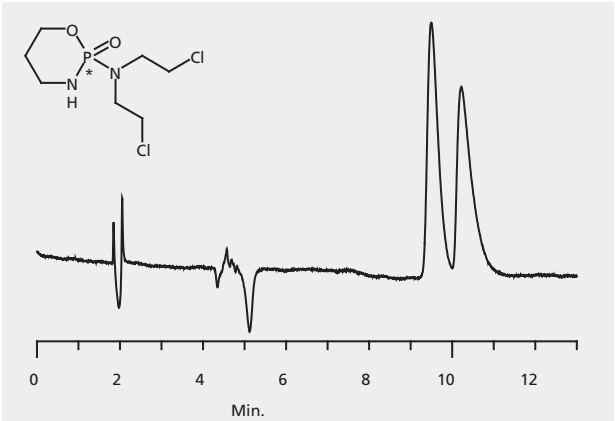
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM ammonium nitrate, pH 5.5; (B) THF; (75:25, A:B)
flow rate . . . . . 0.75 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2.5 mg/mL in methanol
Application No. G004638



SUPELCO
Solutions within.™

HPLC Analysis of Cyclophosphamide Enantiomers on Astec® CHIROBIOTIC® T

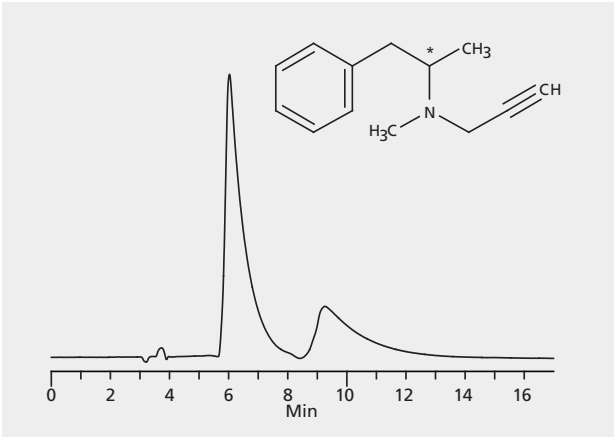
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) ethanol; (C) THF; (90:5:5, A:B:C)
flow rate . . . . . 0.75 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004494



SUPELCO
Solutions within.™

HPLC Analysis of Deprenyl (Selegiline) Enantiomers on Astec® CYCLOBOND® I 2000 DMP

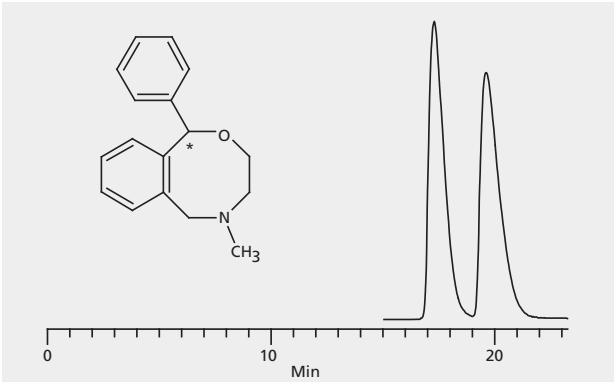
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.0; (B) methanol; (65:35, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004681



SUPELCO® Solutions within.™

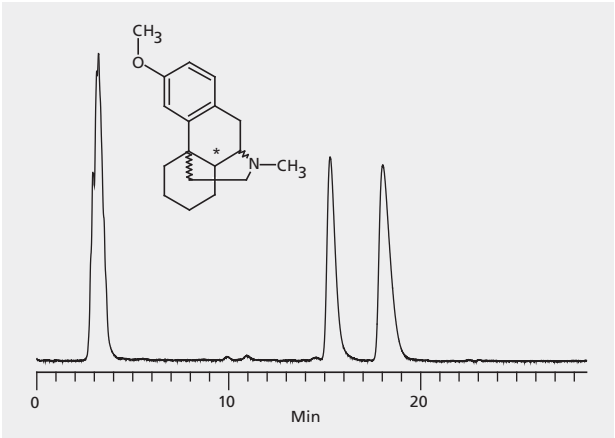
HPLC Analysis of N-Desmethylnefopam Enantiomers on Astec® CHIROBIOTIC® V2

column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) ammonium hydroxide; (100:0.1:0.02, A:B:C)
flow rate . . . . . 1.2 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004655



HPLC Analysis of Dextromethorphan Enantiomers on Astec® CHIROBIOTIC® V2

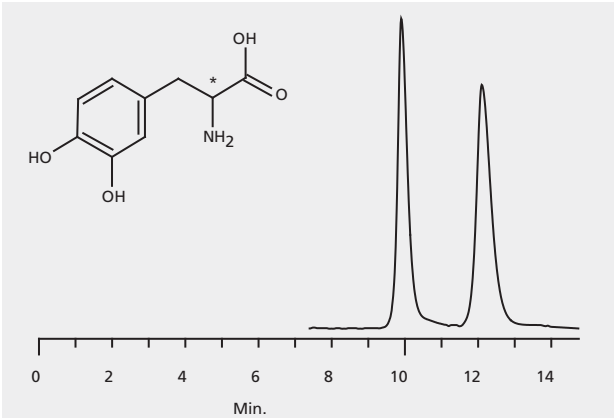
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) methanol; (B) 20 mM ammonium acetate, pH 4.1; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004468



SUPELCO®
Solutions within.™

HPLC Analysis of 3,4-Dihydroxyphenylalanine (DOPA) Enantiomers on Astec® CHIROBIOTIC® T

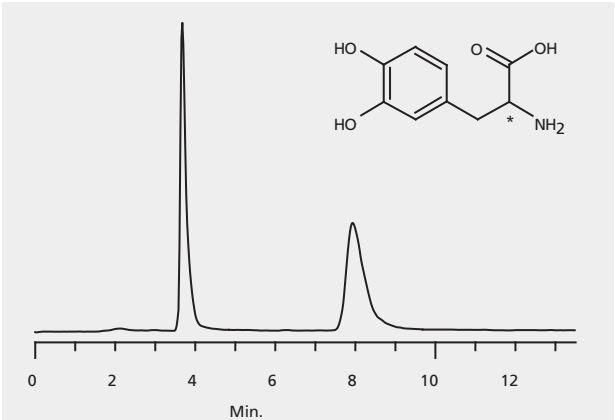
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (25:75, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004586



SUPELCO® Solutions within.™

HPLC Analysis of 3,4-Dihydroxyphenylalanine (DOPA) Enantiomers on Astec® CHIROBIOTIC® TAG

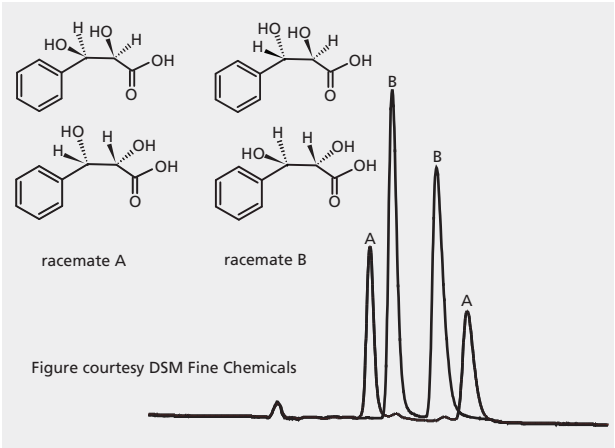
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004608



SUPELCO®
Solutions within.™

HPLC Analysis of 2,3-Dihydroxy-3-Phenylpropionic Acid Enantiomers on CHIROBIOTIC R

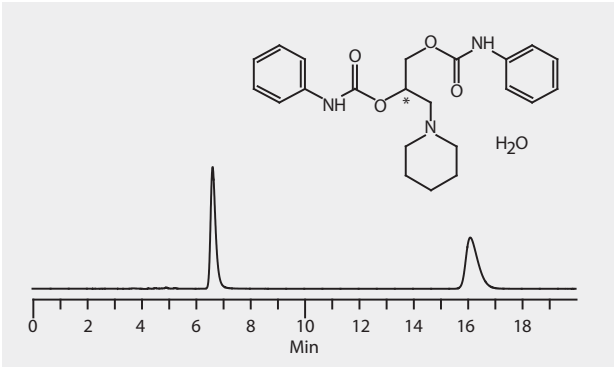
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . (A) 0.1% ammonia, pH 4.1 with formic acid;
(B) methanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 258 nm
injection . . . . . 10 µL
sample . . . . . 2,3-dihydroxy-3-phenyl-propionic acid isomers:
(A) racemate A (4.85 and 6.95 min)
(B) racemate B (5.33 and 6.29 min)
Application No. G004409



SUPELCO®
Solutions within.™

HPLC Analysis of Diperodon Enantiomers on Astec® Cellulose DMP, LC/MS Conditions

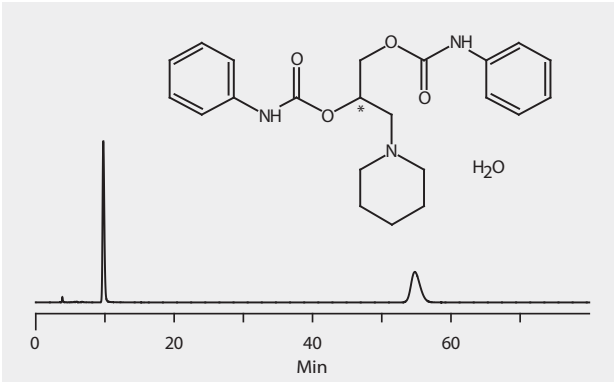
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) ammonium formate; (100:0.1, A:B)
(Note: 0.1 w/v ammonium formate, 0.1 g/100 mL)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004987



SUPELCO® Solutions within.™

HPLC Analysis of Diperodon Enantiomers on Astec® Cellulose DMP (no additives)

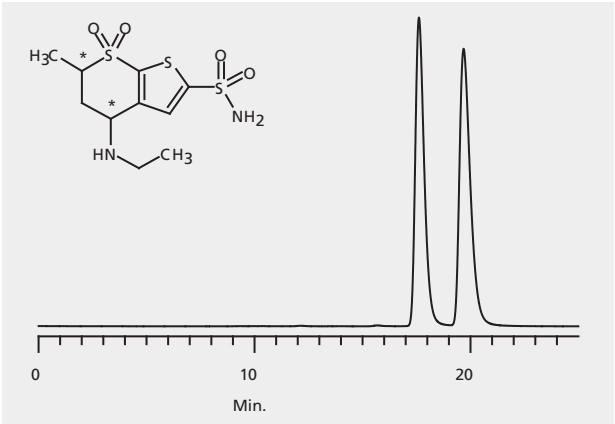
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) acetonitrile; (100, A)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005004



SUPELCO
Solutions within.™

HPLC Analysis of Dorzolamide Enantiomers on Astec® CHIROBIOTIC® V2

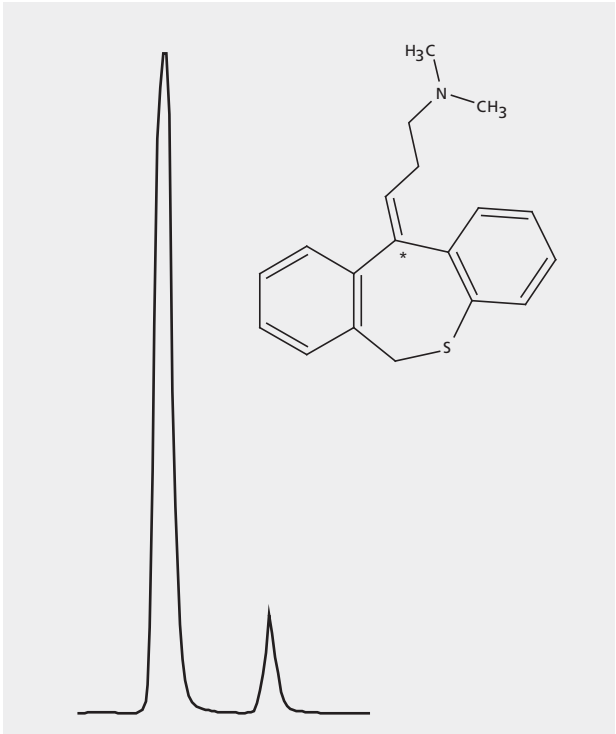
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . (A) 3.81 mM ammonium trifluoroacetic acid; (B) methanol; (5:95, A:B)
flow rate . . . . . 0.3 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004478



SUPELCO® Solutions within.™

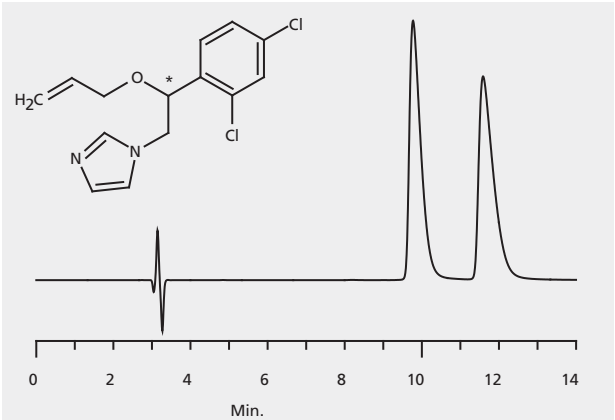
HPLC Analysis of cis/trans-Dothiepin Enantiomers on Astec® CYCLOBOND® I 2000 AC

column . . CYCLOBOND I 2000 AC, 25 cm x 4.6 mm I.D., 5 µm particles (20124AST)
mobile phase . . (A) 1.0% triethylamine acetate, pH 4.1; (B) acetonitrile; (85:15, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
peak 1: 9.48 min.
peak 2: 12.48 min.
Application No. G004732



HPLC Analysis of Enilconazol (Imazalil) Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

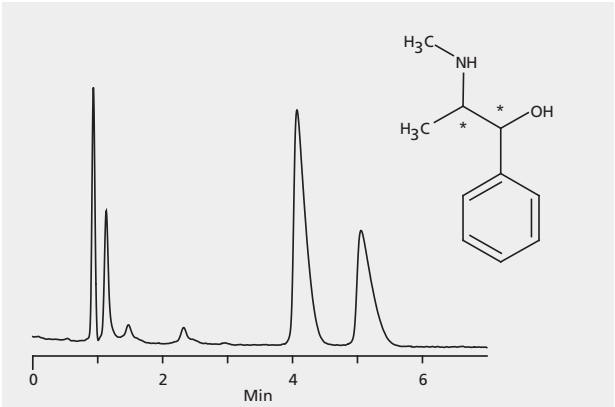
column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) acetonitrile; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004588



SUPELCO® Solutions within.™

HPLC Analysis of Ephedrine Enantiomers on CHIRALPAK® AGP

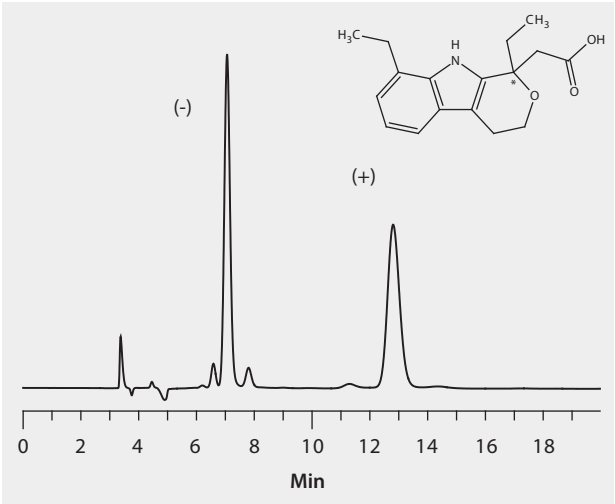
column . . . . . CHIRAL-AGP, 10 cm x 4 mm I.D., 5 µm particles (58170AST)
mobile phase . . . . . 1 mM octanoic acid in 10 mM $(NH_4)_2HPO_4$, pH 6.9
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 225 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004730



SUPELCO® Solutions within.™

HPLC Analysis of Etodolac Enantiomers on Astec® Cellulose DMP

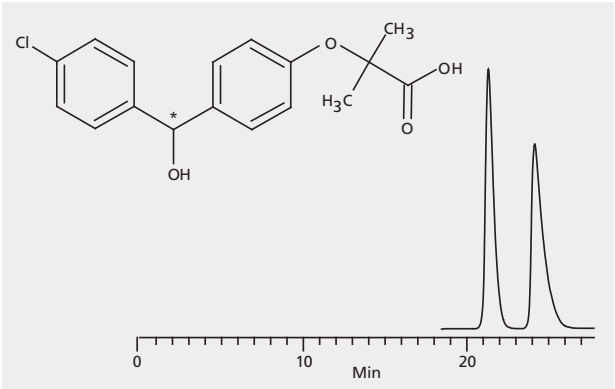
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) TFA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004988



SUPELCO® Solutions within.™

HPLC Analysis of Fenofibric Acid Enantiomers on Astec® CYCLOBOND® I 2000

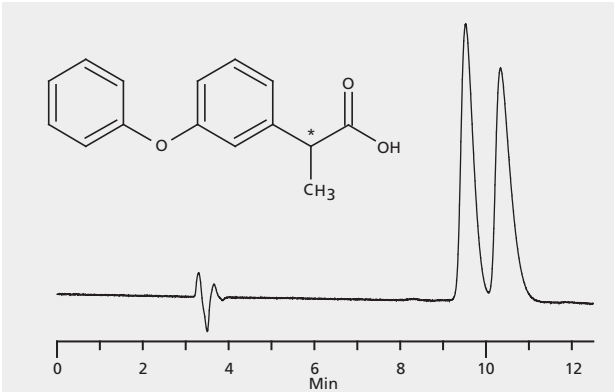
column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . (A) 0.1% triethylamine acetate, pH 4.0; (B) acetonitrile; (20:80, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 3 mg/mL in methanol
Application No. G004691



SUPELCO
Solutions within.™

HPLC Analysis of Fenoprofen Enantiomers on Astec® CHIROBIOTIC® V

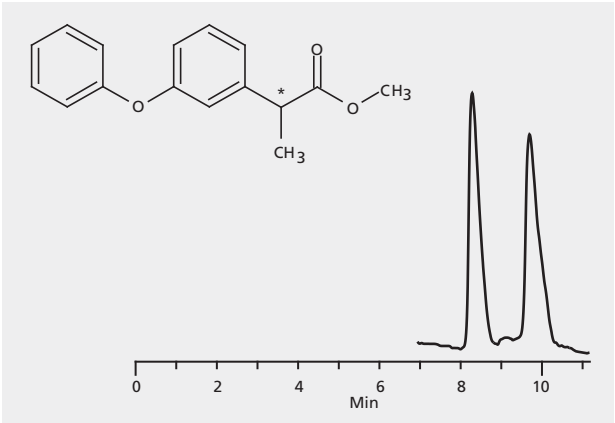
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 1% triethylamine, pH 7.0; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 215 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004624



SUPELCO
Solutions within.™

HPLC Analysis of Fenoprofen Methyl Ester Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM sodium citrate, pH 6.3; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004651

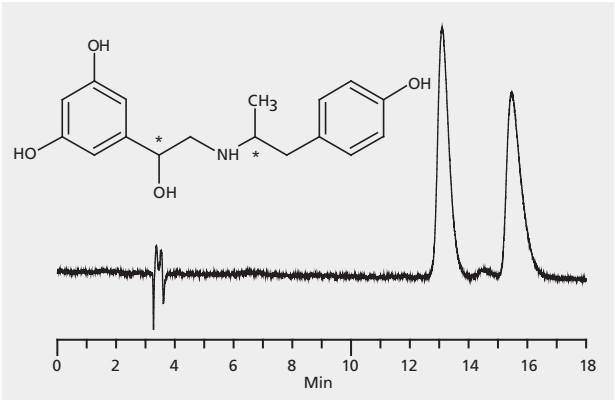


SUPELCO
Solutions within.™

HPLC Analysis of Fenoterol Enantiomers on Astec® CHIROBIOTIC® V

chiral

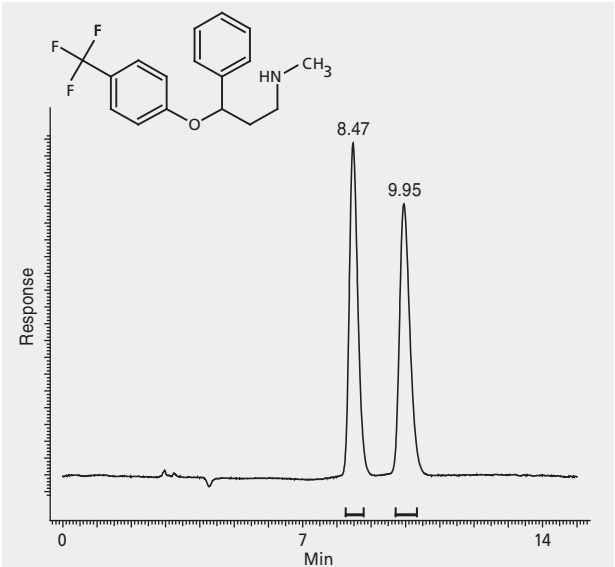
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM ammonium nitrate, pH 5.5; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 275 nm
injection . . . . . 15 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004625



SUPELCO®
Solutions within.™

HPLC Analysis of Fluoxetine Enantiomers on Astec® CHIROBIOTIC® V2

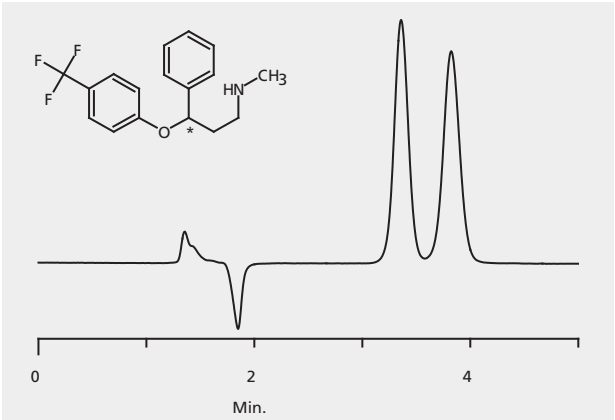
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 15 mM ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004465



SUPELCO
Solutions within.™

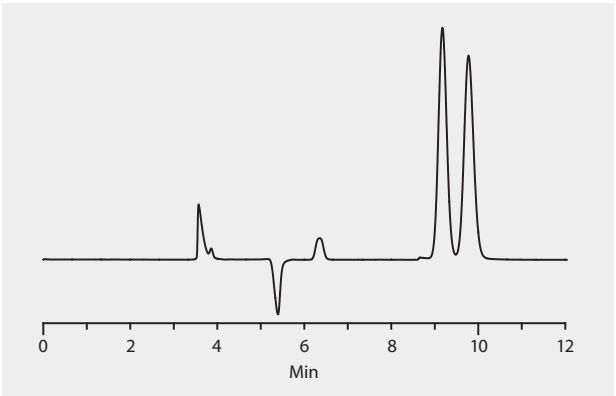
HPLC Analysis of Fluoxetine Enantiomers on Narrowbore Astec® CHIROBIOTIC® V2

column . . . . . CHIROBIOTIC V2, 10 cm x 2.1 mm I.D., 5 µm particles (15018AST)
mobile phase . . . . . 13 mM ammonium acetate in methanol
flow rate . . . . . 0.2 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004476



HPLC Analysis of Flurbiprofen Enantiomers on Astec® Cellulose DMP

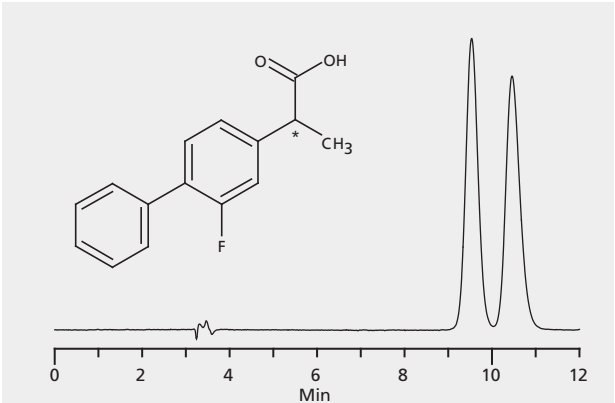
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) isopropanol; (C) TFA; (95:5:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 3 µL
sample . . . . . 1 g/L in methanol
Application No. G005467



SUPELCO
Solutions within.™

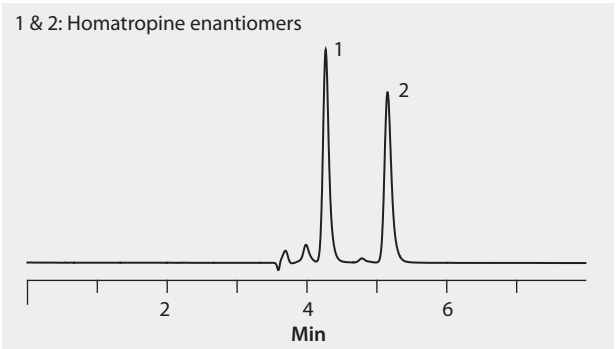
HPLC Analysis of Flurbiprofen Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM ammonium nitrate, pH 5.5; (B) THF; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004626



HPLC Analysis of Homatropine Enantiomers on Astec® Cellulose DMP

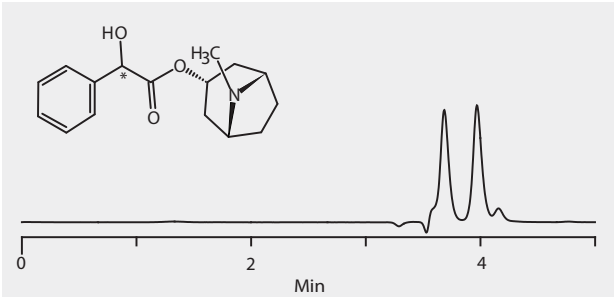
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) DEA; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004997



SUPELCO® Solutions within.™

HPLC Analysis of Homatropine Enantiomers on Astec® Cellulose DMP, LC/MS Conditions

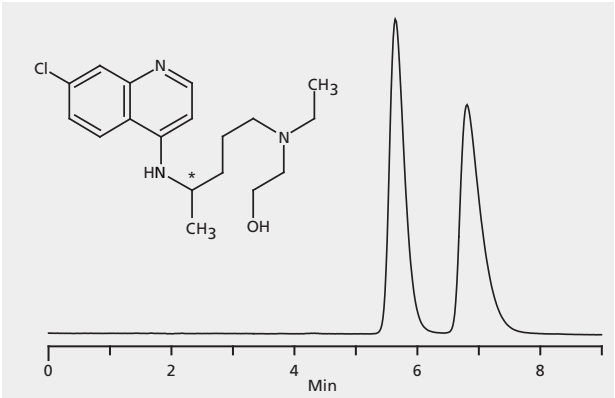
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) ammonium formate; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004998



SUPELCO
Solutions within.™

HPLC Analysis of Hydroxychloroquine Enantiomers on Astec® CHIROBIOTIC® V

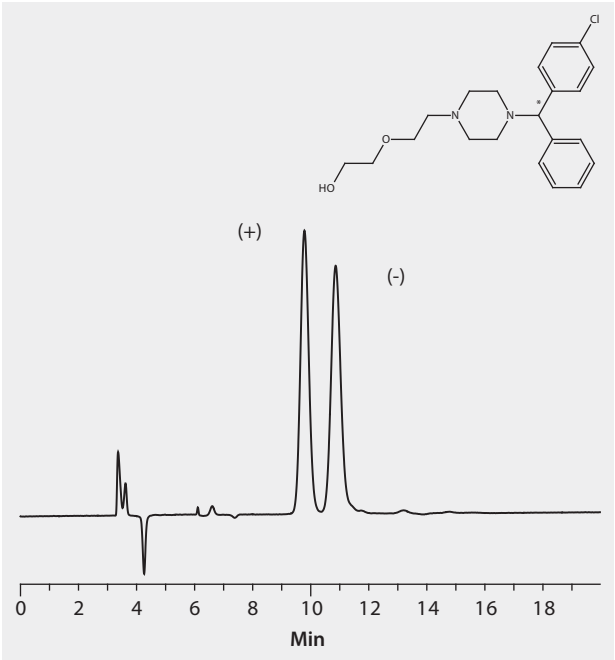
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . (A) methanol; (B) acetic acid; (C) triethylamine; (98:1:1, A:B:C)
flow rate . . . . . 2 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004627



SUPELCO
Solutions within.™

HPLC Analysis of Hydroxyzine Enantiomers on Astec® Cellulose DMP

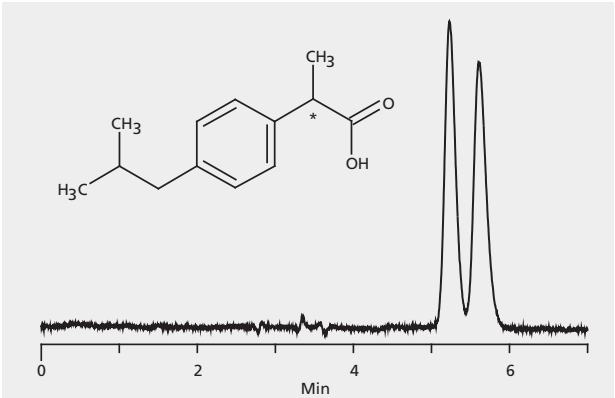
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) DEA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004989



SUPELCO® Solutions within.™

HPLC Analysis of Ibuprofen Enantiomers on Astec® CHIROBIOTIC® V

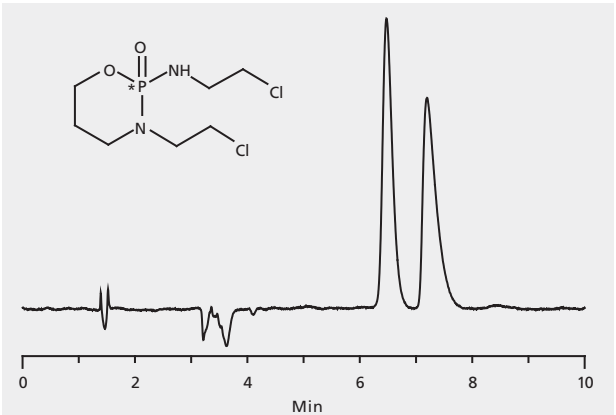
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM sodium citrate; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 225 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004628



SUPELCO®
Solutions within.™

HPLC Analysis of Ifosfamide Enantiomers on Astec® CHIROBIOTIC® T

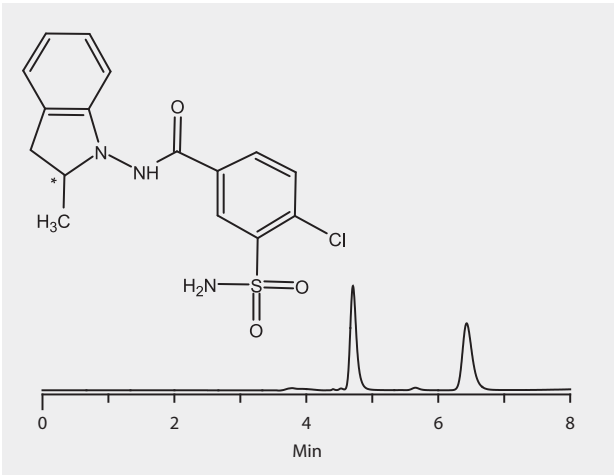
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) water; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004499



SUPELCO® Solutions within.™

HPLC Analysis of Indapamide Enantiomers on Astec® Cellulose DMP

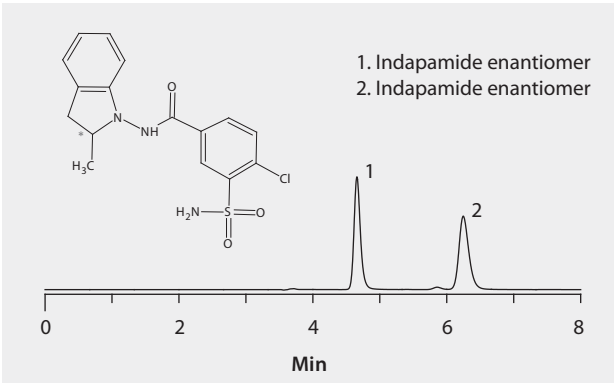
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) DEA; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005000



SUPELCO® Solutions within.™

HPLC Analysis of Indapamide Enantiomers on Astec® Cellulose DMP, LC/MS

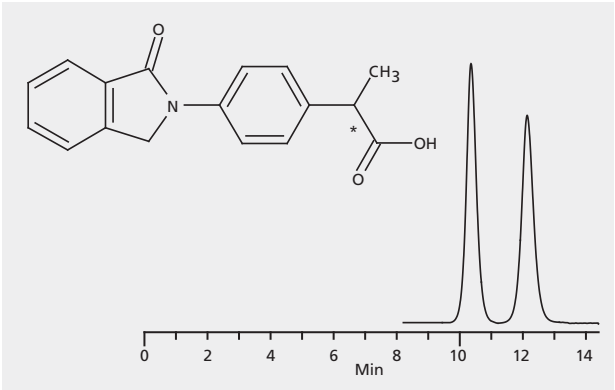
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) ammonium formate; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µl/h
sample . . . . . 2 mg/mL in mobile phase
Application No. G004999



SUPELCO®
Solutions within.™

HPLC Analysis of Indoprofen Enantiomers on Astec® CHIROBIOTIC® V

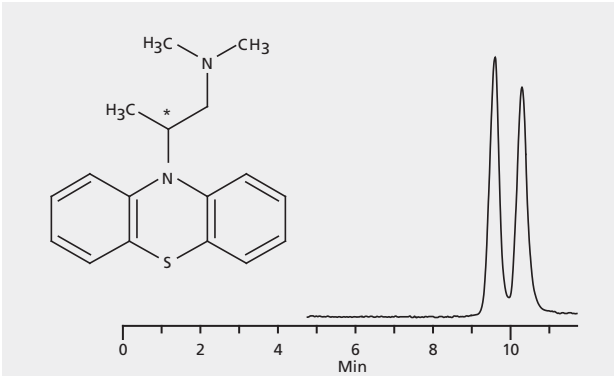
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM sodium citrate, pH 6.3; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004652



SUPELCO® Solutions within.™

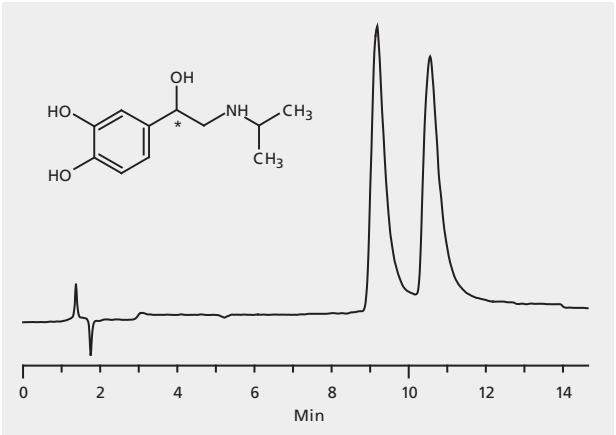
HPLC Analysis of Isopromethazine Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (100:0.1:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 240 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004640



HPLC Analysis of Isoproterenol Enantiomers on Astec® CHIROBIOTIC® T

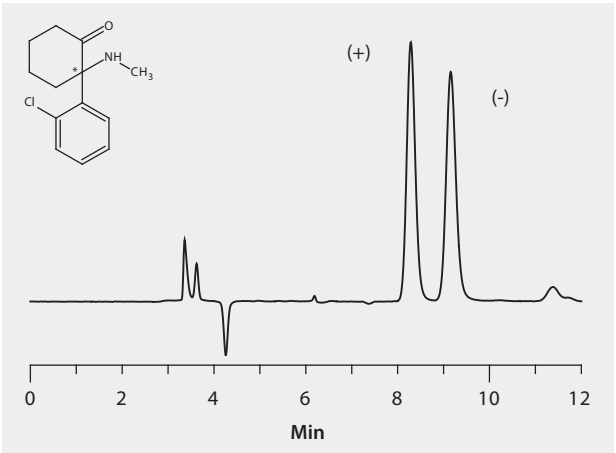
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) triethylamine; (55:45:0.3:0.2, A:B:C:D)
flow rate . . . . . 2 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004543



SUPELCO® Solutions within.™

HPLC Analysis of Ketamine Enantiomers on Astec® Cellulose DMP

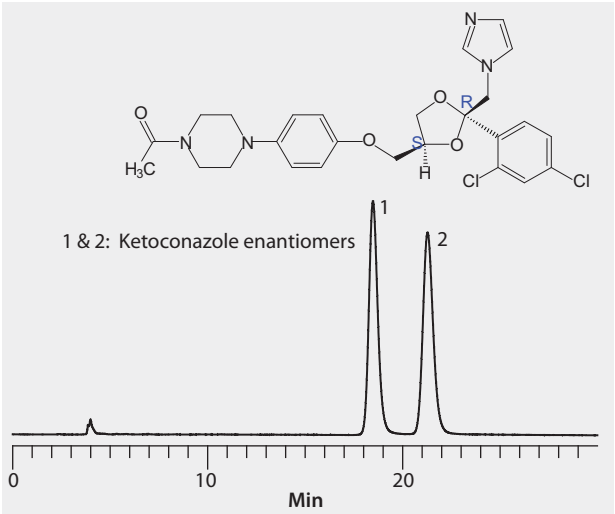
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) DEA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004990



SUPELCO
Solutions within.™

HPLC Analysis of Ketoconazole Enantiomers on Astec® Cellulose DMP, No Additives

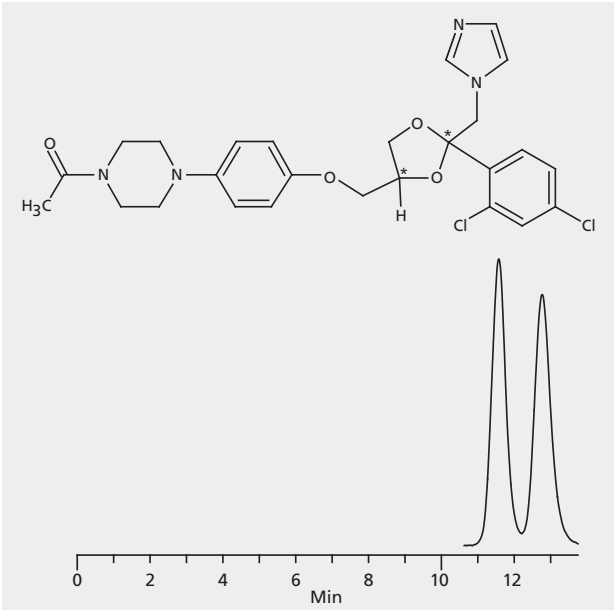
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) acetonitrile; (100, A)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005005



SUPELCO® Solutions within.™

HPLC Analysis of Ketoconazole Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

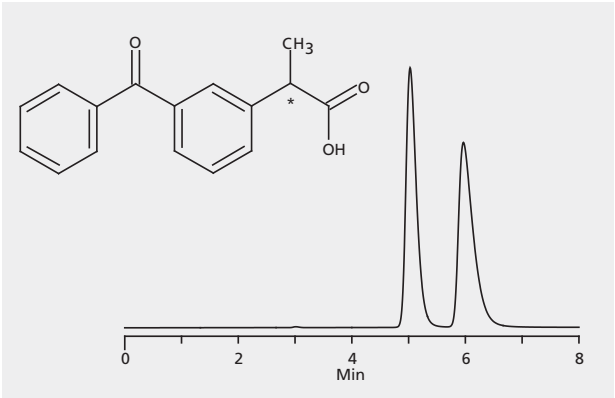
column	CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase	(A) 0.1% formic acid; (B) acetonitrile; (70:30, A:B)
flow rate	1 mL/min
column temp.	25 °C
injection	1 µL
sample	1 mg/mL in methanol
detector	UV, 230 nm
Application No.	G004716



SUPELCO®
Solutions within.™

HPLC Analysis of Ketoprofen Enantiomers on Astec® CHIROBIOTIC® R

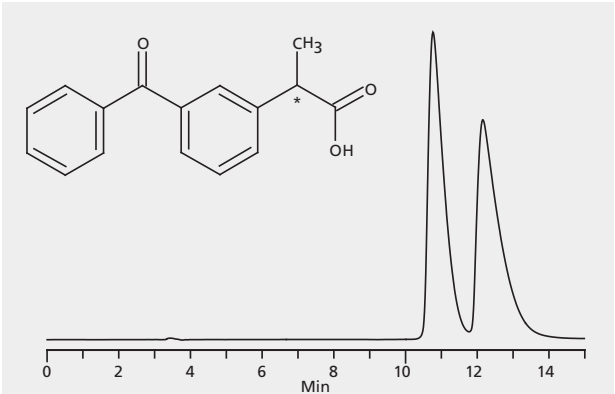
column . . . . . CHIROBIOTIC R, 15 cm x 4.6 mm I.D., 5 µm particles (13023AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 5.6; (B) methanol; (50:50, A:B)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004666



SUPELCO®
Solutions within.™

HPLC Analysis of Ketoprofen Enantiomers on Astec® CHIROBIOTIC® V

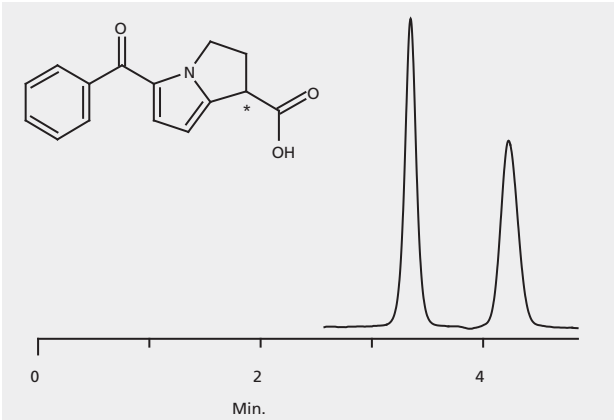
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM sodium citrate; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004629



SUPELCO® Solutions within.™

HPLC Analysis of Ketorolac Enantiomers on Astec® CHIROBIOTIC® T

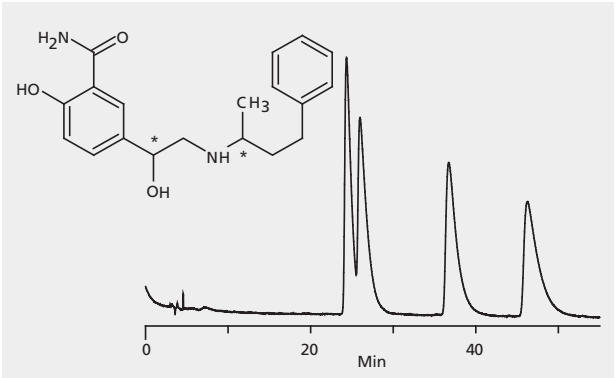
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 0.1 wt% mM ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004581



SUPELCO®
Solutions within.™

HPLC Analysis of Labetalol Enantiomers on Astec® CHIROBIOTIC® V

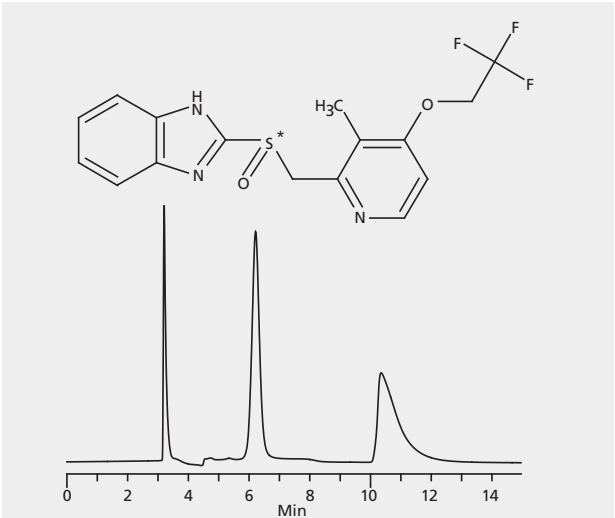
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.8:0.15:0.05, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 206 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004630



SUPELCO®
Solutions within.™

HPLC Analysis of Lansoprazole Enantiomers on Astec® CYCLOBOND® I 2000 DMP

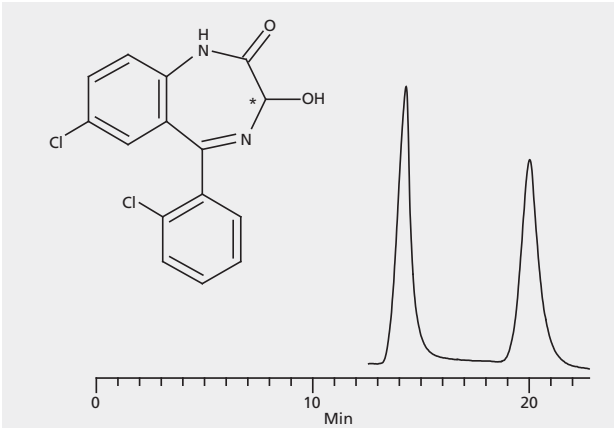
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) ammonium hydroxide; (95:5:0.4:0.1, A:B:C:D)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004687



SUPELCO
Solutions within.™

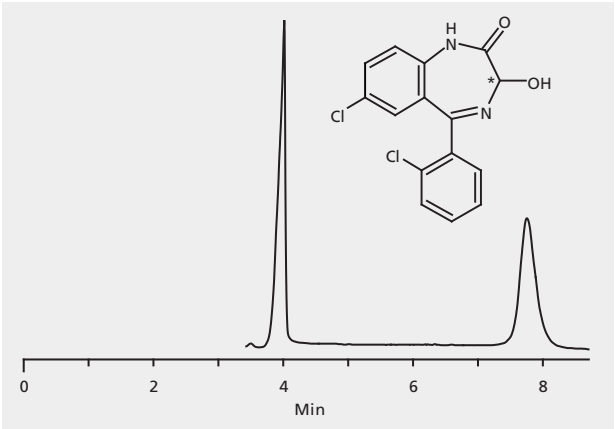
HPLC Analysis of Lorazepam Enantiomers on Astec® (R,R) P-CAP™

column . . . . Astec (R,R) P-CAP, 25 cm x 4.6 mm I.D., 5 µm particles (31024AST)
mobile phase . . . . . (A) ethanol; (B) heptane; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004721



HPLC Analysis of Lorazepam Enantiomers on Astec® CHIROBIOTIC® T

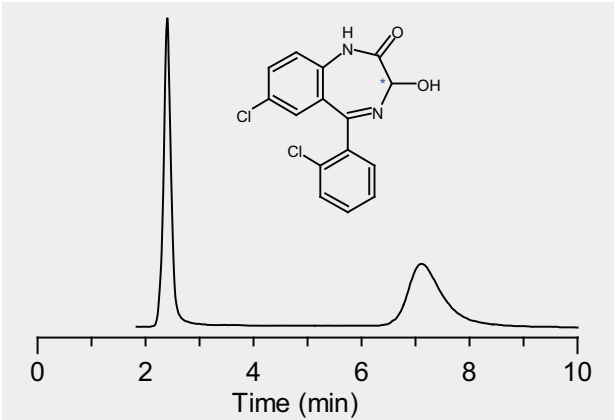
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004551



SUPELCO
Solutions within.™

HPLC Analysis of Lorazepam Enantiomers on Astec® CHIROBIOTIC® TAG

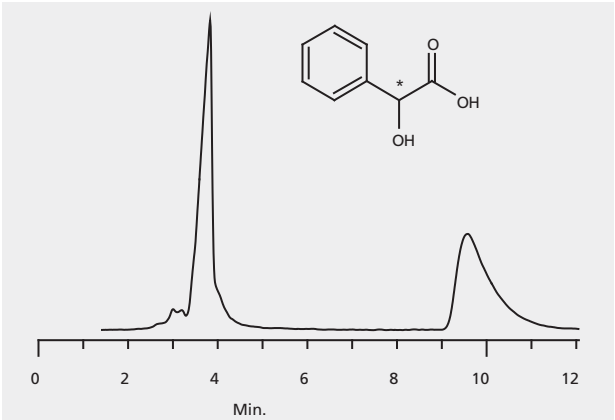
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . methanol
flow rate . . . . . 2 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004609



SUPELCO
Solutions within.™

HPLC Analysis of Mandelic Acid Enantiomers on Astec® CHIROBIOTIC® TAG

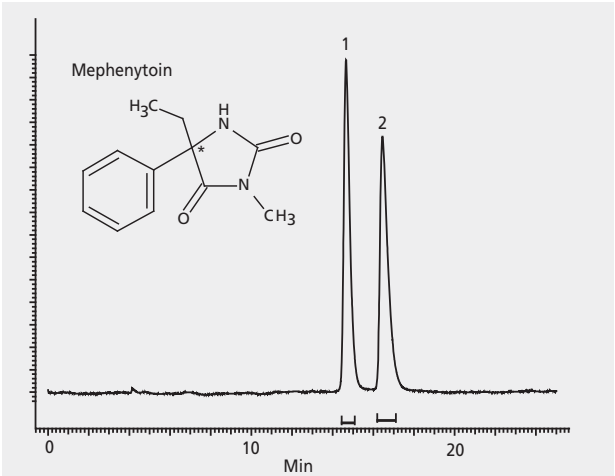
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004610



SUPELCO® Solutions within.™

HPLC Analysis of Mephenytoin Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) hexane; (B) ethanol; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in mobile phase
Application No. G004471

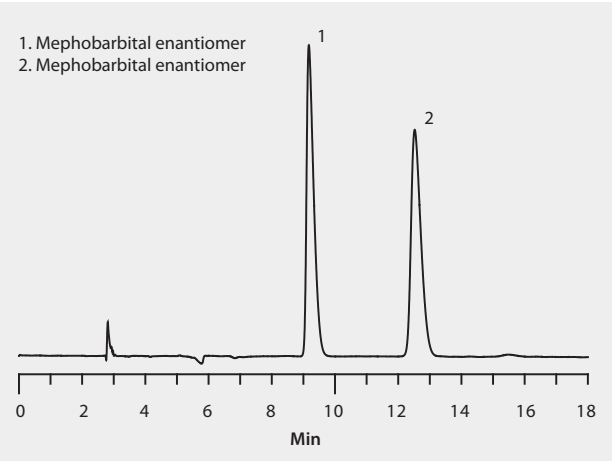


SUPELCO
Solutions within.™

HPLC Analysis of Mephobarbital Enantiomers on Astec® Cellulose DMP

Mephobarbital enantiomers are resolved by normal phase chromatography. Mephobarbital (aka methyphenobarbital) is used as a sedative, anxiolytic and anticonvulsant. It is the N-methylated analogue of phenobarbital, and has similiar indications, therapeutic value, and tolerability.

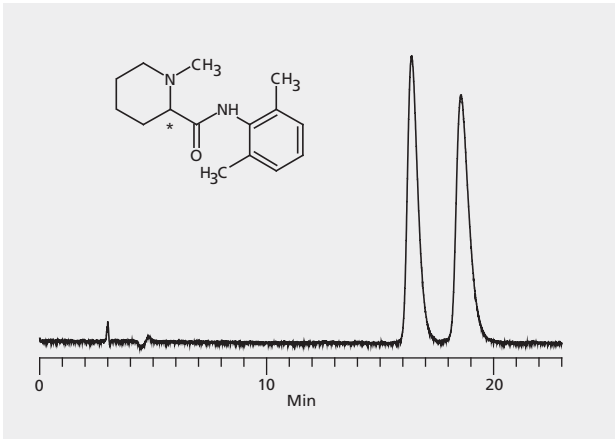
column . . Astec Cellulose DMP; 25 cm x 4.6 mm I.D., 5 µm particles (51099AST)
mobile phase . . . . . (A) heptane; (B) isopropanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
detector . . . . . UV, 254 nm
injection . . . . . 15 µL
sample . . . . . mephobarbital, 1 g/L in 50:50, heptane:isopropanol
Application No. G005519



SUPELCO® Solutions within.™

HPLC Analysis of Mepivacaine Enantiomers on Astec® CHIROBIOTIC® V2

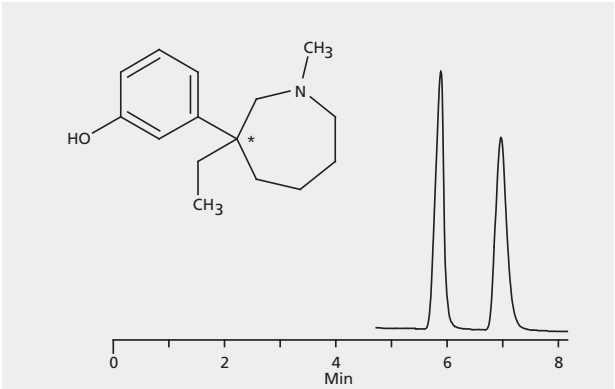
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) methanol; (B) 20 mM ammonium acetate, pH 4.1; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004466



SUPELCO
Solutions within.™

HPLC Analysis of Meptazinol Enantiomers on Astec® CHIROBIOTIC® V2

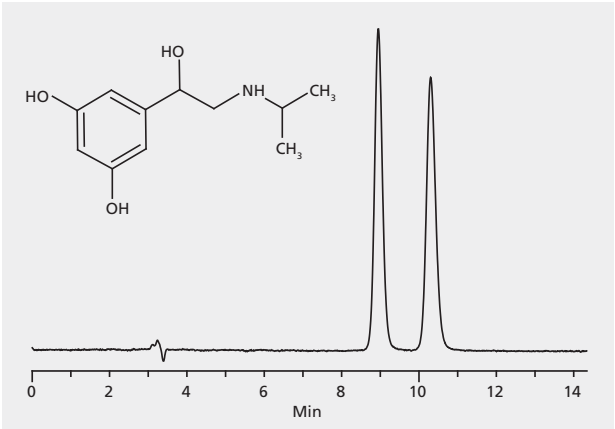
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004660



SUPELCO
Solutions within.™

HPLC Analysis of Metaproterenol Enantiomers on Astec® CHIROBIOTIC® T

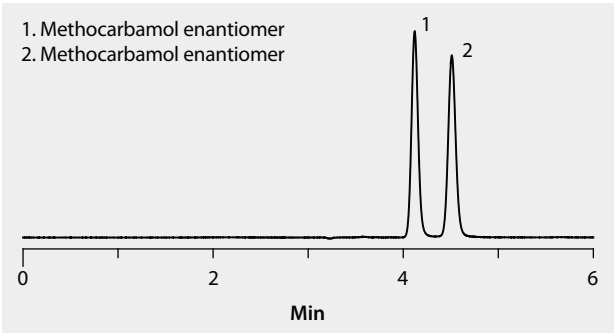
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
sample . . . . . 1 mg/mL in mobile phase
Application No. G004406



SUPELCO®
Solutions within.™

HPLC Analysis of Methocarbamol (Guaiacol Glyceryl Ether Carbamate) Enantiomers on Astec® Cellulose DMP

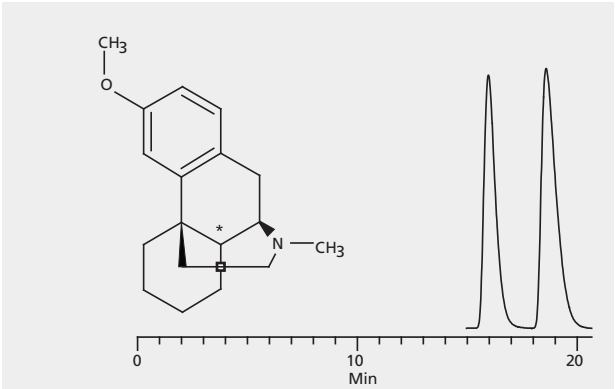
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) ammonium formate; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005372



SUPELCO® Solutions within.™

HPLC Analysis of Methorphan Enantiomers on Astec® CHIROBIOTIC® V2

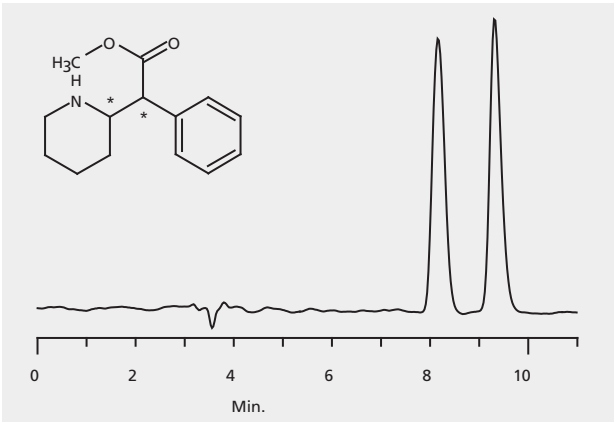
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 0.05 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004659



SUPELCO
Solutions within.™

HPLC Analysis of Methylphenidate Enantiomers on Astec® CHIROBIOTIC® V

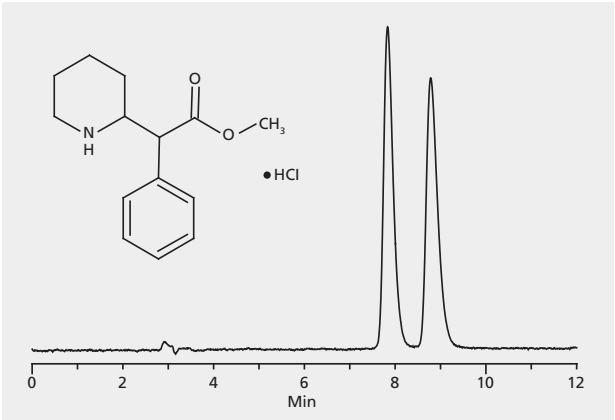
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) methanol; (B) 1% triethylamine, pH 4/1; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004505



SUPELCO® Solutions within.™

HPLC Analysis of Methylphenidate (Ritalin) Enantiomers on Astec® CHIROBIOTIC® T2

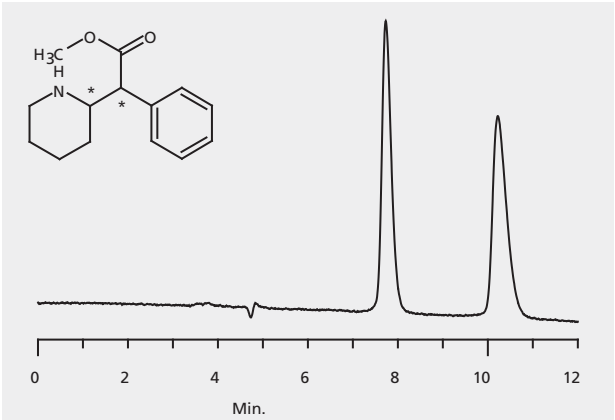
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . methylphenidate, 1 mg/mL in mobile phase
Application No. G004405



SUPELCO® Solutions within.™

HPLC Analysis of Methylphenidate (Ritalin) Enantiomers on Astec® CHIROBIOTIC® V2

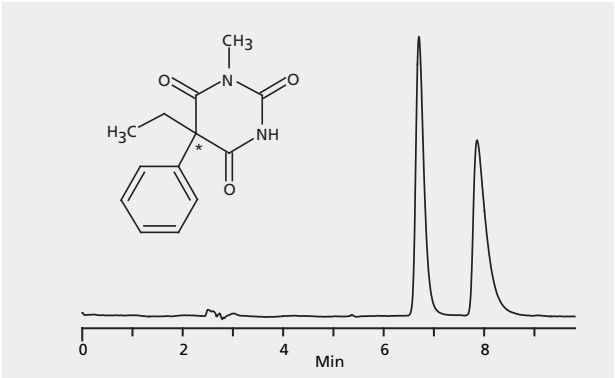
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 15 mM ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 215 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004504



SUPELCO® Solutions within.™

HPLC Analysis of Methylphenobarbital (Mephobarbital) Enantiomers on Astec® CHIROBIOTIC® V

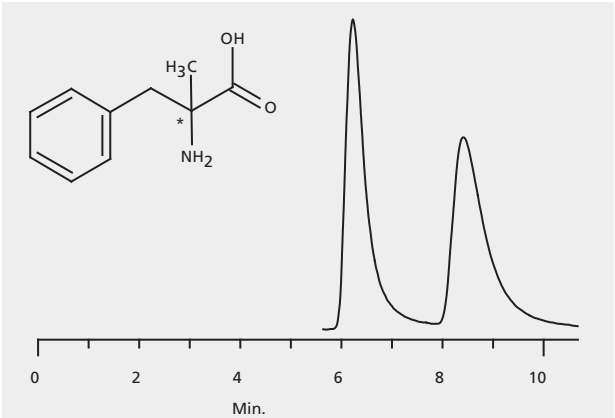
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) ethanol; (B) hexane; (25:75, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 205 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004631



SUPELCO® Solutions within.™

HPLC Analysis of α-Methyl Phenylalanine Enantiomers on Astec® CHIROBIOTIC® T

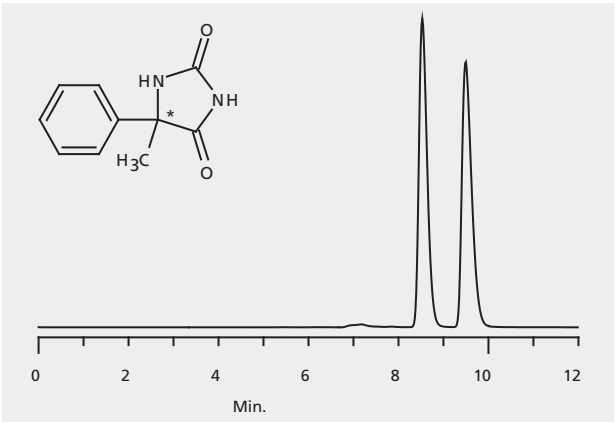
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004590



SUPELCO® Solutions within.™

HPLC Analysis of 5-Methyl-5-Phenylhydantoin Enantiomers on Astec® CHIROBIOTIC® V2

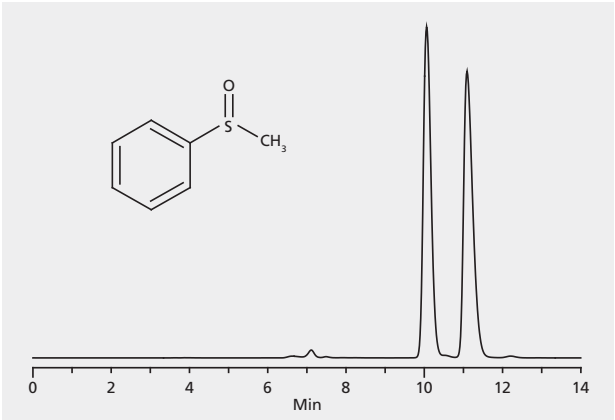
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . methanol
flow rate . . . . . 0.48 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004477



SUPELCO® Solutions within.™

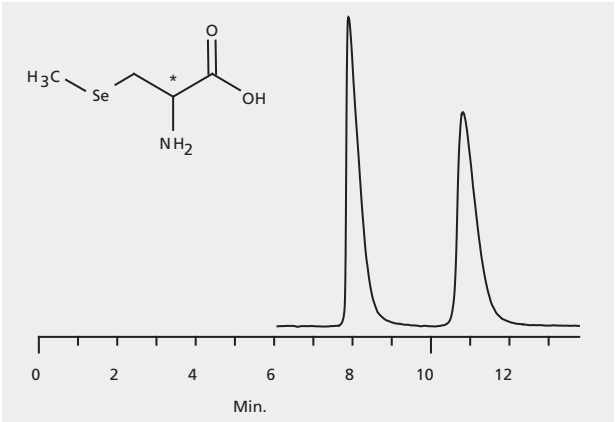
HPLC Analysis of Methyl Phenyl Sulfoxide Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . methanol
flow rate . . . . . 0.48 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in mobile phase
Application No. G004407



HPLC Analysis of Methylselenocysteine Enantiomers on Astec® CHIROBIOTIC® TAG

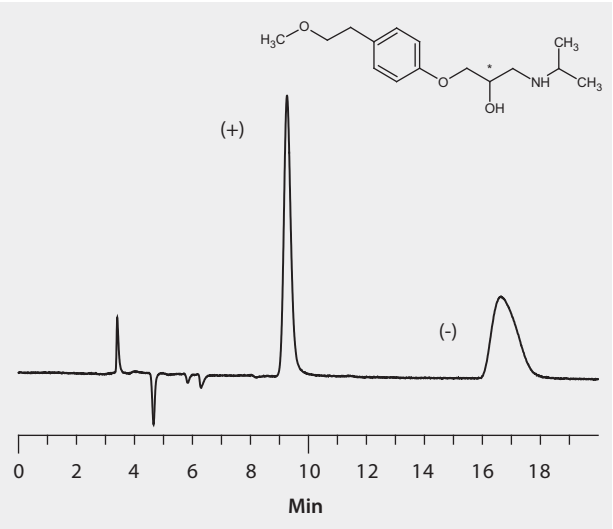
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . (A) water; (B) acetonitrile; (30:70, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV at 230 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004615



SUPELCO® Solutions within.™

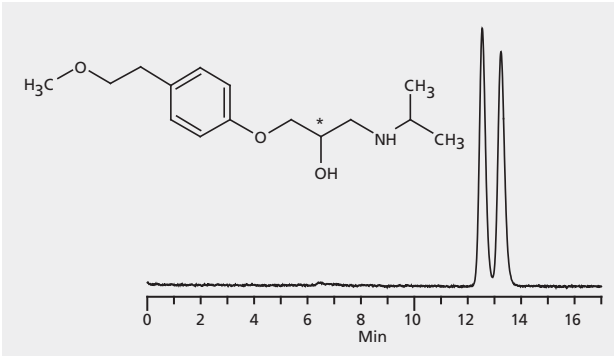
HPLC Analysis of Metoprolol Enantiomers on Astec® Cellulose DMP

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) DEA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004991



HPLC Analysis of Metoprolol Enantiomers on Astec® CHIROBIOTIC® V

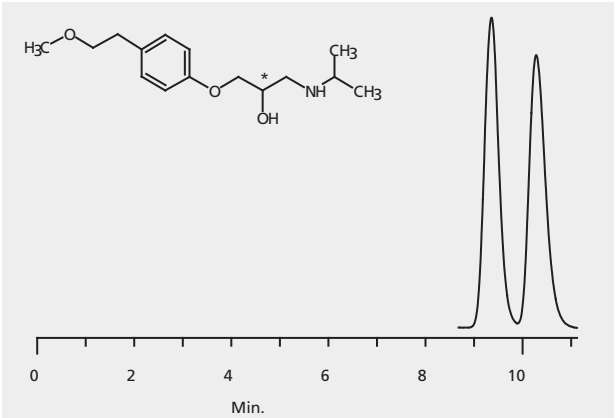
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.8:0.1:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 225 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004632



SUPELCO
Solutions within.™

HPLC Analysis of Metoprolol Enantiomers on Astec® CHIROBIOTIC® T2

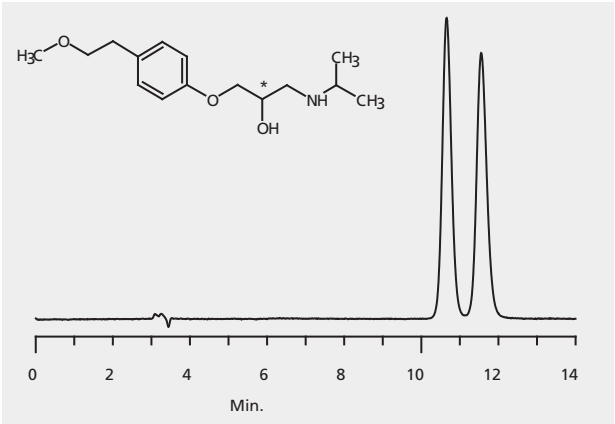
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . 0.1 wt% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004597



SUPELCO® Solutions within.™

HPLC Analysis of Metoprolol Enantiomers on Astec® CHIROBIOTIC® T2 (MS Mobile Phase)

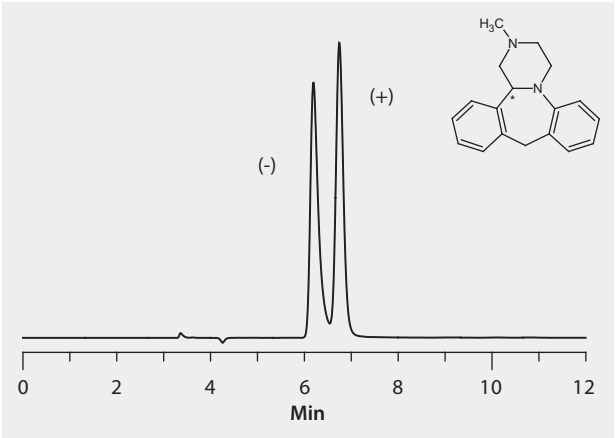
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample gas . . . . . 1 mg/mL in methanol
Application No. G004484



SUPELCO® Solutions within.™

HPLC Analysis of Mianserin Enantiomers on Astec® Cellulose DMP

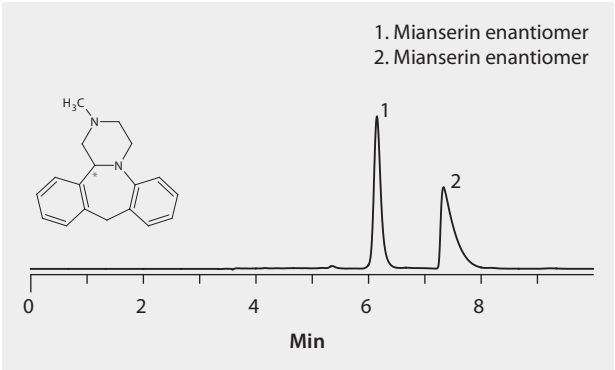
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) DEA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004993



SUPELCO® Solutions within.™

HPLC Analysis of Mianserin Enantiomers on Astec® Cellulose DMP, LC/MS Conditions

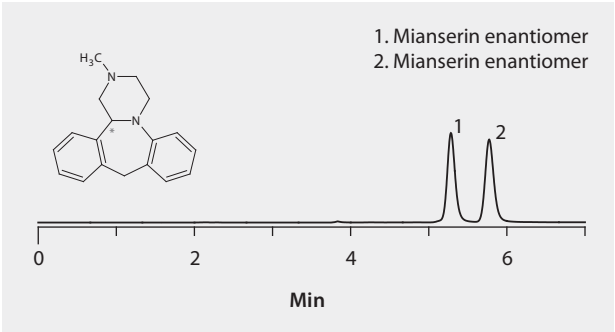
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) ammonium formate; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005003



SUPELCO®
Solutions within.™

HPLC Analysis of Mianserin Enantiomers on Astec® Cellulose DMP (No Additives)

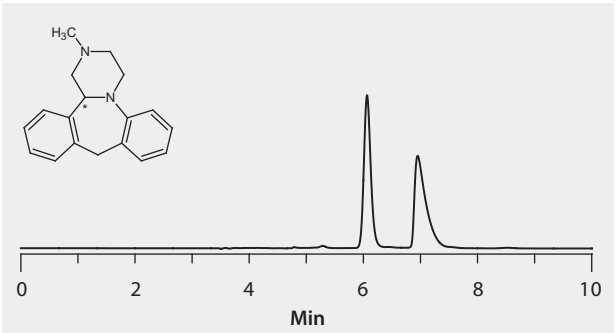
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) acetonitrile; (100, A)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005006



SUPELCO® Solutions within.™

HPLC Analysis of Mianserin Enantiomers on Astec® Cellulose DMP, POM Conditions

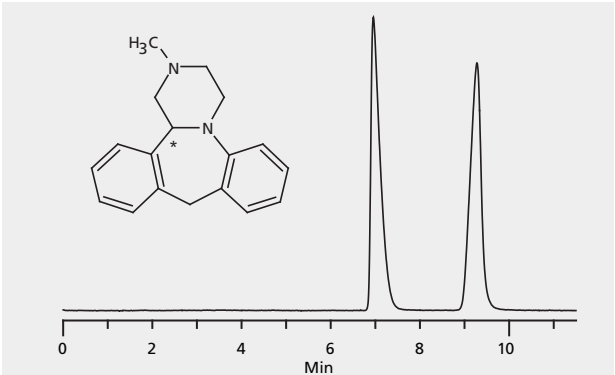
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) DEA; (100:0.1, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
inj. temp. . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004992



SUPELCO®
Solutions within.™

HPLC Analysis of Mianserin Enantiomers on Astec® CHIROBIOTIC® V

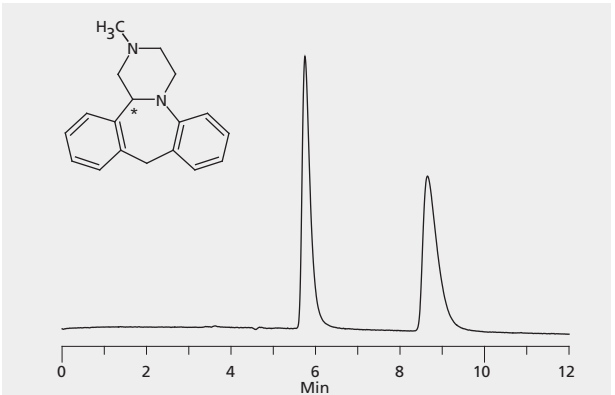
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.8:0.1:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 29 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004633



SUPELCO®
Solutions within.™

HPLC Analysis of Mianserin Enantiomers on Astec® CHIROBIOTIC® V2

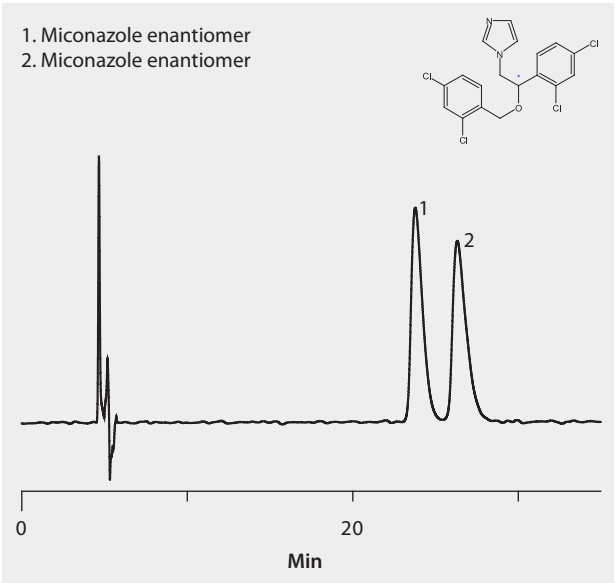
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 15 mM ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004469



SUPELCO®
Solutions within.™

HPLC Analysis of Miconazole Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

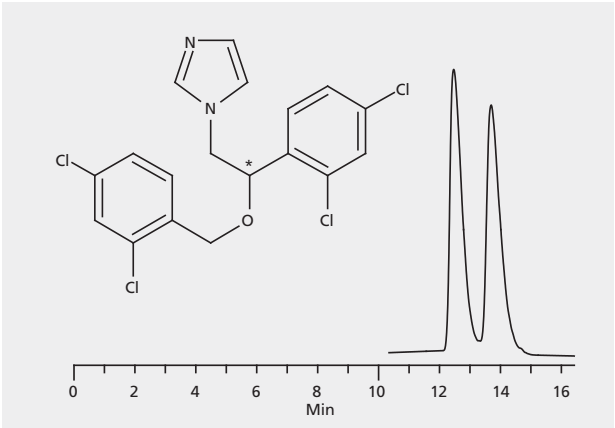
column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . (A) acetonitrile; (B) 20 mM ammonium acetate, pH 4.0; (25:75, A:B)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . miconazole, 1 mg/mL in acetonitrile:water (50:50)
Application No. G005164



SUPELCO® Solutions within.™

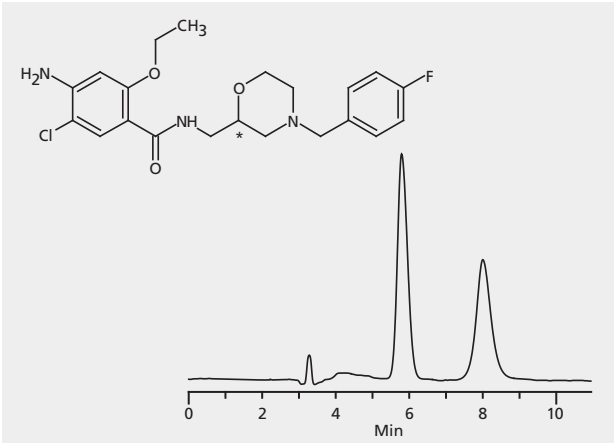
HPLC Analysis of Miconazole Enantiomers on Astec® CYCLOBOND® I 2000 RSP

column . . CYCLOBOND I 2000 RSP, 25 cm x 4.6 mm I.D., 5 µm particles (20324AST)
mobile phase . . (A) 1% triethylamine acetate, pH 4.1; (B) acetonitrile; (80:20, A:B)
flow rate . . . . . 2 mL/min
column temp. . . . . ambient
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004706



HPLC Analysis of Mosapride Enantiomers on Astec® CHIROBIOTIC® V

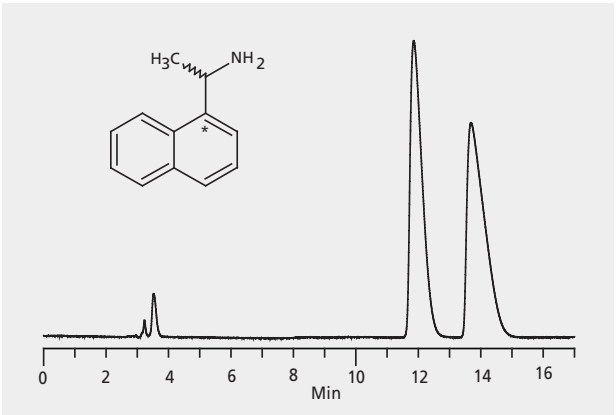
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 20 mM ammonium nitrate, pH 5.5; (B) THF; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 3 mg/mL in methanol
Application No. G004650



SUPELCO®
Solutions within.™

HPLC Analysis of 1-(1-Naphthyl)ethylamine Enantiomers on Astec® CHIROBIOTIC® V2

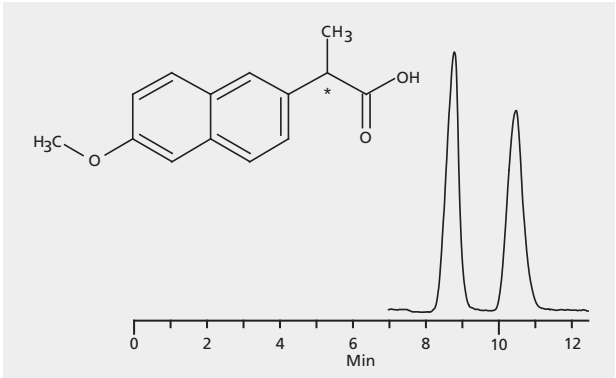
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . (A) methanol; (B) 20 mM ammonium acetate; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 1 mgl/mL in methanol
Application No. G004458



SUPELCO
Solutions within.™

HPLC Analysis of Naproxen Enantiomers on Astec® CHIROBIOTIC® V

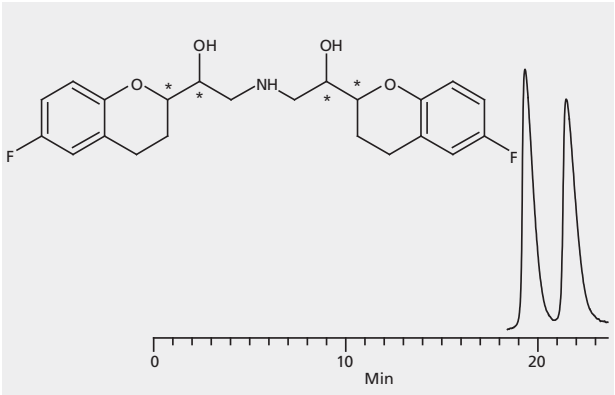
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 0.1% triethylamine, pH 7.0; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004644



SUPELCO® Solutions within.™

HPLC Analysis of Nebivolol Enantiomers on Astec® CHIROBIOTIC® V2

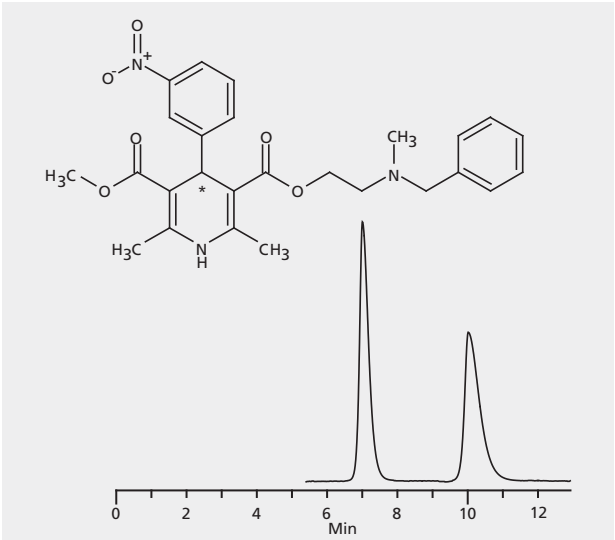
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 0.05% ammonium trifluoroacetic acid in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 0.5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004658



SUPELCO® Solutions within.™

HPLC Analysis of Nicardipine Enantiomers on Astec® CHIROBIOTIC® V

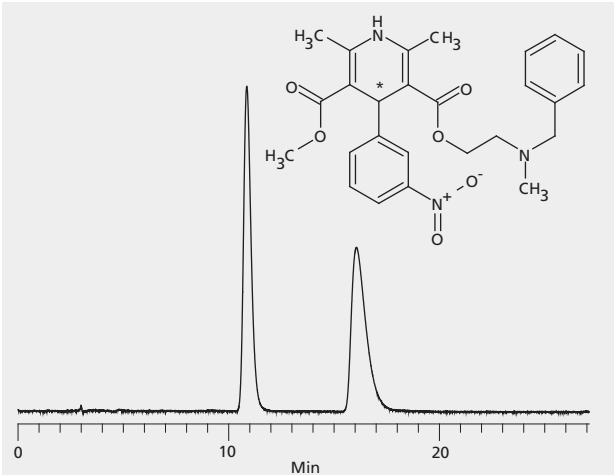
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) triethylamine; (100:0.02:0.01, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004654



SUPELCO
Solutions within.™

HPLC Analysis of Nicardipine Enantiomers on Astec® CHIROBIOTIC® V2

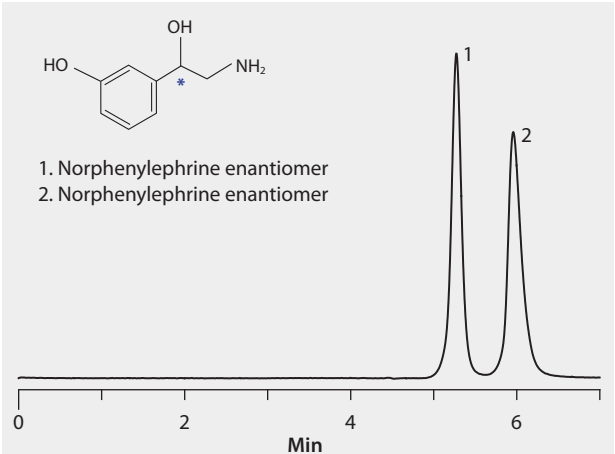
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) methanol; (B) 20 mM ammonium acetate, pH 4.1; (95:5, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004470



SUPELCO® Solutions within.™

HPLC Analysis of Norphenylephrine Enantiomers on Astec® CYCLOBOND® I 2000 AC (pH 5.0)

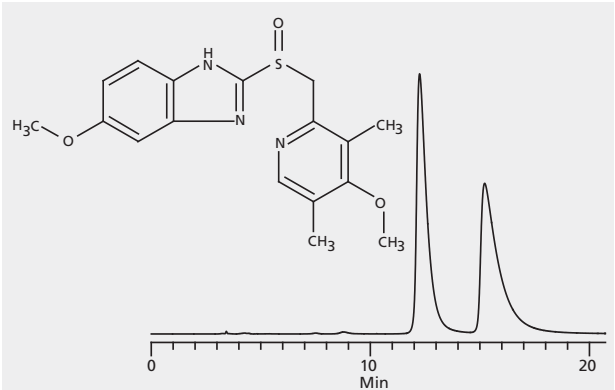
column . . CYCLOBOND I 2000 AC, 25 cm x 4.6 mm I.D., 5 µm particles (20124AST)
mobile phase . . (A) methanol; (B) 20 mM ammonium acetate, pH 5.0; (5:95, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . norphenylephrine, 1 mg/mL in acetonitrile:water (50:50)
Application No. G005159



SUPELCO® Solutions within.™

HPLC Analysis of Omeprazole Enantiomers on Astec® CYCLOBOND® I 2000 DMP

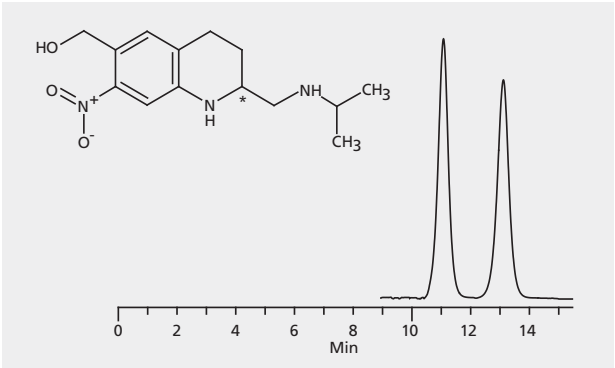
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . . . . (A) acetonitrile; (B) acetic acid; (C) ammonium hydroxide; (100:0.4:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 302 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004685



SUPELCO
Solutions within.™

HPLC Analysis of Oxamniquine Enantiomers on Astec® CHIROBIOTIC® V2

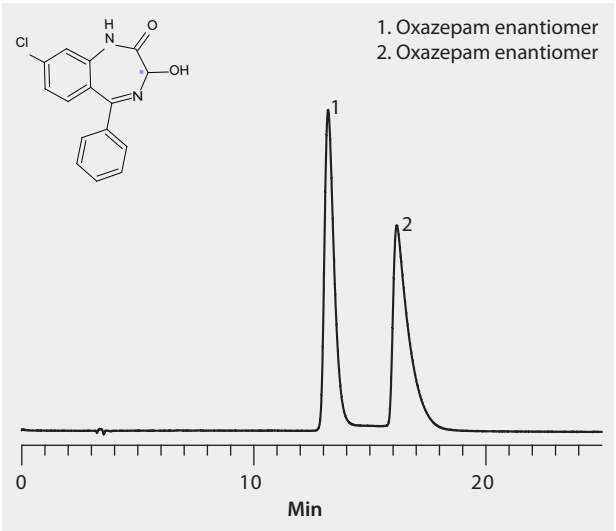
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004656



SUPELCO
Solutions within.™

HPLC Analysis of Oxazepam Enantiomers on Astec® CYCLOBOND® I 2000 DNP

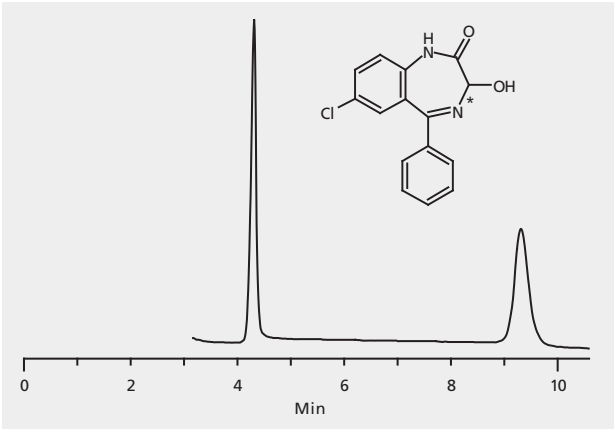
column . . CYCLOBOND I 2000 DNP, 25 cm x 4.6 mm I.D., 5 µm particles (25024AST)
mobile phase . . . . . (A) acetonitrile; (B) 20 mM ammonium phosphate, pH 2.9; (20:80, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 5 °C
detector . . . . . UV, 254 nm
injection . . . . . 3 µL
sample . . . . . oxazepam, 1 mg/mL in acetonitrile:water (50:50)
Application No. G005162



SUPELCO® Solutions within.™

HPLC Analysis of Oxazepam Enantiomers on Astec® CHIROBIOTIC® T

column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 1 µL
sample gas . . . . . 1 mg/mL in methanol
Application No. G004545

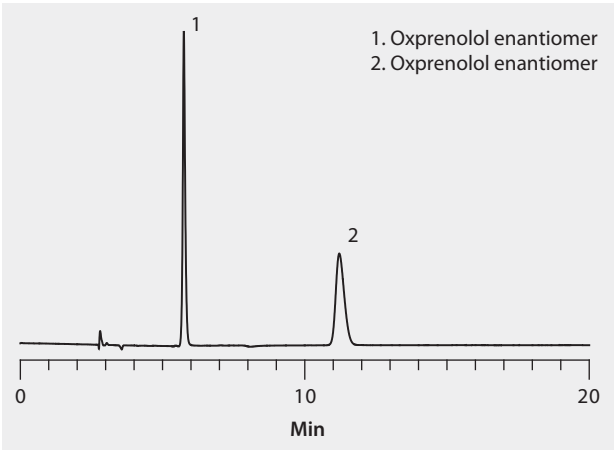


SUPELCO® Solutions within.™

HPLC Analysis of Oxprenolol Enantiomers on Astec® Cellulose DMP

Oxprenolol enantiomers are resolved by normal phase chromatography. Oxprenolol is a nonselective beta-blocker and is used to treat angina and hypertension.

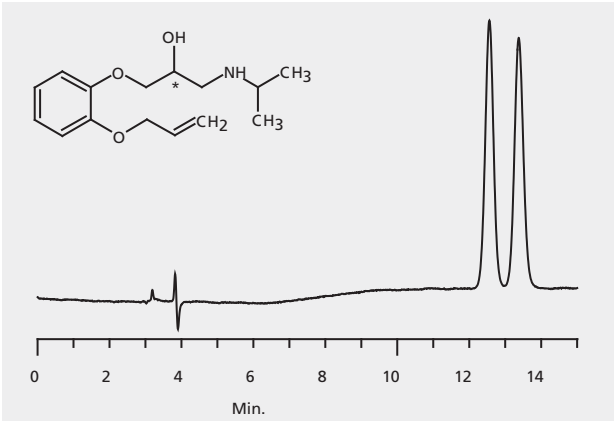
column . . Astec Cellulose DMP, 25 cm x 4.6 mm I.D., 5 µm particles (51099AST)
mobile phase . . (A) heptane; (B) isopropanol; (C) diethylamine; (80:20:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
detector . . . . . UV, 254 nm
injection . . . . . 15 µL
sample . . . . . oxprenolol, 1 g/L in 50:50 heptane:isopropanol
Application No. G005522



SUPELCO® Solutions within.™

HPLC Analysis of Oxprenolol Enantiomers on Astec® CHIROBIOTIC® T

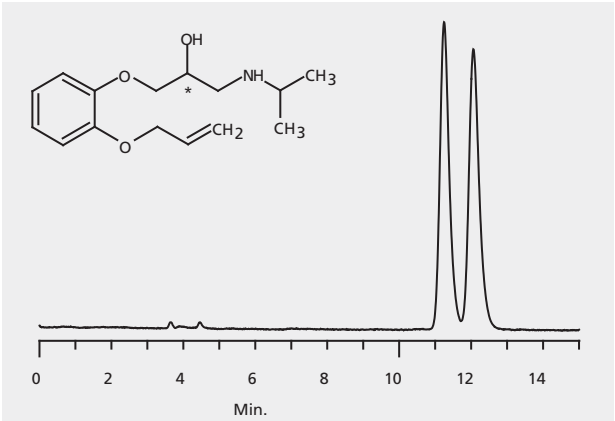
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) triethylamine; (54.5:45:0.3:0.2, A:B:C:D)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004507



SUPELCO® Solutions within.™

HPLC Analysis of Oxprenolol Enantiomers on Astec® CHIROBIOTIC® T2

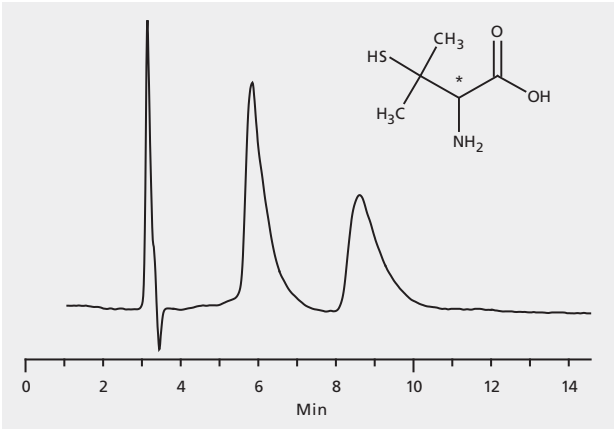
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . . . . 5 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004480



SUPELCO® Solutions within.™

HPLC Analysis of Penicillamine Enantiomers on Astec® CHIROBIOTIC® T

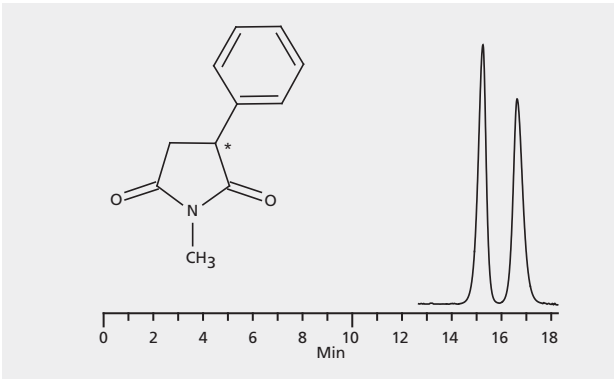
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) 0.1% triethylamine acetate, pH 3.8; (B) ethanol; (20:80, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
injection . . . . . 5 µL
detector . . . . . UV, 225 nm
sample . . . . . 5 mg/mL in methanol
Application No. G004549



SUPELCO
Solutions within.™

HPLC Analysis of Phensuximide Enantiomers on Astec® CHIROBIOTIC® V

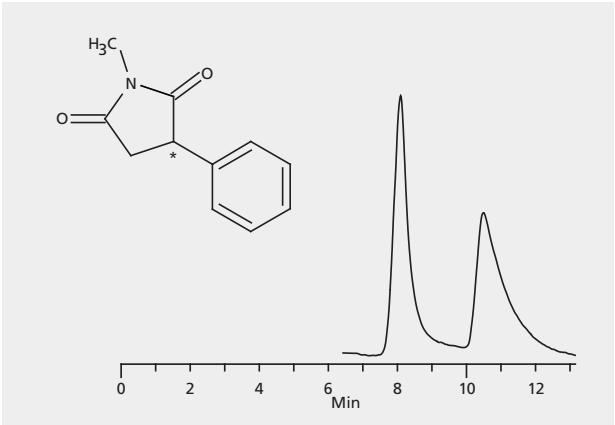
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) hexane; (B) ethanol; (70:30, A:B)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 4 mg/mL in methanol
Application No. G004645



SUPELCO®
Solutions within.™

HPLC Analysis of Phensuximide Enantiomers on Astec® CYCLOBOND® I 2000 DMP

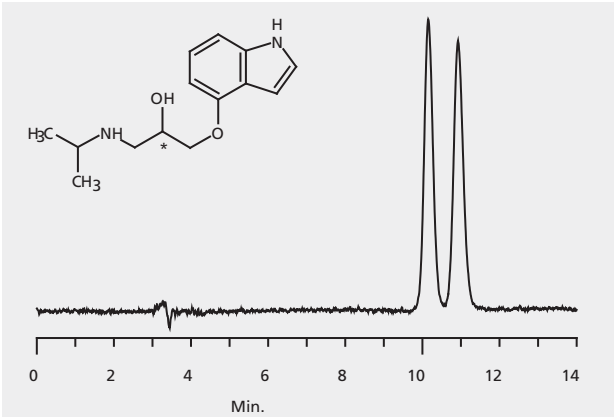
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . . . . (A) isopropanol; (B) hexane; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 4 mg/mL in methanol
Application No. G004699



SUPELCO
Solutions within.™

HPLC Analysis of Pindolol Enantiomers on Astec® CHIROBIOTIC® T

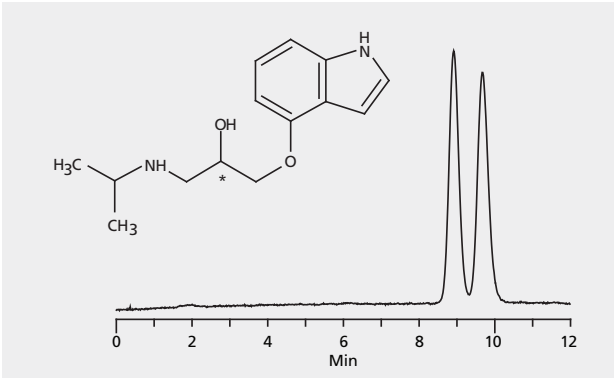
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample gas . . . . . 1 mg/mL in methanol
Application No. G004509



SUPELCO® Solutions within.™

HPLC Analysis of Pindolol Enantiomers on Astec® CHIROBIOTIC® V

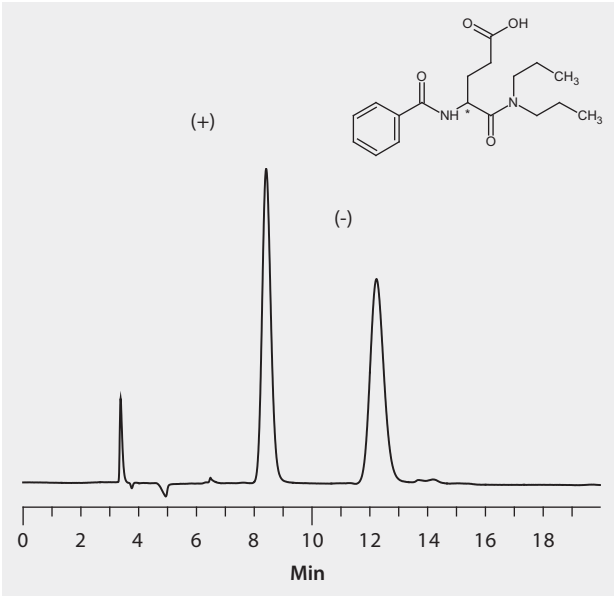
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.98:0.01:0.01, A:B:C)
flow rate . . . . . 2 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004634



SUPELCO® Solutions within.™

HPLC Analysis of Proglumide Enantiomers on Astec® Cellulose DMP

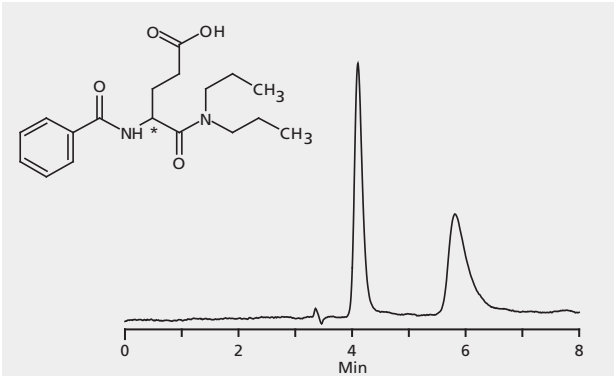
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) IPA; (C) TFA; (90:10:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G004994



SUPELCO
Solutions within.™

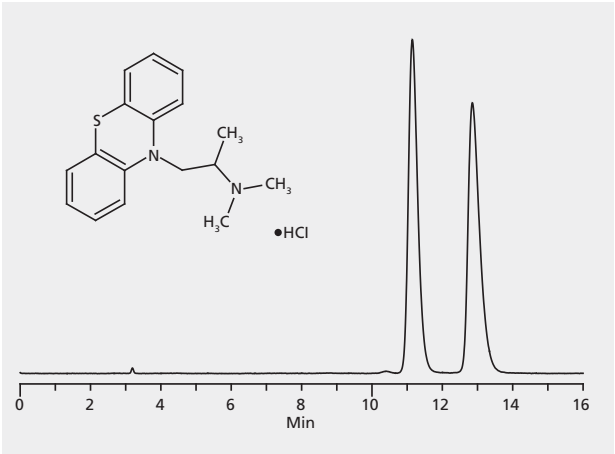
HPLC Analysis of Proglumide Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 13 mM ammonium acetate; (B) acetonitrile; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 225 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004635



HPLC Analysis of Promethazine Enantiomers on Astec® CHIROBIOTIC® V

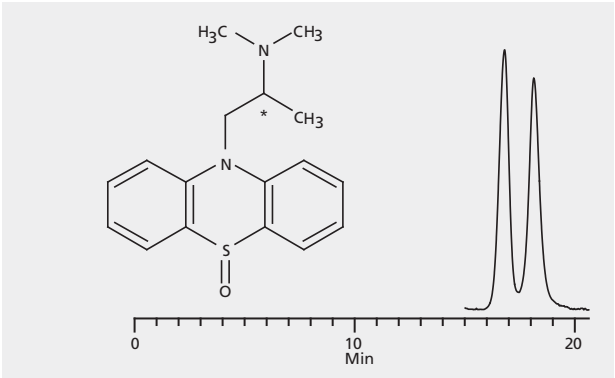
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.8:0.1:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in mobile phase
Application No. G004404



SUPELCO® Solutions within.™

HPLC Analysis of Promethazine Sulfoxide Enantiomers on Astec® CHIROBIOTIC® V

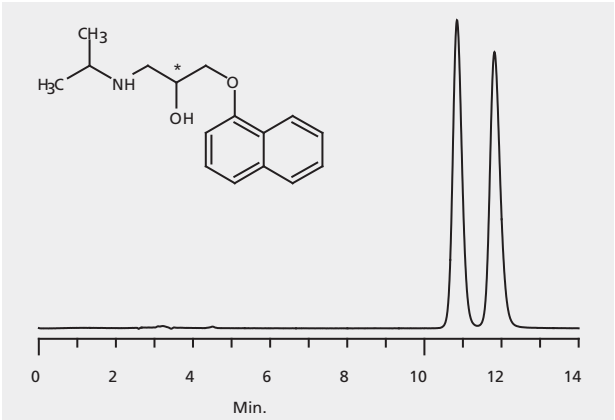
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (100:0.1:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 240 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004646



SUPELCO
Solutions within.™

HPLC Analysis of Propranolol Enantiomers on Astec® CHIROBIOTIC® T

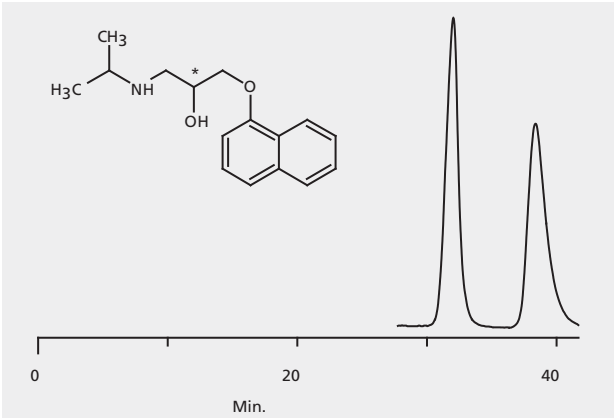
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004510



SUPELCO
Solutions within.™

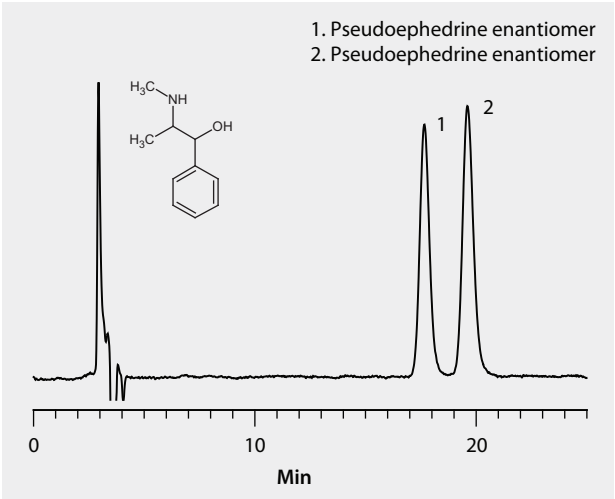
HPLC Analysis of Propranolol Enantiomers on Astec® CHIROBIOTIC® TAG

column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . . . . 0.1 wt% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 0.5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004616



HPLC Analysis of Pseudoephedrine Enantiomers on Astec® CHIROBIOTIC® TAG

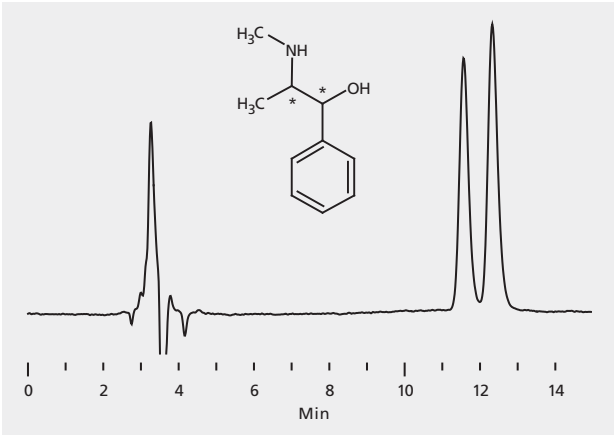
column . . . . CHIROBIOTIC TAG, 25 cm x 4.6 mm I.D., 5 µm particles (14024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine;(99.8:0.1:0.1, A:B:C)
flow rate . . . . . 1 mL/min
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 200 µg/mL in methanol
column temp. . . . . 25 °C
Application No. G005350



SUPELCO® Solutions within.™

HPLC Analysis of Pseudoephedrine Enantiomers on Astec® CHIROBIOTIC® T

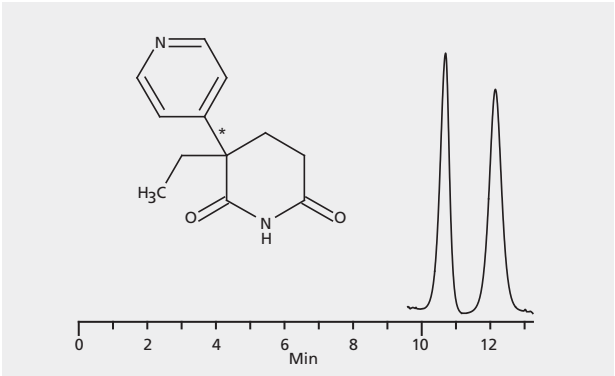
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (100:0.1:0.1, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004530



SUPELCO® Solutions within.™

HPLC Analysis of Pyroglutethimide Enantiomers on Astec® CHIROBIOTIC® V

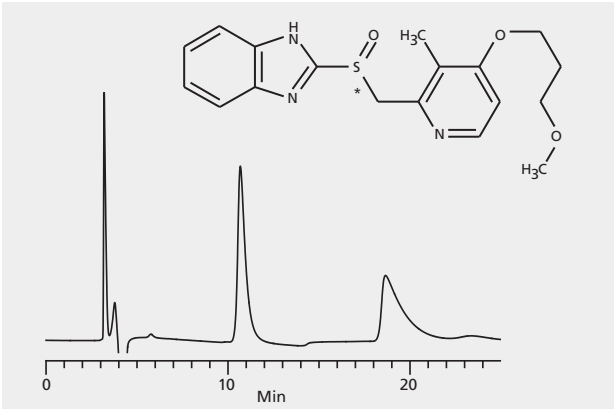
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) 0.1% triethylamine acetate, pH 7.0; (B) acetonitrile; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 3 µL
sample . . . . . 2 mg/mL in methanol
Application No. G004647



SUPELCO
Solutions within.™

HPLC Analysis of Rabeprazole Enantiomers on Astec® CYCLOBOND® I 2000 DMP

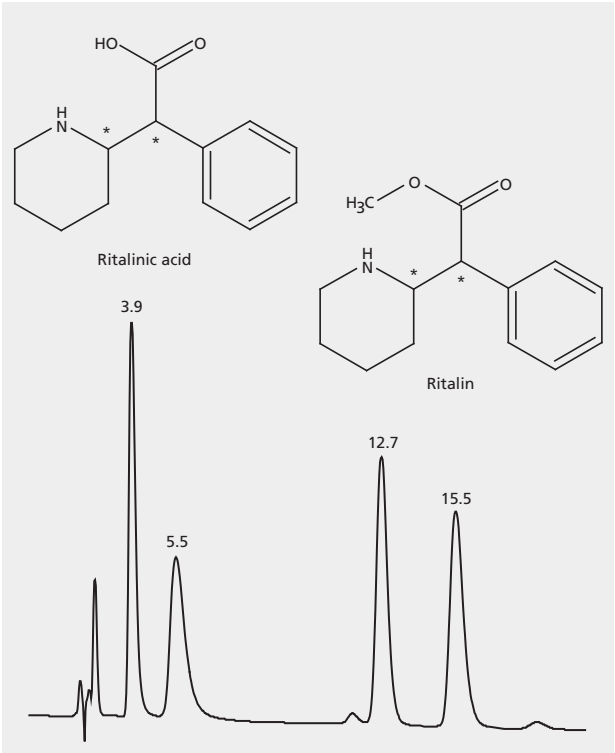
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (C) acetic acid; (D) ammonium hydroxide; (95:5:0.4:0.1, A:B:C:D)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004686



SUPELCO®
Solutions within.™

HPLC Analysis of Ritalinic Acid and Ritalin (Methylphenidate) Enantiomers on Astec® CHIROBIOTIC® V2 with T2 Guard Column

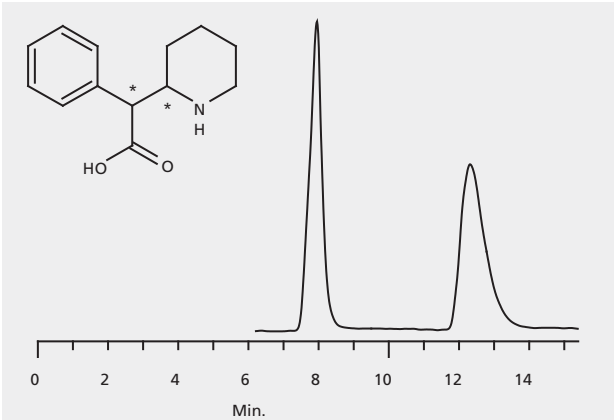
column . . . . . CHIROBIOTIC V2, 15 cm x 4.6 mm I.D., 5 µm particles (15023AST)
column . . . . . CHIROBIOTIC T2 guard column, 2 cm x 4 mm I.D., 5 µm particles (16100AST (requires holder 21150AST))
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) methanol; (7:93, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004733



SUPELCO
Solutions within.™

HPLC Analysis of Ritalinic Acid Enantiomers on Astec® CHIROBIOTIC® T2

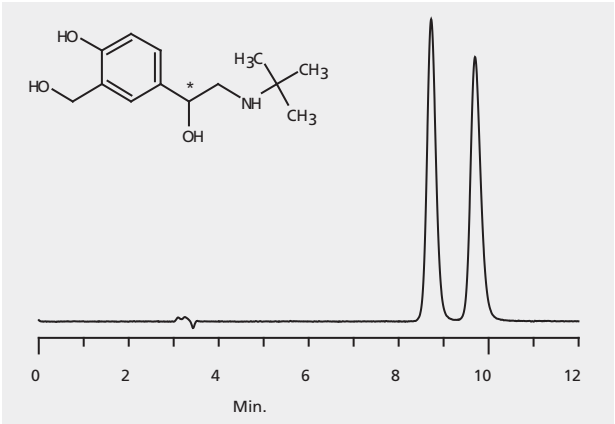
column . . . . . CHIROBIOTIC T2, 25 cm x 4.6 mm I.D., 5 µm particles (16024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 5.5; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 0.9 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004600



SUPELCO
Solutions within.™

HPLC Analysis of Salbutamol Enantiomers on Astec® CHIROBIOTIC® T

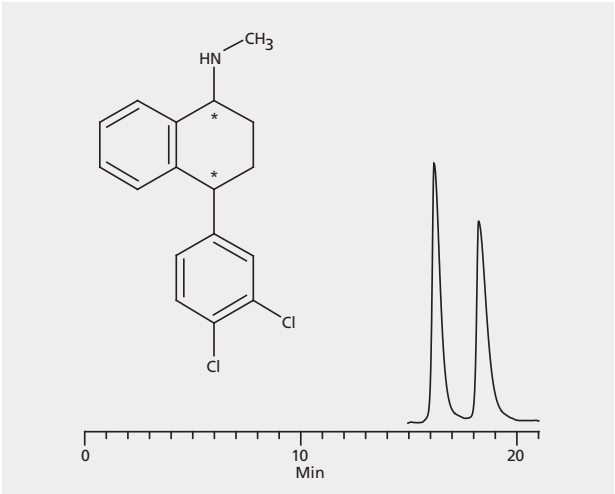
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004512



SUPELCO® Solutions within.™

HPLC Analysis of Sertraline Enantiomers on Astec® CYCLOBOND® I 2000 RSP

column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . (A) 20 mM ammonium acetate, pH 4.1; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004705

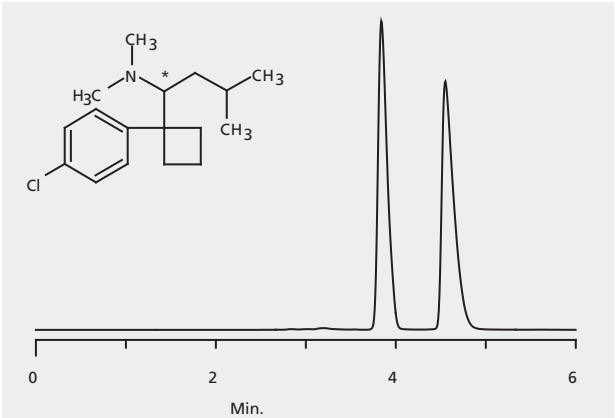


SUPELCO®
Solutions within.™

HPLC Analysis of Sibutramine Enantiomers on Astec® CHIROBIOTIC® V

Sibutramine, one of a few drugs approved for long-term treatment of obesity, is a chiral compound. The (R) enantiomer has the desired effect of reducing body weight and food intake, but the (S) enantiomer has the opposite effect: A perfect example of why chiral HPLC is important to pharmaceutical and clinical analysts. Astec® CHIROBIOTIC® V successfully separates sibutramine enantiomers, using a simple, MS-friendly mobile phase.

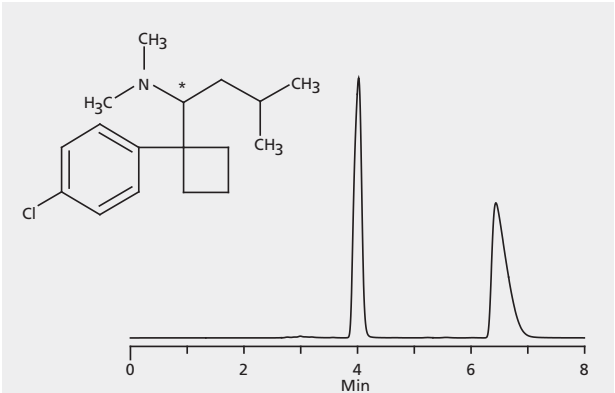
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004479



HPLC Analysis of Sibutramine Enantiomers on Astec® CHIROBIOTIC® V2

Sibutramine, one of a few drugs approved for long-term treatment of obesity, is a chiral compound. The (R) enantiomer has the desired effect of reducing body weight and food intake, but the (S) enantiomer has the opposite effect: A perfect example of why chiral HPLC is important to pharmaceutical and clinical analysts. Astec® CHIROBIOTIC® V2 successfully separates sibutramine enantiomers, using a simple, MS-friendly mobile phase.

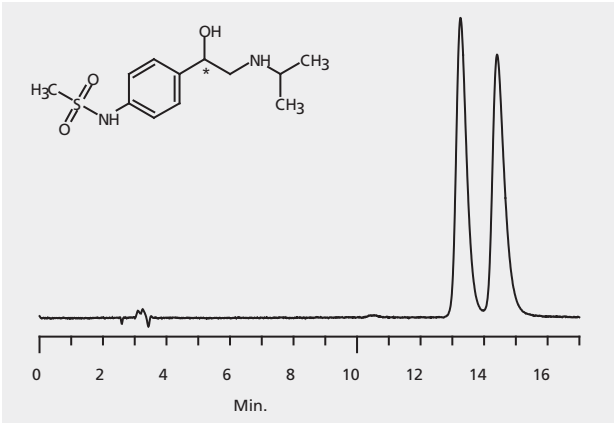
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004661



SUPELCO
Solutions within.™

HPLC Analysis of Sotalol Enantiomers on Astec® CHIROBIOTIC® T

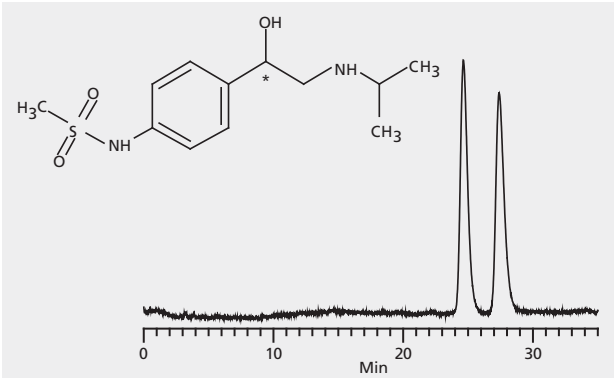
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004514



SUPELCO® Solutions within.™

HPLC Analysis of Sotalol Enantiomers on Astec® CHIROBIOTIC® V

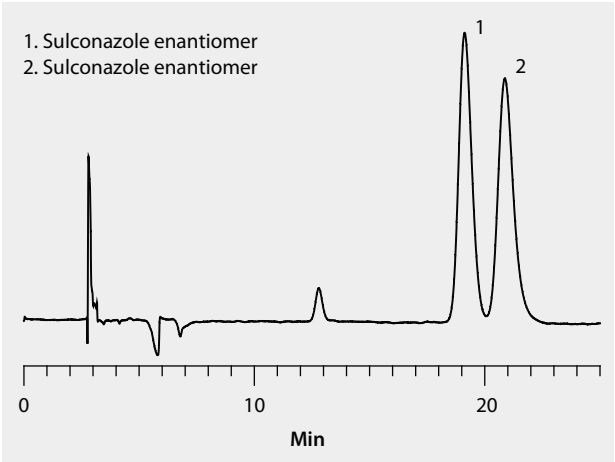
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) triethylamine; (99.98:0.01:0.01, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004636



SUPELCO® Solutions within.™

HPLC Analysis of Sulconazole Enantiomers on Astec® Cellulose DMP

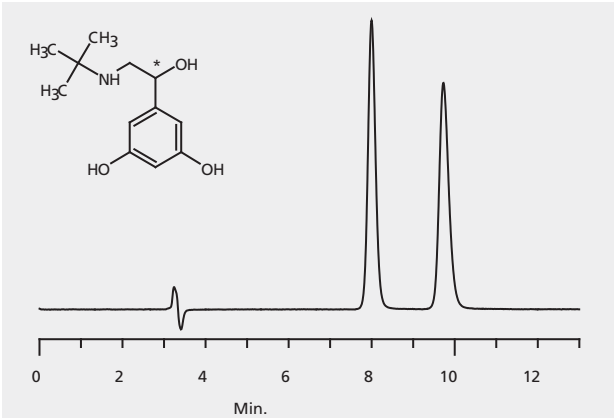
column . . Astec Cellulose DMP, 25 cm x 4.6 mm I.D., 5 µm particles (51099AST)
mobile phase . . . . . (A) heptane; (B) isopropanol; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 30 °C
detector . . . . . UV, 254 nm
injection . . . . . 15 µL
sample . . . . . 1 g/L in 50:50, heptane:isopropanol
Application No. G005468



SUPELCO
Solutions within.™

HPLC Analysis of Terbutaline Enantiomers on Astec® CHIROBIOTIC® T

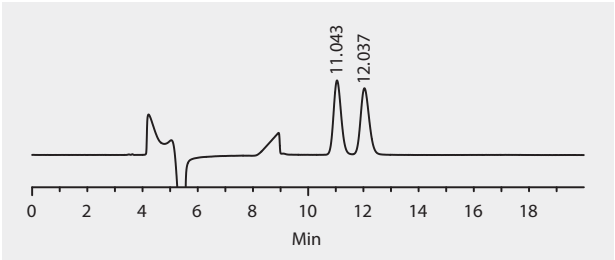
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . . . 15 mM ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004515



SUPELCO® Solutions within.™

HPLC Analysis of Terfenadine Enantiomers on Astec® Cellulose DMP

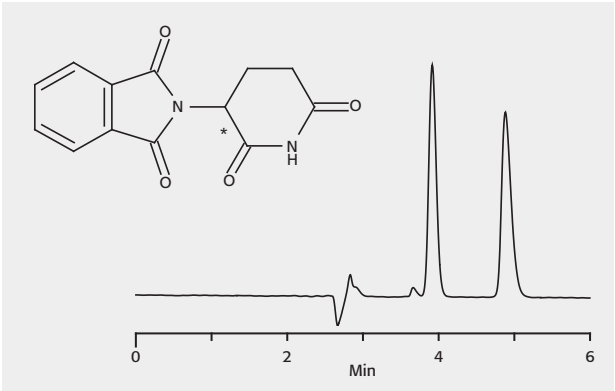
column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) heptane; (B) ethanol; (C) diethylamine; (98:2:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 40 °C
detector . . . . . UV, 230 nm
injection . . . . . 3 µL
sample . . . . . 1 g/L in methanol
Application No. G005465



SUPELCO
Solutions within.™

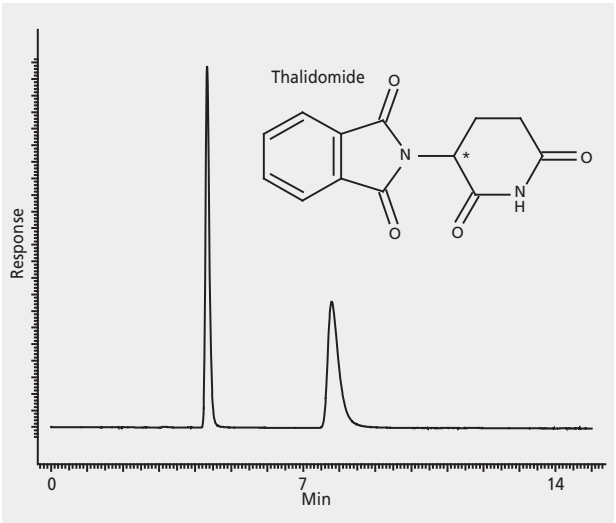
HPLC Analysis of Thalidomide Enantiomers on Astec® CHIROBIOTIC® V

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) 18 mM ammonium nitrate, pH 5.5; (B) acetonitrile; (65:35, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 22 °C
detector . . . . . UV, 240 nm
injection . . . . . 20 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004653



HPLC Analysis of Thalidomide Enantiomers on Astec® CHIROBIOTIC® V2

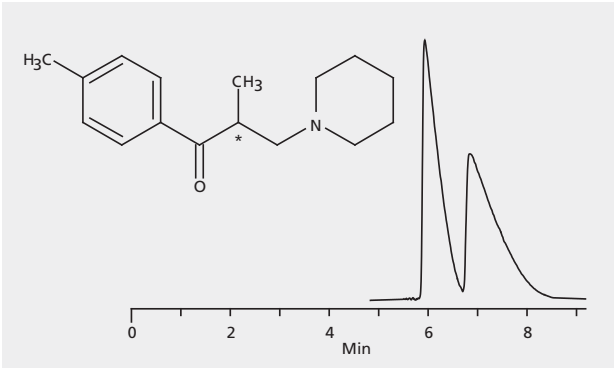
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 µL
detector . . . . . UV, 230 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004473



SUPELCO® Solutions within.™

HPLC Analysis of Tolperisone Enantiomers on Astec® CHIROBIOTIC® V2

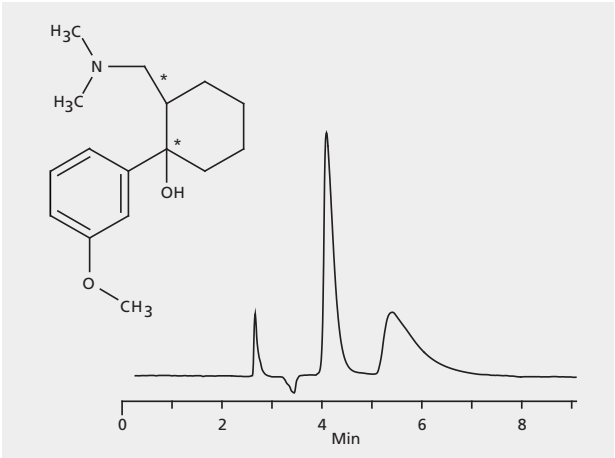
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 0.1% ammonium formate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004657



SUPELCO
Solutions within.™

HPLC Analysis of Tramadol Enantiomers on Astec® CYCLOBOND® I 2000 DMP

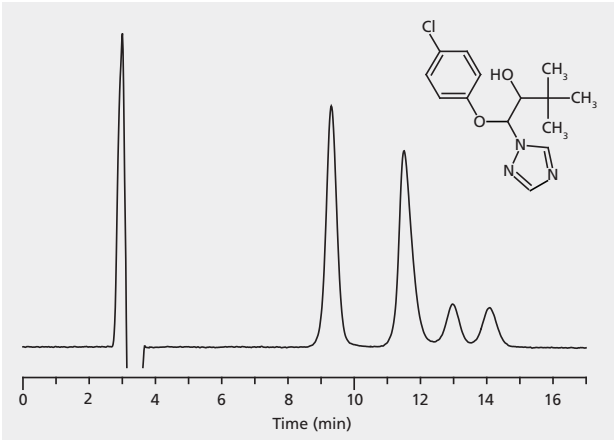
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . (A) 0.1% triethylamine acetate, pH 5.0; (B) acetonitrile; (80:20, A:B)
flow rate . . . . . 1.2 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004700



SUPELCO®
Solutions within.™

HPLC Analysis of Triadimenol Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

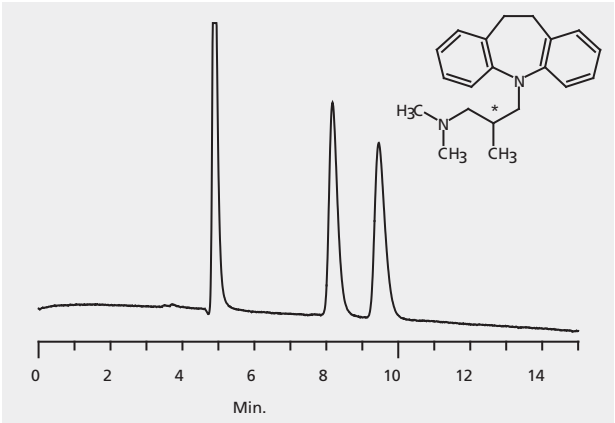
column	CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase	(A) 20 mM ammonium acetate, pH 4.0; (B) acetonitrile; (70:30, A:B)
flow rate	1 mL/min
column temp.	25 °C
detector	UV, 220 nm
injection	10 µL
sample	1 mg/mL in methanol
Application No.	G004396



SUPELCO®
Solutions within.™

HPLC Analysis of Trimipramine Enantiomers on Astec® CHIROBIOTIC® V2

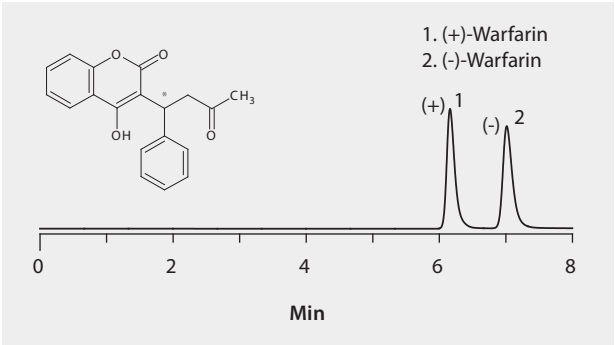
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . . . . 15 mM ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004474



SUPELCO
Solutions within.™

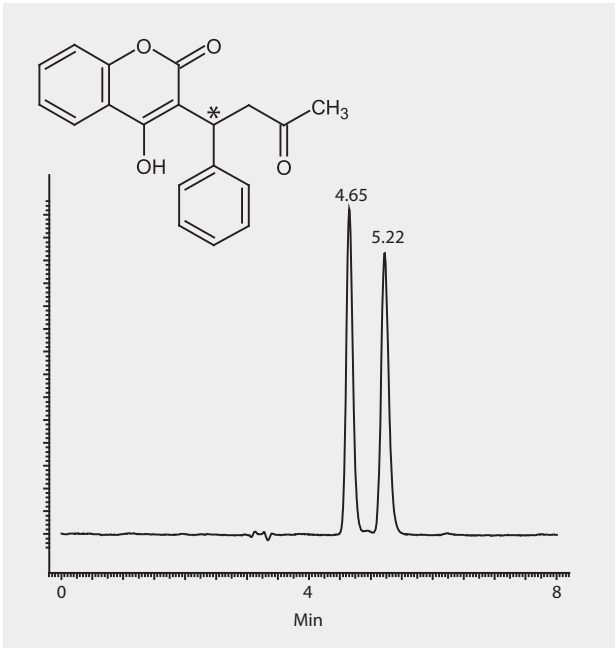
HPLC Analysis of Warfarin™ Enantiomers on Astec® Cellulose DMP

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) methanol; (B) acetic acid; (C) TEA; (100:0.2:0.1, A:B:C)
flow rate . . . . . 0.5 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 278 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005007



HPLC Analysis of Warfarin™ Enantiomers on Astec® CHIROBIOTIC® V

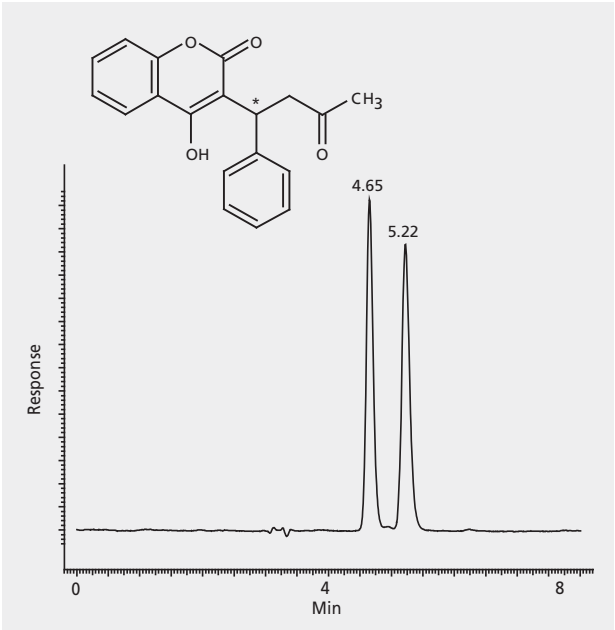
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) 5 mM ammonium acetate, pH 4.1; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004349



SUPELCO
Solutions within.™

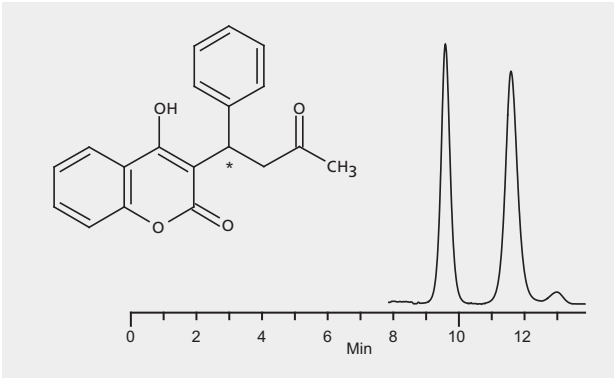
HPLC Analysis of Warfarin™ Enantiomers on Astec® CHIROBIOTIC® V (Method 1)

column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . (A) acetonitrile; (B) 5 mM ammonium acetate, pH 4.1; (30:70, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1 mg/mL in mobile phase
Application No. G004472



HPLC Analysis of Warfarin™ Enantiomers on Astec® CHIROBIOTIC® V (Method 2)

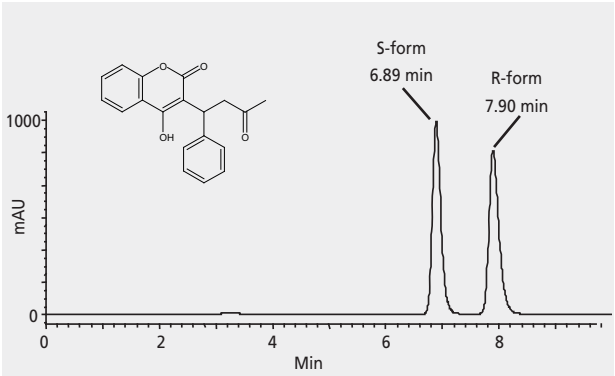
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . (A) 0.1% triethylamine acetate, pH 5.0; (B) THF; (80:20, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . ambient
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 4 mg/mL in methanol
Application No. G004649



SUPELCO®
Solutions within.™

HPLC Analysis of Warfarin™ Enantiomers on Astec® CYCLOBOND® I 2000 (UV at 254 nm)

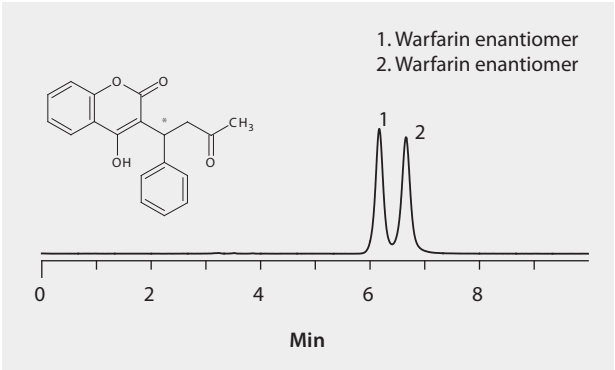
column . . CYCLOBOND I 2000, 25 cm × 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . . . . (A) acetonitrile: (B) acetic acid: (C) triethylamine; (100:0.3:0.25, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
Application No. G004027



SUPELCO® Solutions within.™

HPLC Analysis of Warfarin™ Enantiomers on Astec® CYCLOBOND® I 2000 (UV at 278 nm)

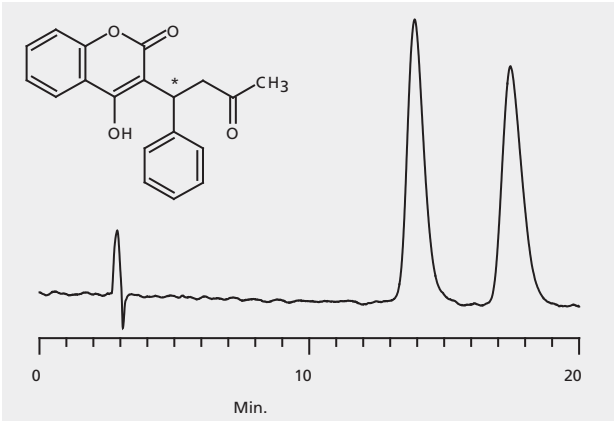
column . . . CYCLOBOND I 2000, 25 cm x 4.6 mm I.D., 5 µm particles (20024AST)
mobile phase . . . . . (A) acetonitrile; (B) acetic acid; (C) TEA; (100:0.3:0.2, A:B:C)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 278 nm
injection . . . . . 2 µL
sample . . . . . 2 mg/mL in mobile phase
Application No. G005008



SUPELCO® Solutions within.™

HPLC Analysis of Warfarin™ Enantiomers on Astec® CHIROBIOTIC® V2

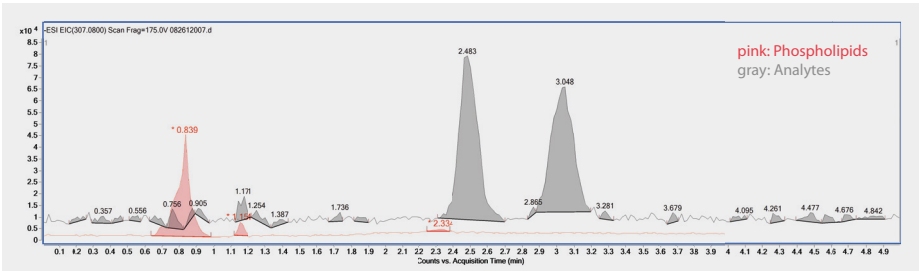
column . . . . . CHIROBIOTIC V2, 25 cm x 4.6 mm I.D., 5 µm particles (15024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.1; (B) acetonitrile; (70:30, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 280 nm
injection . . . . . 10 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004475



LC-MS/MS Analysis of Warfarin™ Enantiomers in Plasma on Astec® CHIROBIOTIC® V after SPE using HybridSPE®-Phospholipid

Warfarin is a widely prescribed oral anticoagulant for treatment and prevention of thrombosis and thromboembolism. The pharmacological effect of warfarin is derived from its ability to inhibit the enzyme vitamin K epoxide reductase, thereby reducing circulating levels of vitamin K which is required in the clotting process. In spite of its popularity, there are some downsides to warfarin, including a relatively narrow therapeutic index, interactions with other clinically important drugs, side effects, genetic variation in warfarin metabolism, frequent migration of blood levels outside the therapeutic range, bleeding events, and variability in time to reach therapeutic levels. These, and the fact that warfarin is the second leading cause of drug-related emergency room visits make it a commonly analyzed compound in the clinical lab. Warfarin is a chiral compound comprising an equal mixture of (R) and (S) enantiomers. (S)-Warfarin is considerably more potent and pharmacologically active than (R)-warfarin. Astec CHIROBIOTIC V columns resolve warfarin enantiomers under LC-MS conditions and hold up well to biological samples. The clinical implications and importance of therapeutic drug monitoring of warfarin necessitate reliable and sensitive analytical methods, like UHPLC-MS/MS, to detect and quantify warfarin and its enantiomers in serum.

sample/matrix . . . . . rabbit plasma, unfiltered K2-EDTA, spiked with warfarin at 100 ng/mL (3:1, plasma:1% formic acid in acetonitrile)
SPE tube/cartridge . . . . . HybridSPE-Phospholipid, 96-well plate (575656-U)
sample addition . . . . . to each well add 100 µL plasma, followed by a 300 µL of 1% formic acid in acetonitrile, agitate on orbital shaker for 4 minutes
elution . . . . . to each well add 100 µL plasma, followed by a 300 µL of 1% formic acid in acetonitrile, agitate on orbital shaker for 4 minutes
column . . Astec CHIROBIOTIC® V, 10 cm x 4.6 mm I.D., 5 µm particles (11022AST)
mobile phase . . (A) 0.1% formic acid (pH unadjusted); (B) acetonitrile, 75:25 (A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 35 °C
detector . . . . . ESI+, 100-1000 m/z
injection . . . . . 2 µL
Application No. G005849



SUPELCO® Solutions within.™

LC-MS (TOF) Analysis of Warfarin™ Enantiomers in Plasma on Astec® CHIROBIOTIC® V after SPE Using HybridSPE®-Phospholipid

This application demonstrates the benefit of using Sigma-Aldrich Analytical (Supelco, Fluka, and Cerilliant) consumables for rapid, accurate, sensitive and reliable MS detection in a clinical or bioanalytical setting.

Warfarin was originally developed as a rodenticide, but soon found medical application as an anticoagulant to prevent the formation of blood clots, especially after heart attacks. At the time of this writing, it is the most widely prescribed oral anticoagulant and is sold under Coumadin and various other brand names. Warfarin is a chiral molecule. The R- and S- forms are cleared by the body via different pathways and have different pharmacokinetic and pharmacodynamic effects. S-warfarin is more potent than the R-warfarin in producing the anticoagulant response.

The Astec® CHIROBIOTIC V column provided rapid resolution of the enantiomers under conditions that are compatible with mass spectrometric (MS) detection. Considering the rise of MS in the clinical laboratory, this is an important consideration. The CHIROBIOTIC family of chiral columns are based on the macrocyclic glycopeptide molecule and affect enantioresolution under mobile conditions that are compatible with reversed-phase and MS conditions. Their durability allows them to stand up to repeated injections of biological extracts.

By using HybridSPE-Phospholipid for the sample prep, ion-suppressing phospholipids were removed for improved sensitivity and longer column lifetime. LC-MS Ultra CHROMASOLV solvents were used to supply low background interference and particulate contaminants. Cerilliant reference material grade standards provided reliable quantitation.

system: Agilent 1290, 6210 TOF

sample/matrix . . . . . Rat plasma stabilized with K2EDTA was acquired from Lampire Biological Laboratories, (Pipersville PA). (Plasma was spiked directly from stock standard to a level of 100 ng/mL in 3:1 (plasma:1% formic acid acetonitrile).)

SPE tube/cartridge . . Pk1 50 mg/96-Well HybridSPE-Phospholipid Plate (575656-U)

condition . . Apply 100 µL of plasma to plate, followed by 300 µL of 1% formic acid acetonitrile. Agitate via vortex for 4 min.

elution . . . . . Place on vacuum manifold and apply 10" Hg vacuum for 4 minutes. Collect filtrate and analyze directly.

column . . . . . CHIROBIOTIC V,10 cm x 4.6 mm I.D., 5 µm particles (11022AST)

mobile phase . . . . . (A) 0.1% formic acid water; (B) acetonitrile, (75:25, A:B)

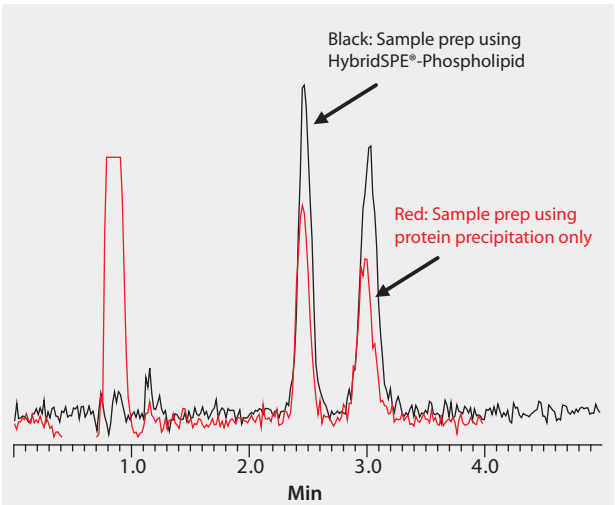
flow rate . . . . . 1 mL/min

column temp. . . . . 35 °C

detector . . . . . ESI+, 100-1000 m/z

injection . . . . . 2 µL

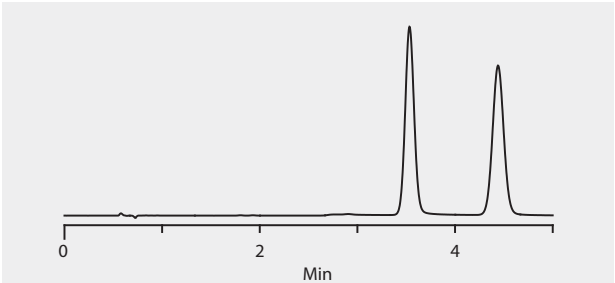
Application No. G005827



SFC Analysis of Aminoglutethimide Enantiomers on Astec® Cellulose DMP

This application demonstrates the ability of the Astec® Cellulose DMP column to separate Aminoglutethimide enantiomers via Supercritical Fluid Chromatography. DMPC-derivatized cellulose is widely used for chiral separations by SFC, both analytical and prep. The Astec® Cellulose DMP works well in SFC mode, providing rapid separations with excellent selectivity.

column . . Astec Cellulose DMP, 25 cm x 4.6 mm I.D., 5 µm particles (51099AST)
mobile phase . . (A) CO_2, (B) methanol containing 0.1% DEA in CO_2, (75:25, A:B)
flow rate . . . . . 3 mL/min
pressure . . . . . 1740 psi (120 bar)
detector . . . . . UV, 230 nm
injection . . . . . 5 µL
sample . . . . . 2 mg/mL in methanol
Application No. G005454



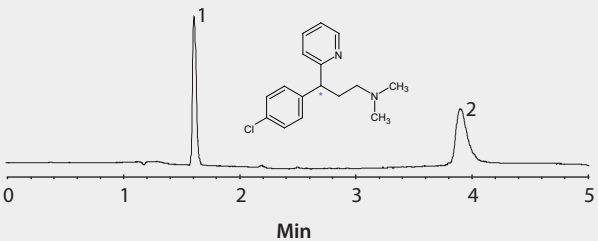
SFC Analysis of Chlorpheniramine Enantiomers on Astec® Cellulose DMP, Methanol Gradient

SFC data provided by Dr. Christina Kraml, Lotus Separations, LLC, Princeton, NJ.

Instrument: Berger Analytical SFC system equipped with a dual pump (FCM-1200), autosampler (ALS 3100), column oven (TCM-200) and diode-array detector (DAD-4100); from Mettler Toledo.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
gradient . . . . . Gradient of 5-65% methanol in 3 min, hold for 1 min
mobile phase . . . . . (A) CO_2; (B) methanol;
flow rate . . . . . 4 mL/min
pressure . . . . . 1450 psi (100 bar)
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . chlorpheniramine, 2 mg/mL
Application No. G005175

1. Chlorpheniramine enantiomer
2. Chlorpheniramine enantiomer



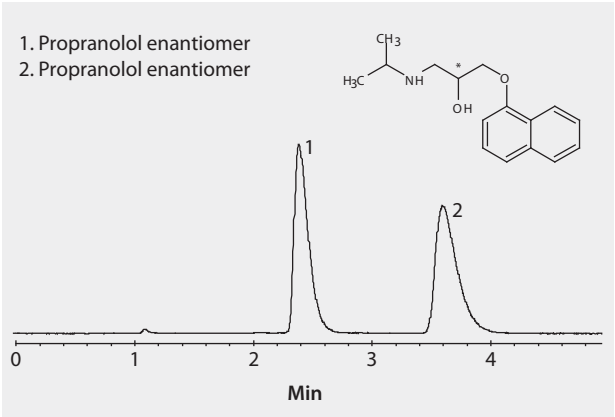
SUPELCO® Solutions within.™

SFC Analysis of Propranolol Enantiomers on Astec® Cellulose DMP, Methanol Additive

SFC data provided by Dr. Christina Kraml, Lotus Separations, LLC, Princeton, NJ.

Instrument: Berger Analytical SFC system equipped with a dual pump (FCM-1200), autosampler (ALS 3100), column oven (TCM-200) and diode-array detector (DAD-4100); from Mettler Toledo.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A)CO_2; (B) methanol; (80:20, A:B)
flow rate . . . . . 3 mL/min
pressure . . . . . 1450 psi (100 bar)
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . propranolol, 2 mg/mL
Application No. G005172



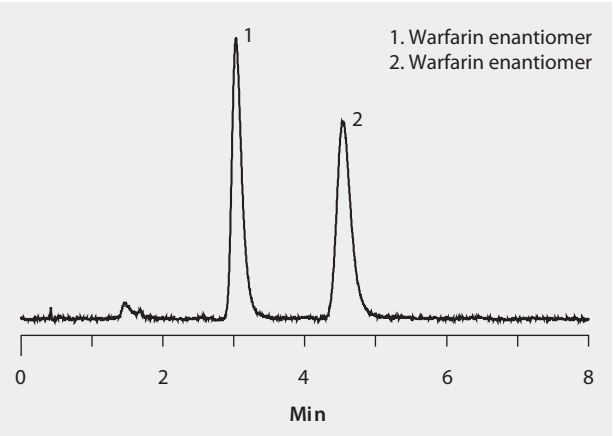
SUPELCO® Solutions within.™

SFC Analysis of Warfarin™ Enantiomers on Astec® Cellulose DMP, Ethanol Additive

SFC data provided by Dr. Christina Kraml, Lotus Separations, LLC, Princeton, NJ.

Instrument: Berger Analytical SFC system equipped with a dual pump (FCM-1200), autosampler (ALS 3100), column oven (TCM-200) and diode-array detector (DAD-4100); from Mettler Toledo.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) CO_2; (B) ethanol; (80:20, A:B)
flow rate . . . . . 3 mL/min
pressure . . . . . 1450 psi (100 bar)
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . warfarin enantiomers, 2 mg/mL
Application No. G005171



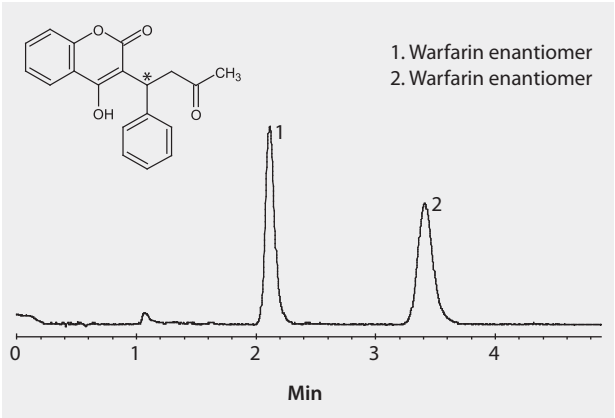
SUPELCO® Solutions within.™

SFC Analysis of Warfarin™ Enantiomers on Astec® Cellulose DMP, Methanol Additive

SFC data provided by Dr. Christina Kraml, Lotus Separations, LLC, Princeton, NJ.

Instrument: Berger Analytical SFCsystem equipped with a dual pump (FCM-1200), autosampler (ALS 3100), column oven (TCM-200) and diode-array detector (DAD-4100); from Mettler Toledo.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) CO_2; (B) methanol; (80:20, A:B)
flow rate . . . . . 3 mL/min
pressure . . . . . 1450 psi (100 bar)
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . warfarin enantiomers, 2 mg/mL
Application No. G005170



SUPELCO® Solutions within.™

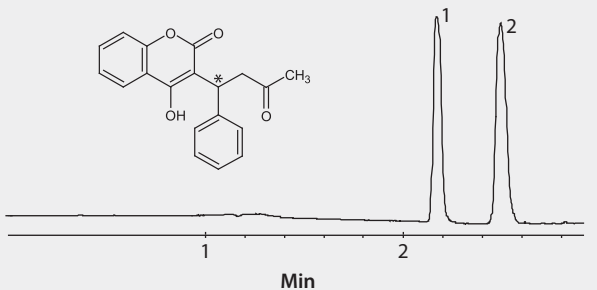
SFC Analysis of Warfarin™ Enantiomers on Astec® Cellulose DMP, Methanol Gradient

SFC data provided by Dr. Christina Kraml, Lotus Separations, LLC, Princeton, NJ.

Instrument: Berger Analytical SFC system equipped with a dual pump (FCM-1200), autosampler (ALS 3100), column oven (TCM-200) and diode-array detector (DAD-4100); from Mettler Toledo.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) carbon dioxide; (B) methanol; Gradient of 5-65% methanol in 3 min., hold for 1 min
flow rate . . . . . 4 mL/min
pressure . . . . . 1450 psi (100 bar)
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . warfarin
Application No. G005174

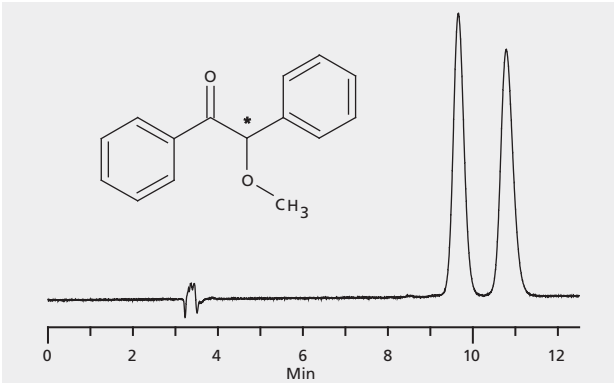
1. Warfarin enantiomer
2. Warfarin enantiomer



Vitamins, Nutraceuticals, and Natural Products

HPLC Analysis of Benzoin Methyl Ether Enantiomers on Astec® CHIROBIOTIC® V

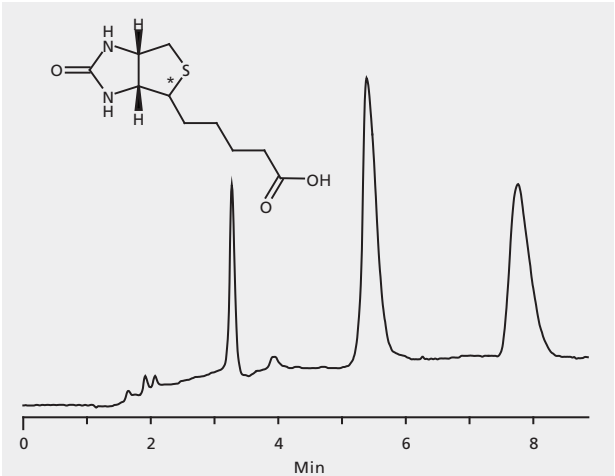
column . . . . . CHIROBIOTIC V, 25 cm x 4.6 mm I.D., 5 µm particles (11024AST)
mobile phase . . . . . (A) 1% triethylamine, pH 7.0; (B) THF; (90:10, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 2 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004618



SUPELCO®
Solutions within.™

HPLC Analysis of Biotin Enantiomers on Astec® CHIROBIOTIC® T

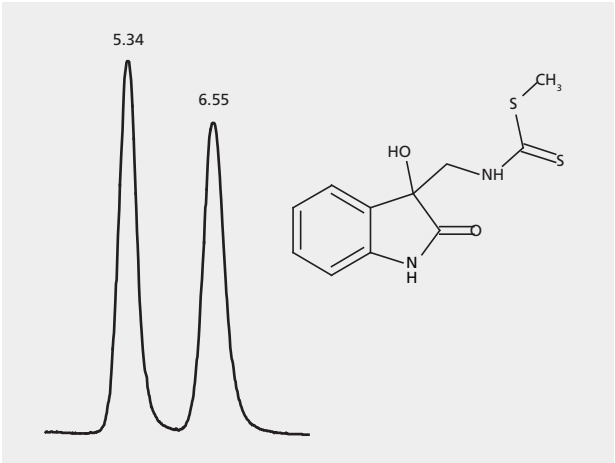
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . (A) 0.1% sodium phosphate, pH 4.1; (B) methanol; (60:40, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 23 °C
detector . . . . . UV, 210 nm
injection . . . . . 2 µL
sample . . . . . 4 mg/mL in methanol
Application No. G004540



SUPELCO®
Solutions within.™

HPLC Analysis of Dioxibrassinin Enantiomers on Astec® P-CAP™

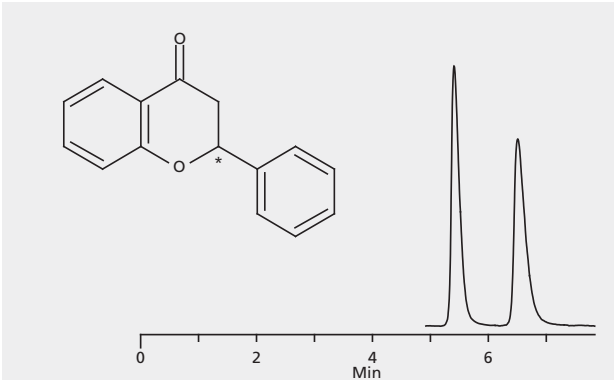
column . . Astec (R,R) P-CAP-DP, 25 cm x 4.6 mm I.D., 5 µm particles (35024AST)
mobile phase . . . . . (A) acetonitrile; (B) methanol; (97:3, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 255 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004400



SUPELCO® Solutions within.™

HPLC Analysis of Flavanone Enantiomers on Astec® CYCLOBOND® I 2000 DMP, Ethanol:Hexane Mobile Phase

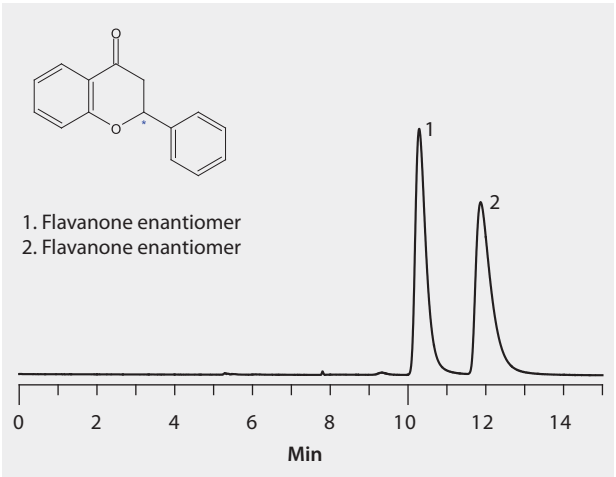
column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . . . . (A) ethanol; (B) hexane; (20:80, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004697



SUPELCO
Solutions within.™

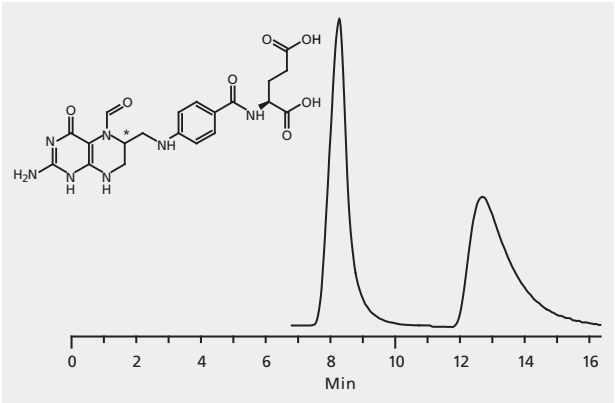
HPLC Analysis of Flavanone Enantiomers on Astec® CYCLOBOND® I 2000 DMP, IPA:Heptane Mobile Phase

column . . CYCLOBOND I 2000 DMP, 25 cm x 4.6 mm I.D., 5 µm particles (20724AST)
mobile phase . . . . . (A) isopropanol; (B) heptane; (30:70, A:B)
flow rate . . . . . 0.6 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . flavanone, 1 mg/mL in heptane
Application No. G005161



HPLC Analysis of Folinic Acid Enantiomers on Astec® CHIROBIOTIC® T

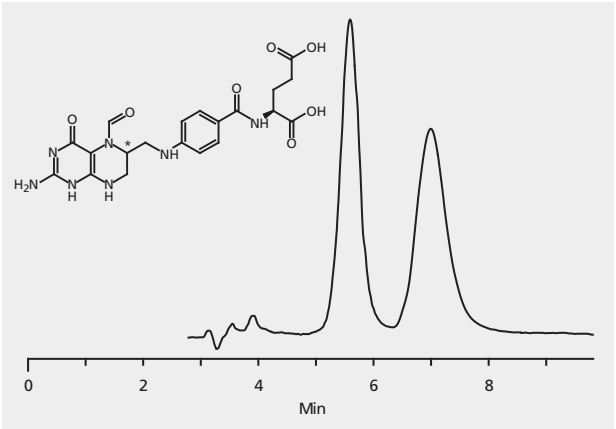
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . (A) methanol; (B) acetic acid; (C) triethylamine; (100:1:0.5, A:B:C)
flow rate . . . . . 2 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 2 µL
sample . . . . . 5 mg/mL in methanol
Application No. G004541



SUPELCO® Solutions within.™

HPLC Analysis of Folinic Acid Enantiomers on Astec® CHIROBIOTIC® T (RP mode)

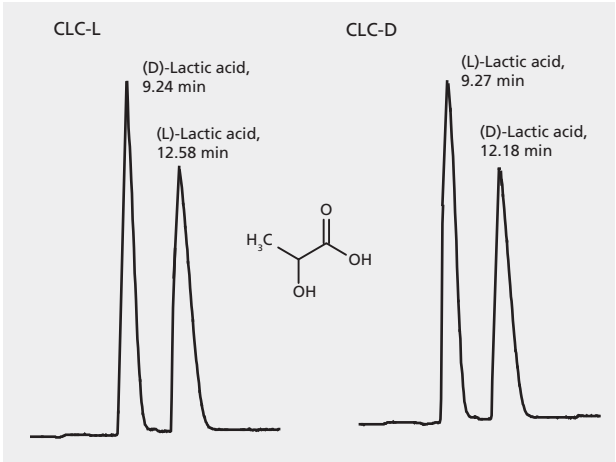
column . . . . . CHIROBIOTIC T, 25 cm x 4.6 mm I.D., 5 µm particles (12024AST)
mobile phase . . . (A) 1% triethylamine acetate, pH 4.5; (B) ethanol; (50:50, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 20 °C
detector . . . . . UV, 254 nm
injection . . . . . 5 µL
sample . . . . . 1.25 mg/mL in methanol
Application No. G004542



SUPELCO® Solutions within.™

HPLC Analysis of Lactic Acid Enantiomers on Astec® CLC-L and CLC-D

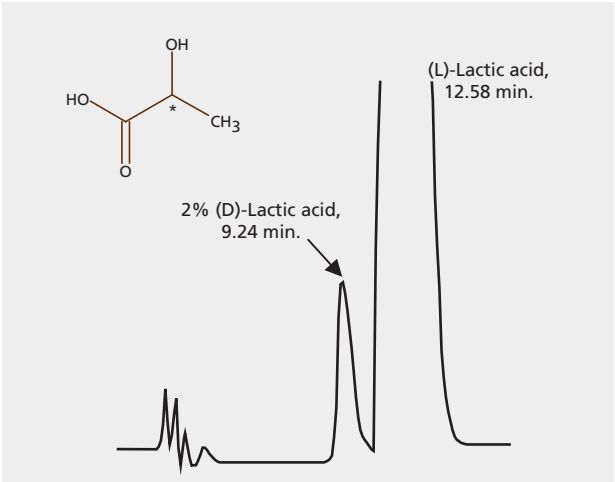
column	Astec CLC-L and CLC-D, 15 cm x 4.6 mm I.D., 5 µm particles (53023AST, 53123AST)
mobile phase	5 mM copper sulfate
flow rate	1 mL/min
column temp.	25 °C
detector	UV, 254 nm
injection	10 µL
Application No.	G004399



SUPELCO® Solutions within.™

HPLC Analysis of Lactic Acid Enantiomers on Astec® CLC-L, Trace Level Detection

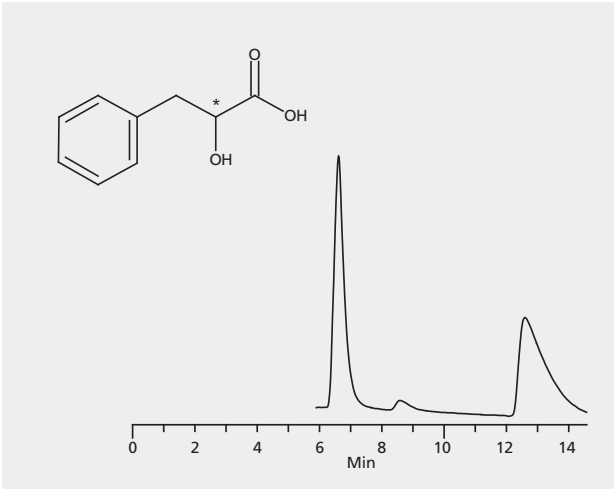
column . . . . . Astec CLC-L, 15 cm x 4.6 mm I.D., 5 µm particles (53123AST)
mobile phase . . . . . 5 mM copper sulfate
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 5 mg/mL in water
Application No. G004663



SUPELCO®
Solutions within.™

HPLC Analysis of 3-Phenyllactic Acid Enantiomers on Astec® CHIROBIOTIC® R

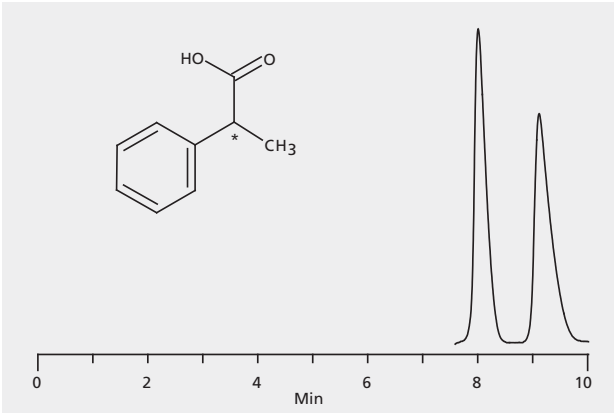
column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . 0.1% ammonium acetate in methanol
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 230 nm
injection . . . . . 0.5 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004680



SUPELCO® Solutions within.™

HPLC Analysis of 2-Phenylpropionic Acid Enantiomers on Astec® CYCLOBOND® I 2000 HP-RSP

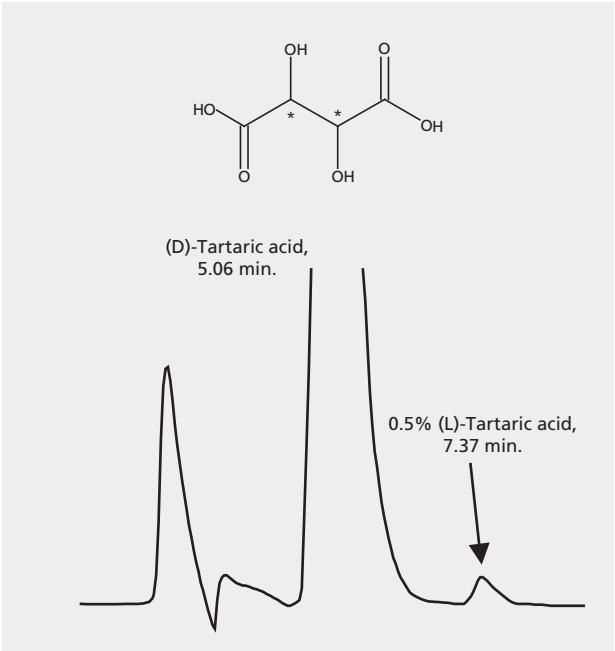
column . . . . . CYCLOBOND I 2000 HP-RSP, 25 cm x 4.6 mm I.D., 5 µm particles (24024AST)
mobile phase . . (A) 10 mM ammonium acetate, pH 4.0; (B) acetonitrile; (75:25, A:B)
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 235 nm
injection . . . . . 1 µL
sample . . . . . 1 mg/mL in methanol
Application No. G004717



SUPELCO® Solutions within.™

HPLC Analysis of Tartaric Acid Enantiomers on Astec® CLC-D, Trace Level Detection

column . . . . . Astec CLC-D, 15 cm x 4.6 mm I.D., 5 µm particles (53023AST)
mobile phase . . . . . 3 mM copper sulfate, pH 3.2
flow rate . . . . . 1 mL/min
column temp. . . . . 25 °C
detector . . . . . UV, 254 nm
injection . . . . . 10 µL
sample . . . . . 5 mg/mL in water
Application No. G004665

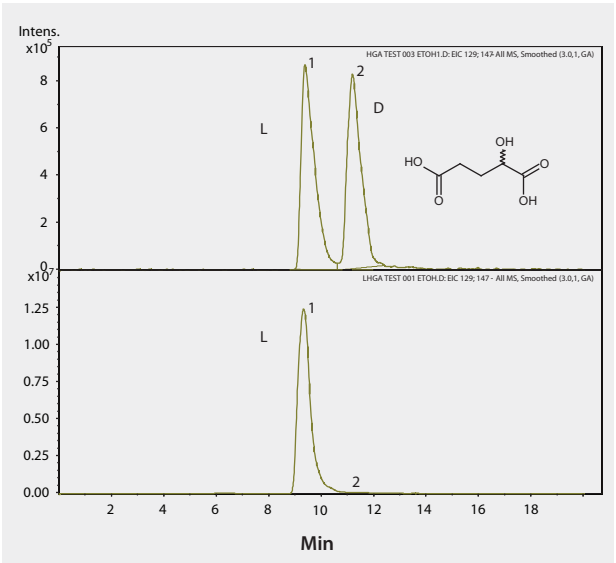


SUPELCO® Solutions within.™

LC-MS/MS Analysis of 2-Hydroxyglutaric Acid Enantiomers on Astec® CHIROBIOTIC® R

Chiral 2-hydroxyglutarates (2-OHG) are important molecular signatures of both healthy and diseased biological cells, their specific biochemical pathways and inborn errors of metabolism. The chiral differentiation and quantification of D-2-OHG (R(-)-2-OHG) and L-2-OHG (S(+)-2-OHG) is key for characterizing neurometabolic disorders like the 2-hydroxyglutaric acidurias that cause neurological impairment early in life. The ability to distinguish and quantify the enantiomers of 2-OHG is therefore important to be able to track its disposition throughout the metabolic pathway of normal vs. mutated cells. We show here a rapid and sensitive method to separate and measure D-2-OHG and L-2-OHG using LC-MS/MS detection. An Astec® CHIROBIOTIC R (ristocetin chiral selector) column was run under polar ionic mobile phase conditions. Using tandem MS eliminated two fundamental analytical challenges with these compounds: the lack of a UV-absorbing chromophore in the 2-OHG molecule, and the abundance of competing low molecular weight acids in urine. The upper panel in the chromatogram shows the separation of D-2-OHG and L-2-OHG obtained during method development. The lower panel shows the pure L-2-hydroxyglutaric acid. Besides providing the necessary enantioselectivity, Astec® CHIROBIOTIC columns have the advantage of operating in aqueous and polar organic mobile phases that are amenable to polar drugs and metabolites. Their ionic interactions promote analyte ionization which enhances sensitivity in ESI detection. In addition to the CHIROBIOTIC columns, Sigma-Aldrich also provides the high purity mobile phase agents, racemic and pure chiral 2-OHG enantiomers and other compounds in the isocitrate dehydrogenase (IDH) pathway.

column . . . . . CHIROBIOTIC R, 25 cm x 4.6 mm I.D., 5 µm particles (13024AST)
mobile phase . . . . . (A) ethanol:methanol (3:1, v:v); (B) 0.1% v/v TEA in water, adjusted to pH 4.5 with acetic acid; 75:25 (A:B)
flow rate . . . . . 0.4 mL/min
column temp. . . . . 20 °C
detector . . . . . MS, ESI(-), 100-1000 m/z
injection . . . . . 5 µL
sample . . . . . each enantiomer, 100 µg/mL in water
Application No. G005848

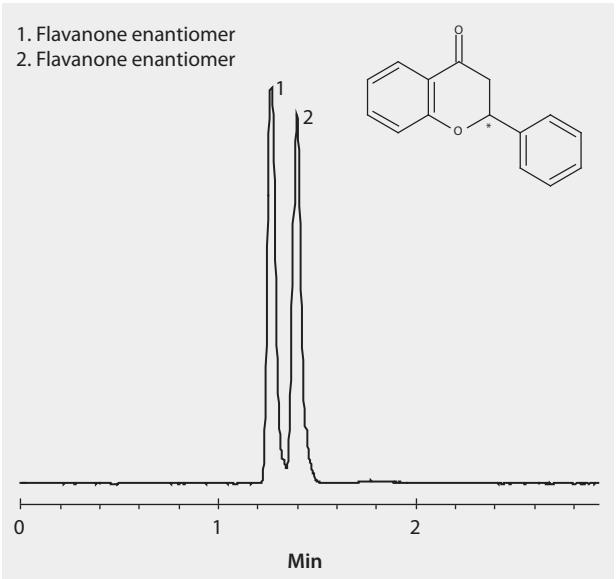


SFC Analysis of Flavanone Enantiomers on Astec® Cellulose DMP, Methanol Additive

SFC data provided by Dr. Christina Kraml, Lotus Separations, LLC, Princeton, NJ.

Instrument: Berger Analytical SFC system equipped with a dual pump (FCM-1200), autosampler (ALS 3100), column oven (TCM-200) and diode-array detector (DAD-4100); from Mettler Toledo.

column . . Astec Cellulose DMP, 15 cm x 4.6 mm I.D., 5 µm particles (51098AST)
mobile phase . . . . . (A) CO_2; (B) isopropanol; (80:20, A:B)
flow rate . . . . . 3 mL/min
pressure . . . . . 1450 psi (100 bar)
column temp. . . . . 35 °C
detector . . . . . UV, 220 nm
injection . . . . . 5 µL
sample . . . . . flavanone, 2 mg/mL
Application No. G005173



SUPELCO®
Solutions within.™

Analyte Index

Page number groupings in this index indicate the appearance of applications within multiple techniques/market focus groups. Additionally, you can activate the **Text Select** tool (bottom menu bar) and highlight the desired analyte. Right-click to copy the analyte name and paste it into the Search bar. Results for the active volume will appear on the left side of the window, allowing you to browse the results. Because this index spans all three volumes, use the footer links to open a different volume to search for additional results.

— 1 —

cis-11,14-Eicosadienoic acid methyl ester (C20:2) at 2 wt % 1822,1922,2254
cis-8,11,14-Eicosatrienoic acid methyl ester (C20:3n6) at 2 wt % 1822,1922,2254
cis-5,8,11,14,17-Eicosapentaenoic acid methyl ester (C20:5n3) at 2 wt % 1822,1922,2254
cis-11,14,17-Eicosatrienoic acid methyl ester (C20:3n3) at 2 wt % 1822,1922,2254

— A —

A10 (Polynucleotide) 1096,691
A11 (Polynucleotide) 1096,691
A12 (Polynucleotide) 1096,691
A13 (Polynucleotide) 1096,691
A14 (Polynucleotide) 1096,691
A15 (Polynucleotide) 1096,691
A16 (Polynucleotide) 1096,691
A17 (Polynucleotide) 1096,691
A18 (Polynucleotide) 1096,691
A20 (Polynucleotide) 1096,691
F(ab')2 673
Acebutolol 131,139,943,895,942,954
Acebutolol hydrochloride 2862,847,2863,848
Ace inhibitors 123,849
Acenaphthalene 311
Acenaphthene 2375,310,311,685, 1408,2010,1409,2011,1451,1936,1480,2013,1481,2014,1483,2029,2365,2420,1517,1518,1524,1540,1541,1552,1553,1554,1555,1556,1557, 1558,1560,1561,1562,1563,1564,1567,1587
Acenaphthene-d_{10} 1388,1411,1482,2028,1483,2029,2365,2420, 1506,2075,1507,2076,1524,1550,1551,1552,1553,1554,1555,1556,1557,1564
Acenaphthene-d_{10} 1567,1587
Acenaphthene-d10 (I.S.) 1558
Acenaphthylene 2375,310,1388,1411,1482,2028, 1408,2010,1409,2011,1451,1936,1480,2013,1481,2014,1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524,1540,1541,1552, 1553,1554,1555,1556,1557,1558,1560,1561,1562,1563,1564,1567,1587
Acenaphthylene-d_{10} 1484,2030,2366,2421
Acephate 1347,1394,1798,1894, 1350,1401,1860,1995,1430,1641,1796,1892,1797,1893
Acesulfame 339,340,346,347
Acetal 1969
Acetaldehyde 21,2326,1895,1969,2026,2027,2292,2464,2293,2294
Acetaldehyde-2,4-dinitrophenylhydrazone 22,2334,23,2335
Acetaldehyde-2,4-DNPH 2337
Acetaldehyde (2,4-DNPH derivative) 2336,24
Acetaminophen 1105,183,850,869,870,871,912,971
Acetamiprid 1358,19
Acetanilide 870
Acetic acid 1491,1581,2319,2331,1492,1583,2320,2333,1808,1908,2244,1809,1909,2245, 1873,2031,2278,1969,1970,2404,1971,2405,2026,2027,2045,2350,2060,2443,2210,2211,2213
Acetic acid, 8% 1993
Acetochlor 1888,2067
Acetoin 2056,2439
Acetol acetate 2056,2439
Acetone 21,2326,316,1431,1572,1490,1580,2318,2330,1492,1583,2320,2333,1493,2057,2370,2440,1504,2073, 1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1676,1725,1726,1727,1780,1969,2051,2435,2210,2211,2212,2452,2213,2214,2453, 2226,2456,2292,2464,2293,2294
Acetone-2,4-dinitrophenylhydrazone 22,2334,23,2335
Acetone-2,4-DNPH 2337
Acetone (2,4-DNPH derivative) 2336,24
Acetonitrile 1490,1580,2318,2330, 2205,2206,2207,2450,2208,2209,2451,2224,2225,2455
Acetophenone 36,841,554,1117,1118,1550,1551,1564,1574,2328
2-Acetylaminofluorene 1550,1551
3-*O*-Acetyl-α-boswellic acid 1325,1326,1334,1335,1336,1337
3-*O*-Acetyl-β-boswellic acid 1325,1326,1334,1335,1336,1337

6-Acetylcodeine solution 264,484
^{15}N-Acetyl-DL-cysteine 2729,498
3-Acetyldeoxynivalenol 12,358,17,394
15-Acetyldeoxynivalenol 17,394
15-Acetyldeoxynivalenol solution 12,358
Acetylene 1639,1665,1723,1724,1734,1749,1750,1751
Acetylene (430 ng on column) 1752
2-Acetylfuran 2056,2439
3-*O*-Acetyl-11-keto-β-boswellic acid 1325,1326,1334,1335,1336,1337
N-Acetyl-DL-methionine 2730,499
2-Acetyl-1-methylpyrrole 2056,2439
6-Acetylmorphine, 1.0 mg/mL solution 264,484
N-Acetylphenylalanine 2731,500
N-Acetylprocainamide 1121
N-Acetyl-4*H*-pyridine 2056,2439
2-Acetylpyrrole 2056,2439
Acetylsalicylic acid 37,279
Acetylsalicylic acid 910,922,1141,1236
N-Acetyl-DL-tryptophan 2732,501
ac-GGALKALKGLK-amide 532,707
ac-GGGLGGAGGLK-amide 532,707
Acid phosphatase 801
Acid red 388
Acinathrin 1886,2065
ac-IVYIHPR 531,932
ac-KVYIHPI 531,932
ac-KYALKALKGLK-amide 532,707
ac-KYGLGGAGGLK-amide 532,707
ac-RGAGGLGLGK-amide 771
ac-RGGGGLGLGK-amide 771
ac-RGVGGLGLGK-amide 771
ac-RGVVGLGLGK-amide 771
Acrolein 21,2326
Acrolein-2,4-dinitrophenylhydrazone 22,2334,23,2335
Acrolein (2,4-DNPH derivative) 2336,24
ac-RVYIHPI 531,932
Acrylamide 28
Acrylic acid 28,1277,368,85,1278,369,86
Acrylonitrile 1504,2073
Active amyl alcohol 2026,2027
Adenine 684,765
Adenosine 685,687,688,689,690,769
Adenosine diphosphate 690
Adenosine diphosphoribose 690
Adenosine monophosphate 690
Adenosine triphosphate 690
Adrenomedullin rat 738
Aflatoxin B_1 1415,328,330,1416,329,331
Aflatoxin B_1 solution 1414,327
Aflatoxin B_2 1415,328,330,1416,329,331
Aflatoxin B_2 solution 1414,327
Aflatoxin G_1 1415,328,330,1416,329,331
Aflatoxin G_1 solution 1414,327
Aflatoxin G_2 1415,328,330,1416,329,331
Aflatoxin G_2 solution 1414,327
Aflatoxin M_1 331
Aflatoxin M_1 solution 396
AICAR 467
Air 1699
Ajmalicine 1316
Alachlor 1388,1411,1482,2028,1506,2075,1507,2076,1886,2065
Alanine 810
D-Alanine 2733,503
L-Alanine 2733,503,1897,2304
DL-Alanine 2734,504,2735,505
β-Alanine 810
DL-Alanine (AQC derivatives) 2738,517
DL-Alanine (t-BOC derivatives) 2751,533
DL-Alanine, FMOC derivatives 2773,588
Alanylvaline 2736,506
Albumin 748,750,752
Albumin from chicken egg white 207,738,761,762
Bovine Serum Albumin 734,735,736,737,744,825
Albumin (bovine serum) 826
Albumin chicken egg (44.3 kDa) 493
Albumin dimer (bovine serum) 826
Albuterol 2864,852
Alcohol dehydrogenase 748,750

Aldicarb 1391,305,316,1419,406
Alditol acetates 2036
Aldosterone solution 1374,257
Aldrin 1381,1395,1438,1924,1382,1396,1439,1925,1388,1411,1482,2028,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1524,1532,1571,1591,2325,2347,1604
Alidochlor 1888,2067
Aliphatic hydrocarbons 1640
Allene 1665,1723
Allethrin-1 1887,2066
Allethrin-2 1887,2066
Allocimene 2095,2131,2161
Allura Red AC 388
Allyl alcohol 1895
Allyl chloride 1504,2073
2-Allyl-5-methylpyrazine 1871,2022,2395,2417
alpha-Hydroxyalprazolam solution 833
alpha-Terpinyl acetate + Citronellyl acetate 2096
Alprazolam 136,936,137,937,138,938,875,876
Alprazolam solution 490,833
Alprazolam-d_5 solution 833
Alprenolol 131,1020
Alprenolol hydrochloride 2865,855,2866,856,2867,857
AM2201 1226
AM2201 4-Hydroxypentyl metabolite solution 1225,838
AM2233 (459.11 m/z) 1227,839
Amaranth 388
Ametryn 1419,406,1466,1740,1858,1989,2356,2384,2392,2406, 1489,1788,1877,2039,2369,2391,2397,2425,1506,2075,1507,2076,1889,2068
Amiloride 130,893
Amino acids 509
2-Aminoanthraquinone 1673
Aminoazobenzene 1673
4-Aminobenzoic acid 1129,187,748,750,751,752
p-Aminobenzoic acid (0.14 kDa) 493
3-Aminobenzotrifluoride 1655
4-Aminobiphenyl 1550,1551,1673
2-Aminobutane (N-TFA derivatives) 1645,2488
γ-Aminobutyric acid 467
Aminocarb 1,295,294
7-Aminoclonazepam solution 833
7-Aminoclonazepam-d_4 solution 833
2-Amino-3,4-dimethyl-3*H*-imidazo[4,5-f]quinoline 63
2-Amino-3,8-dimethylimidazo[4,5-f]quinoxaline 63
2-Amino-4,6-dinitrotoluene 296
2-Amino-4,6-dinitrotoluene 1455,1695,2297,2354,2383,2466,1456,1696,2298
4-Amino-2,6-dinitrotoluene 297
4-Amino-2,6-dinitrotoluene 1455,1695,2297,2354,2383,2466,1456,1696,2298
7-Aminoflunitrazepam solution 833
7-Aminoflunitrazepam-d_7 solution 833
Aminoglutethimide 2868,861
DL-Aminoglutethimide 2868,861,1340,3023
2-Aminoheptane (N-TFA derivatives) 1645,2488
3-Aminoheptane (N-TFA derivatives) 1645,2488
3-Aminoheptane (N-Trifluoroacetyl derivative) 1651,2492
1-Aminoindan 2717,2869,408,862
5-Amino-2-methylheptane (N-TFA derivatives) 1645,2488
2-Amino-3-methyl-3H-imidazo[4,5-f]quinoline 63
3-Amino-2-methylpentane (N-TFA derivatives) 1645,2488
2-Amino-1-methyl-6-phenylimidazo[4,5-b]pyridine 63
2-Aminopentane (N-TFA derivatives) 1645,2488
4-Aminophenol 870
4-Aminophenyl sulfone 1199
Aminopterin 863,864
2-Aminopyridine 866,897,902
2-Amino-9*H*-pyrido[2,3-b]indole 63
Aminorex solution 454
3-aminotoluene 1673
5-Amino-1,3,3-trimethylcyclohexanemethylamine enantiomers (N-TFA derivatives) 1652,2493,1653,2494,1654,2495
Amiodarone hydrochloride 256
Amiodarone hydrochloride solution 1370,229,230,1378,266,267,1379,268
Amitraz 1890,2069
Amitriptyline 1164,210,1167,212,239,811,1168,1169,1170,2279,2303,2459,2468,2289
Amitriptyline hydrochloride 1368,209,1165,2288
Amlodipine 931
Amlodipine besylate 2870,865
Ammelide 117,318,397,2078,2079,2080,2081
Amobarbital 1200,269,485,1201,270,486

Amoxicillin 1009,1041
Amphetamine 189,448
(-)-Amphetamine 2718,409
Amphetamine 411,412,480,2234,2285,2457,2460
D-Amphetamine hemisulfate salt solution 432
(+)-Amphetamine 2718,409,458
d-Amphetamine 2195,2231,2282,2621,2711,2847
l-Amphetamine 2195,2231,2282,2621,2711,2847
dl-Amphetamine (AQC derivatives) 2719,413
d-Amphetamine (N-TFA derivative) 2196,2232,2283,2622,2712,2848,2197,2233,2284,2623,2713,2849
d,l-Amphetamine (N-TFA derivatives) 2235,2286,2458,2461
Ampicillin 1009,1041
Ampicillin Sodium 1230
n-Amyl acetate 1675,1725
n-Amyl acetate isomers 1726,1727
n-Amyl alcohol 2210
n-Amyl alcohol 2211
n-Amyl alcohol 2212,2452,2213,2214,2453
β-Amylase from sweet potato 744
Amylbenzene 33
tert-Amyl methyl ether 1594,1721,1722
Amyloid β-protein fragment 10-35 511
(+)-Anabasine hydrochloride solution 245
Ancymidol 2477,3,18,2486
5-α-Androstane (I.S.) 1526
(E)-Anethole 2161
Angelicin 1262
Angiotensin 513,873
Angiotensin I 126,512,513,873,874,1188
Angiotensin (1-7) amide 788
Angiotensin II 126,512,513,873,708,719,788,874,1188
Angiotensin III trifluoroacetate salt hydrate 126,512,513,873,874,1188
Anilazine 1419,406,1445,1679,1826,1931
Aniline 32,492,1484,2030,2366,2421, 1550,1551,1552,1553,1554,1555,1556,1557,1558,1655,1672,1673
Anilines 1655
Anilofos 1885,2064
o-Anisidine 1673
Anisole 2210,2211,2212,2452,2213,2214,2453
Anthracene 2375,310,311,1388,1411,1482,2028,1408,2010,1409,2011,1451,1936,1480,2013, 1481,2014,1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524,1540,1541,1552,1553,1554,1555,1556,1557,1558,1560,1561,1562, 1563,1564,1567,1587
Antibiotics 882
Antibody, monoclonal 677
Antihistamines 891
Antihypertensives 131
Antioxidants 1898,2182
Antiretrovirals 911
Apigen 7-glucoside 1276
Apigenin 6,8-di-C-glucoside 353
Apigenin 7-glucoside 1266,1288
Apimaysin 1246
Apohemoglobin, carboxymethylated, tryptic digest 542
Aprobarbital 414,925,416,927,417,929,418,930,928
Aprotinin 742,748,749,750,751,752
Aprotinin from bovine lung 762
aqpZ 663
Aquaporin Z 663
Arabinose 383,386
D-(−)-Arabinose 379
Arabitol 386,2036,2037
Arachidic acid 1808,1908,2244
Arachidic acid methyl ester (C20:0) 1637,1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251, 1836,1945,1837,1954,1839,1959,1840,1960,1842,1962,1844,1964
Arachidic acid methyl ester (C20:0) at 4 wt % 1822,1922,2254
Arachidonic acid methyl ester (C20:4n6) 1815,1915,2247
Arachidonic acid methyl ester (C20:4n6) 1817,1917,2249,1818,1918,2250,1819,1919,2251
Arachidonic acid methyl ester (C20:4n6) at 2 wt % 1822,1922,2254
Aramite #1 1552
Aramite #2 1552
D-Arginine 2745,524
L-Arginine 2745,524
DL-Arginine hydrochloride 2744,523
DL-Arginine, FMOC derivatives 2774,589
Argon 1745
Arg^{8}-vasopressin 709,720,710,721
Aroclor 1016 1533,1534,1535,1537
Aroclor 1248 1538

Aroclor 1254 1539
Aroclor 1260 1533,1534,1535,1537
Aromadendrene 2131
Arotinolol 2871,920
L-Ascorbic acid 122,1234,1301,1302,1303,1304,1309
Asparagine 819
D-Asparagine 2747,527
L-Asparagine 508,509,2747,527,727,1897,2304
DL-Asparagine monohydrate 2746,526
DL-Asparagine, FMOC derivatives 2775,590
Aspartame 346,347,348,349
Aspartic acid 509,819
D-Aspartic acid 2748,528
L-Aspartic acid 2748,528,727,1897,2304
DL-Aspartic acid 2749,529
DL-Aspartic acid potassium salt 2872,921
DL-Aspartic acid, FMOC derivatives 2776,591,2777,592
Aspirin 1105,183
Aspon 1542,1543,1544,1545
Asp-Phe 788
Asp-Phe methyl ester 339,340
Astaxanthin 1239,344,1241,1242,1243,1317
Atenolol 130,893,139,943,140,2633,2720,419,2873,923,941,942
Atorvastatin 1148,194,964
Atraton 1506,2075,1507,2076
Atrazine 5,110,15,111,16,20,1391,305,1357,1393,315,316,
1388,1411,1482,2028,1466,1740,1858,1989,2356,2384,2392,2406,1467,1990,2357,2407,1489,1788,1877,2039,2369,2391,2397,2425,
1506,2075,1507,2076,1544,1545,1564,1886,2065
Atrazine-desethyl 5,110,15,111,16
Atrazine-desethyl-desisopropyl-2-hydroxy 397,2078,2079,2080,2081
Atrazine-desisopropyl 110,15,111,16
DL-Atrolactic acid hemihydrate 2568,34,2569,35
Atropine 2874,924
Aviation gasoline pattern 1599
Azaconazole 1886,2065
Azamethiphos 1890,2069
DL-7-Azatryptophan hydrate 2750,530
3′-Azido-3′-deoxythymidine 911
Azinphos-ethyl 1350,1401,1860,1995,1542,1543,1890,2069
Azinphos-methyl 1350,1401,1860,1995,1449,1683,1830,1935,1542,1543,1885,2064,2004,2413
Azobenzene 1524,1552,1553,1554,1555,1556,1557,1558,1564,1673
Azoxystrobin 1430,1641,1796,1892,1446,1680,1827,1932,1886,2065

— B —

Baccatin III 1104,1153,1154,1220
Bacitracin A 395,1109
Baicalein 352
Balan 1467,1990,2357,2407
Barban 1,295,294,302,2374,303
Barbital 1200,269,485,1201,270,486,414,925,416,927,417,929,418,930,928
Beclomethasone 898
Behenic acid 1808,1908,2244
Behenic acid methyl ester 1818,1918,2250,1819,1919,2251
Behenic acid methyl ester (C22:0) 1815,1915,2247
Behenic acid methyl ester (C22:0) 1817,1917,2249,1840,1960,1842,1962
Behenic acid methyl ester (C22:0) at 4 wt % 1822,1922,2254
Benalaxyl 1449,1683,1830,1935,1888,2067
Bendroflumethiazide 2875,933
Benfluralin 1430,1641,1796,1892,1886,2065
Benfuracarb 1446,1680,1827,1932
Benfuresate 1890,2069
Benoxaprofen 2876,934
Benzaldehyde 21,2326,1491,1581,2319,2331,1564,1574,2328,
1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436,1883,2054,2402,2437,
1896,2403
Benzaldehyde-2,4-dinitrophenylhydrazone 22,2334,23,2335
Benzaldehyde-2,4-DNPH 2337
Benzaldehyde (2,4-DNPH derivative) 2336,24
Benzalkonium chloride 277,994,1114,1195
Benzamide 492
Benz[*a*]anthracene 2375,310,1387,1410,1479,2012,1388,1411,1482,2028,1483,2029,2365,2420,1484,2030,2366,2421,1506,2075,
1507,2076,1524,1552,1553,1554,1555,1556,1557,1564,1795,1891
Benz[*a*]anthracene solution 311,1451,1936
Benzene 36,841,554,1117,1118,1493,2057,2370,2440,
1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1500,1586,2321,2343,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,
1522,1527,1528,1529,1530,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1592,1593,1594,1595,1596,1597,
1600,1658,1601,1667,1602,1668,1610,1611,1612,1621,1640,1676,1725,1726,1727,1794,2200,2201,2202,2448,2203,2204,2449,2224,
2226,2456

Benzene-d_6 36,841
Benzidine 1524,1552,1553,1554,1555,1556,1557,1558,1673
Benzo[*a*]anthracene 1408,2010,1409,2011,1480,2013,1481,2014,1517,1518,1540
Benzo[a]anthracene 1541
Benzo(a)anthracene 1558
Benzo[*a*]anthracene 1560,1561,1562,1563,1567,1587
Benzoate 338
Benzocaine 125,872
Benzo[*b*]fluoranthene 2375,310,311,1388,1411,1482,2028, 1408,2010,1409,2011,1434,1435,1451,1936,1480,2013,1481,2014,1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524,1540, 1541,1552,1553,1554,1555,1556,1557,1558,1560,1561,1562,1563,1564,1567,1587,1795,1891
Benzo[*j*]fluoranthene 1408,2010,1409,2011,1451,1936,1540,1541,1795,1891
Benzo[*k*]fluoranthene 2375,310,311,1388,1411,1482,2028,1408,2010, 1409,2011,1434,1435,1451,1936,1480,2013,1481,2014,1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524,1540,1541,1552,1553, 1554,1555,1556,1557,1558,1560,1561,1562,1563,1564,1567,1587,1795,1891
Benzoic acid 37,1105,183,279,280
Benzoic acid 334,332,335,339,340,346,347,348,349, 910,1236,1552,1553,1554,1555,1556,1557,1558,1564
Benzoic acid, 0.7% 1993
Benzoin 2877,38,939,2878,940
Benzoin methyl ether 1237,3029
Benzo[ghi]perylene 2375,310
Benzo[*ghi*]perylene 311
Benzo[ghi]perylene 1388,1411,1482,2028
Benzo[*ghi*]perylene 1408,2010,1409,2011,1429,1434,1435,1451,1936
Benzo[*g,h,i*]perylene 1480,2013,1481,2014
Benzo[*ghi*]perylene 1483,2029,2365,2420
Benzo[ghi]perylene 1506,2075
Benzo[*ghi*]perylene 1507,2076,1517,1518
Benzo[ghi]perylene 1524
Benzo[*ghi*]perylene 1540,1541
Benzo[ghi]perylene 1552,1553,1554,1555
Benzo[*ghi*]perylene 1556
Benzo[ghi]perylene 1557
Benzo[*ghi*]perylene 1558,1560,1561,1562,1563
Benzo[ghi]perylene 1564
Benzo[*ghi*]perylene 1567,1587
Benzo[ghi]perylene 1795,1891
Benzophenone 840
Benzo[*a*]pyrene 2375,310,311,1388,1411,1482,2028,1408,2010, 1409,2011,1434,1435,1451,1936,1480,2013,1481,2014,1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524,1540,1541,1552,1553, 1554,1555,1556,1557,1558,1560,1561,1562,1563,1564,1567,1587,1795,1891
Benzo[*e*]pyrene 1408,2010,1409,2011,1567,1587
Benzo[a]pyrene-d_{12} 1795,1891
Benzoylecgonine 427,464
Benzoylecgonine solution 481
Benzyl acetate 2111,2184,2183,2446
Benzyl alcohol 1484,2030,2366,2421, 1550,1551,1552,1553,1554,1555,1556,1557,1558,1564
Benzyl benzoate 1478,1769,2009,2192
Benzyl butyl phthalate 1483,2029,2365,2420,1507,2076,1556,2191
Benzyl chloride 1568,1588,2322,2344
Benzyl 4-hydroxybenzoate 284
Benzylisoeugenol 2111,2184
4-Benzyl-2-oxazolidinone 2570,39
Benzylparaben 282,283,286
Benzyl salicylate 2183,2446
α-*cis*-Bergamotene 2050,2434,2096,2131
α-*trans*-Bergamotene 2050,2434
trans-α-Bergamotene 2096
α-*trans*-Bergamotene 2096
trans-α-Bergamotene 2099,2105
α-*trans*-Bergamotene 2106,2120
trans-α-Bergamotene 2121
β-*trans*-Bergamotene 2096,2138
Bergamot oil 2113
Bergapten 1262
Beta blockers 139,943
beta-Lactoglobulin A 744
Betamethasone 169
beta-Pinene 2047,2175,2351,2353
Betaxolol 1114,1195
BHA 1898,2182
α-BHC 1382,1396,1439,1925,1469,1994,2359,2409,1506,2075,1513,1524,1532,1571,1591,2325,2347,1604,1694,1835,1941,2296,2693
β-BHC 1382,1396,1439,1925,1466,1740,1858,1989,2356,2384,2392,2406,1469,1994,2359,2409, 1506,2075,1507,2076,1512,1513,1514,1516,1524,1532,1571,1591,2325,2347,1604,1889,2068
γ-BHC 1381,1395,1438,1924,1382,1396,1439,1925,1388,1411,1482,2028,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1513,1516,1524,1532,1571,1591,2325,2347,1604

δ-BHC 1382,1396,1439,1925,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1532,1604,1889,2068
BHT 1898,2182,1942
Bicycloelemene 2050,2434,2124,2131
Bicyclogermacrene 2050,2434,2131,2137,2138,2142,2170
Bifenazate 1889,2068
Bifenox 1886,2065
Bifenthrin 1404,2001,1886,2065
Bilirubin 142
Biliverdin 142
1,1'-Binaphthyl-2,2'-diyl hydrogenphosphate 2571,41
Bioallethrin-1 1887,2066
Bioallethrin-2 1887,2066
Biogenic amines 145
Biotin 1238,3030,1300,1306,1307,1308,1333
2,2′-Biphenol 492
Biphenyl 842,845,1408,2010, 1409,2011,1441,1927,1442,1928,1443,1929,1564,1889,2068
4-Biphenylacetic acid 1174
(E)-α-Bisabolene 2050,2434,2096
(Z)-α-Bisabolene 2096,2121
β-Bisabolene 2050,2434,2096,2099,2105,2106,2120,2121
(E)-γ-Bisabolene 2050,2434,2096,2120
(Z)-γ-Bisabolene 2096,2120
α-Bisabolol 2050,2434,2096,2120
epi-β-Bisabolol 2096
Bis(2-butoxyethyl) phthalate 1478,1769,2009,2192
Bis(2-n-butoxyethyl) phthalate 1865,2008,2394,2416,2191
Bis(2-chloroethoxy)methane 1524,1552,1553,1554,1555,1556,1557,1558,1564
Bis(2-chloroethyl) ether 1524,1552,1553,1554,1555,1556,1557,1558,1564
Bis-(2-chloroisopropyl) ether 1524,1552,1553,1554,1555,1556,1557,1558,1564
3,6-Bis(2-chlorophenyl)-1,2,4,5-tetrazine 1889,2068
Bisdemethoxycurcumin 1331
Bis(2-ethoxyethyl) phthalate 1478,1769,2009,2192,1865,2008,2394,2416,2191
Bis(2-ethylhexyl) adipate 1506,2075,1507,2076
Bis(2-ethylhexyl) phthalate 1478,1769,2009,2192, 1483,2029,2365,2420,1506,2075,1507,2076,1524,1552,1553,1554,1555,1556,1557,1558,1564,1865,2008,2394,2416,2191
7,12-Bis(hydroxymethyl)benz[*a*]anthracene 175,304,438
Bis(2-methoxyethyl) phthalate 1865,2008,2394,2416
Bis(4-Methyl-2-pentyl) phthalate 1478,1769,2009,2192
Bis(4-methyl-2-pentyl) phthalate 1865,2008,2394,2416,2191
(1*R*)-2,2′-Bis[(*S*)-(4-methylphenyl)sulfinyl]-1,1′-binaphthalene 42
(1*S*)-2,2′-Bis[(*S*)-(4-methylphenyl)sulfinyl]-1,1′-binaphthalene 42
Bisphenol A 299,341,300
Bitertanol 1448,1682,1829,1934,1889,2068
Bivalirudin 820
Blood alcohols 2293
Bolstar 1544,1545
Bolstar (Sulprofos) 1542,1543
Bombesin 709,710,720,721
Borneol 2105,2106,2120
(−)-Bornyl acetate 2111,2184
Bornyl acetate 2131
α-Boswellic acid 1325,1326,1334,1335,1336,1337
β-Boswellic acid 1325,1326,1334,1335,1336,1337
β-Bourbonene 2095,2136,2137,2138,2167
(B) Bovine serum albmin (BSA) 1185,808
Bovine serum albumin (BSA) 829
Bovine serum albumin (BSA) dimer, 132 kD 735
Bradykinin 709,710,720,721,788
Bradykinin, fragment 1-5 709,720
Brassicasterol 1354,1412,1875,2034
Bromacil 2478,6,2879,945,1467,1990,2357,2407,1506,2075,1507,2076,1889,2068
4-Bromoacetanilide 492
Bromobenzene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549
2-Bromobutane 1706,2217,2514,2854
Bromobutide 1886,2065
α-Bromo-γ-butyrolactone 1656,2496
Bromochloromethane 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549,1565,1566
Bromodichloromethane 1494,2058,2371,2441,1497,2061, 1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344
4-Bromo-2,5-dimethoxyphenethylamine hydrochloride solution 1424,457,483
4-Bromodiphenyl ether 1556,1558
(R)-(-)-Bromo-DragonFLY hydrochloride solution 228,1424,457,483
4-Bromofluorobenzene 1504,2073,1519,1520
4-Bromofluorobenzene 1546
4-Bromofluorobenzene 1547,1548,1549,1565,1566

Bromoform 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344
2-Bromohexadecanoic acid 2755,538
Bromomethane 1494,2058,2371,2441,1496,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1569,1589,2323,2345
2-Bromo-3-methylbutyric acid 2572,43
1-Bromo-2-nitrobenzene (I.S.) 1544,1545
2-Bromooctanoic acid methyl ester 1657,2497
2-Bromopentane 1706,2217,2514,2854
2-Bromophenol 1359,1386,1407,1475,1755,2005,1531
4-Bromophenyl phenyl ether 1524,1552,1553,1554,1555,1557,1564
Bromophos 1440,1677,1824,1926,1886,2065
Bromophos-ethyl 1350,1401,1860,1995,1447,1681,1828,1933
Bromopropylate 1886,2065
Brompheniramine 890,891
Bromuconazole-1 1889,2068
Bromuconazole-2 1889,2068
BSA (bovine serum albumin) 758
BSA carboxyamidomethylated tryptic digest 541
BSA dimer 734
Buphedrone 434,2049,2433
Buphedrone hydrochloride solution 243,468,434,472,476
Buphedrone ephedrine metabolite hydrochloride solution 470,474
Bupirimate 1887,2066
Bupivacaine hydrochloride monohydrate 2880,947,2881,948,2882,949,2198,2850
Buprenorphine solution 692
Buprenorphine glucuronide solution 692
Buprofezin 1886,2065
Bupropion hydrochloride 132,907,1189,231
Buspirone 914,918
Buspirone hydrochloride 1202
Butabarbital 414,925,415,926,417,929,418,930,928
Butachlor 1506,2075,1507,2076,1888,2067
1,3-Butadiene 1568,1588,2322,2344,1665,1723
Butafencil 1888,2067
Butalbital 1200,269,485,1201,270,486,415,926
Butamifos 1430,1641,1796,1892,1885,2064
Butanal 1969
Butane 1610,1611,1612
n-Butane 1592,1665
n-Butane 1723
n-Butane 1751
n-Butane (215 ng on column) 1752
1,4-Butanediol 1703,1975,2185,1704,1976,2186,1705,1977,2187
2,3-Butanediol 1703,1975,2185,1704,1976,2186,1705,1977,2187,2060,2443
2,3-Butanedione 2056,2439
Butanetriol 1638
(*S*)-(−)-1,2,4-Butanetriol 1632
Butanetriol (I.S.) 1631,1633,1634
Butanoic acid 1971,2405
Butanol 1490,1580,2318,2330,1969
n-Butanol 2211
n-Butanol 2212,2452
iso-Butanol 2210,2211,2212,2452,2213,2214,2453
sec-Butanol 1644
sec-Butanol 1676
sec-Butanol 1725,1726,1727,1969,2211
sec-Butanol 2212,2452,2213,2214,2453
tert-Butanol 1644,1721,1722
1-Butanol 1431,1572,1644,1666,1676,1725,1726,1727,1895,2210
1-Butanol solution 2213,2214,2453
2-Butanol 1507,2076,1593,1895,2292,2464,2294
R-(-)-2-Butanol 1661,2500
S-(+)-2-Butanol 1661,2500
R-(-)-2-Butanol (O-Acetyl derivative) 1659,2498
S-(+)-2-Butanol (O-Acetyl derivative) 1659,2498
R-(-)-2-Butanol (O-TFA derivative) 1660,2499
S-(+)-2-Butanol (O-TFA derivative) 1660,2499
sec-Butanone 2210
2-Butanone 1504,2073,1525,1546,1547,1548,1549, 1565,1566,1568,1588,2322,2344,1676,1726,1727,2056,2439,2210,2211,2212,2452,2213,2214,2453
2-Butanone-2,4-dinitrophenylhydrazone 22,2334,23,2335
2-Butanone (2,4-DNPH derivative) 2336,24
1-Butene 1665,1723
cis-2-Butene 1612,1665,1723
trans-2-Butene 1665,1723
3-Butenone 2056,2439
l-Buthionine sulfoximine 121

Butorphanol 2883,950,2884,951
2-Butoxyethanol 1703,1975,2185
2-Butoxyethanol (butyl Cellosolve®) 1704,1976,2186
2-(2-Butoxyethoxy)ethanol 1703,1975,2185
2-(2-Butoxyethoxy)ethanol (butyl CARBITOL™) 1704,1976,2186
Butyl acetate 1676,1876,2035,2396,2423,1969,2210,2211,2212,2452,2213,2214,2453
n-Butyl acetate 1431,1572,1675,1725,1726,1727,1780
sec-Butyl acetate 1780
n-Butyl alcohol 1780
sec-Butyl alcohol 1780
Butylamine 1776
sec-Butylamine 1650,2491
N-Butylaniline 32
Butylate 1506,2075,1890,2069
Butylbenzene 33,1546,1547,1548,1549
n-Butylbenzene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1612,2300,2467
iso-Butylbenzene 1610
sec-Butylbenzene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549
sec-Butylbenzene 1610
sec-Butylbenzene 1612
tert-Butylbenzene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549
N-Butylbenzene 1610
Butylbenzyl phthalate 1388,1411,1482,2028,1478,1769,2009,2192,1506,2075,1524,1552,1553,1554,1555,1557,1558,1564, 1865,2008,2394,2416
Butyl cellosolve 1725,1726,1727,1780
Butylcyclohexane 1528,1530
2-*sec*-Butyl-4,6-dinitrophenol 1477,1757,2007,2364,2389,2415,1531
tert-Butyl ethyl ether 1721
Butyl hexanoate 1876,2035,2396,2423,1971,2405
tert-Butylhydroquinone 276,337,1282,292,1898,2182
tert-Butylhydroxyanisole 276,337
3-*tert*-Butyl-4-hydroxyanisole 1282,292
Butyl 4-hydroxybenzoate 1748,1998,2190,2223,2387,2412,2447,2454
tert-Butylhydroxytoluene 276,337
(±)-Butyl-γ-lactone 1729,2118,2529,2676
Butyl 2-methylbutanoate 1876,2035,2396,2423
tert-Butyl methyl ether 1504,2073,1527,1565,1566,1568,1588,2322,2344,2210,2211,2212,2452,2213,2214,2453
Butylone hydrochloride 2049,2433
Butylone hydrochloride solution 243,468,434,470,475
Butylparaben 284
Butyl paraben 282,283,286
Butylparaben 289
Butyl paraben 290,291,1106
Butyolne 435
Butyraldehyde 21,2326
Butyraldehyde-2,4-dinitrophenylhydrazone 22,2334,23,2335
Butyraldehyde-2,4-DNPH 2337
Butyraldehyde (2,4-DNPH derivative) 2336,24
Butyric acid 1808,1908,2244,1809,1909,2245,1873,2031,2278,1969,1970,2404
Butyric acid, 0.7% 1993
Butyric acid methyl ester (C4:0) 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
Butyric acid methyl ester (C4:0) at 4 wt % 1822,1922,2254
β-Butyrolactone 322,1662,2501,1663,2502,1664,2503
γ-Butyrolactone 2056,2439

— C —

C1 718
C10:0 1823,1923,2255,1951,1955,1956,2258,1958,2261
C10:1 1951,1955,1956,2258,1958,2261
C11:0 1823,1923,2255,1951,1955,1956,2258,1958,2261
C12:0 1823,1923,2255,1951,1955,1956,2258,1958,2261
C13:0 1823,1923,2255,1951,1955,1956,2258,1958,2259
C13:0 iso 1951,1955,1958
C13:0 anteiso 1951,1955,1958
C14:0 1823,1923,2255,1870,2021,1872,2023,2277,1942,1943,1951,1952,1953,1955,1956,2258,1958,2259,2261
C14:0 iso 1951,1955,1956,2258,1958
C14:1 1823,1923,2255,1951,1955,1956,2258,2261
C14:1n9c 1958
C14:0 methyl ester 1947
C15:0 1823,1923,2255,1951,1955,1956,2258,1958,2261
C15:0 iso 1951,1955,1956,2258,1958,2261
C15:1 1823,1923,2255
C15:0 anteiso 1951,1955,1956,2258,1958,2261
C15:0 methyl ester 1947
C16:0 1823,1923,2255,1870,2021,1872,2023,2277,1942,1943,1951,1952,1953,1955,1956,2258,1958,2259,2261
C16:0 iso 1951,1955,1956,2258,1958
C16:1 1823,1923,2255
C16:1ω7 2259

C16:1n10t 1958
C16:1n7 1870,2021,1942,1943,1952,1953
C16:1n7c 1958
C16:1n7 methyl ester 1947
C16:1n9c 1951,1955,1956,2258,1958,2261
C16:1n9t 1951,1955
C16:2n4 1870,2021,1942,1943,1952,1953
C16:3n4 1870,2021,1942,1943,1952,1953
C16:0 methyl ester 1947
C17:0 1823,1923,2255,1951,1955,1956,2258,1958,2261
C17:0 iso 1951,1955,1956,2258,1958,2261
C17:1 1823,1923,2255,1951,1955,1956,2258,1958
C17:1n9c 2261
C17:0 anteiso 1951,1955,1956,2258,1958,2261
C18:0 1823,1923,2255,1870,2021,1872,2023,2277,1942,1943,1951,1952,1953,1955,1956,2258,1958,2259,2261
C18:0 iso 1951,1955,1956,2258,1958,2261
C18:1 2259
C18:1 D 11c 1801,1901,2243
C18:1 Δ 11c 1799,1899,2241
C18:1 Δ 11t 1799,1899,2241
C18:1 D 12c 1801,1901,2243
C18:1 Δ 12c 1799,1899,2241
C18:1 Δ 12t 1799,1899,2241
C18:1 D 13c 1801,1901,2243
C18:1 Δ 13c 1799,1899,2241
C18:1 Δ 13t 1799,1899,2241
C18:1 Δ 6c 1799,1899,2241
C18:1 Δ 6t 1799,1899,2241
C18:1 Δ 7c 1799,1899,2241
C18:1 Δ 7t 1799,1899,2241
C18:1 D 9c 1801,1901,2243
C18:1 Δ 9c 1799,1899,2241
C18:1 Δ 9t 1799,1899,2241
C18:2 2259
C18:2 D 9c, 12c 1801,1901,2243
C18:2 Δ 9c,12c 1799,1899,2241
C18:2 D 9c, 12t 1801,1901,2243
C18:2 Δ 9c,12t 1799,1899,2241
C18:2 D 9t, 12c 1801,1901,2243
C18:2 Δ 9t,12c 1799,1899,2241
C18:2 D 9t, 12t 1801,1901,2243
C18:2 Δ 9t,12t 1799,1899,2241
C18:3 2259
C18:3ω6 2259
C18:3 D 9c, 12c, 15c 1801,1901,2243
C18:3 Δ 9c,12c,15c 1799,1899,2241
C18:3 Δ 9c,12c,15t 1799,1899,2241
C18:3 D 9c, 12t, 15c 1801,1901,2243
C18:3 Δ 9c,12t,15c 1799,1899,2241
C18:3 Δ 9c,12t,15t 1799,1899,2241
C18:3 D 9t, 12c, 15c 1801,1901,2243
C18:3 Δ 9t,12c,15c 1799,1899,2241
C18:3 D 9t, 12c, 15t 1801,1901,2243
C18:3 Δ 9t,12c,15t 1799,1899,2241
C18:3 D 9t, 12t, 15c 1801,1901,2243
C18:3 Δ 9t,12t,15c 1799,1899,2241
C18:3 D 9t, 12t, 15t 1801,1901,2243
C18:3 Δ 9t,12t,15t 1799,1899,2241
C18:4 2259
C18:1n10c 1958
C18:1n10t 1951,1955,1956,2258,1958
C18:1n11c 1951,1955,1956,2258,1958,2261
C18:1n11t 1951,1955,1956,2258,1958,2261
C18:1n12c 1951,1955,1956,2258,1958,2261
C18:1n12t 1955,1956,2258
C18:1n13c 1951,1955,1956,2258,1958,2261
C18:1n13t 1955
C18:1n14c 1951,1955,1958,2261
C18:1n14t 1955
C18:1n15c 1951,1955
C18:1n15t 1955
C18:1n16t 1951,1955,1956,2258,1958
C18:1n5c 1955,1958
C18:1n5t 1951
C18:1n6c 1955,1956,2258,1958
C18:1n6t 1951,1955,1958,2261
C18:1n7 1870,2021,1942,1943,1952,1953
C18:1n7c 1955,1956,2258

C18:1n7 methyl ester 1947
C18:1n7t 1951,1955,1956,2258,1958,2261
C18:1n8c 1955
C18:1n8t 1951,1955,1956,2258,2261
C18:1n9 1870,2021,1872,2023,2277,1942,1943,1952,1953
C18:1n9c 1823,1923,2255,1951,1955,1956,2258,1958,2261
C18:1n9 methyl ester 1947
C18:1n9t 1823,1923,2255,1951,1955,1956,2258,1958,2261
C18:2n6 1870,2021,1872,2023,2277,1942,1943,1952,1953
C18:2n6c 1823,1923,2255
C18:2n6 methyl ester 1947
C18:2n6t 1823,1923,2255
C18:2n9c,11t 1951,1955,1956,2258,1958,2261
C18:2n9c,12c 1951,1955,1956,2258,1958,2261
C18:2n9t,12t 1951,1955,1956,2258,2261
C18:2n9t,12c 1951,1956,2258,2261
C18:3n3 1823,1923,2255,1942,1951,1952,1955,1956,2258,1958,2261
C18:3n3 (ALA) 1870,2021,1943,1953
C18:3n3 methyl ester 1947
C18:3n4 1870,2021,1942,1943,1952,1953
C18:3n6 1823,1923,2255,1942,1951,1955,1956,2258,2261
C18:4n3 1870,2021,1872,2023,2277,1942,1943,1952,1953
C18:4n3 methyl ester 1947
C18:3 D 9c, 12t, 15t and C18:3 D 9c, 12c, 15t 1801,1901,2243
C18:1 D 12t, C18:1 D 6c, C18:1 D 7c and C18:1 D13t 1801,1901,2243
cis-C18:1 FAME isomers 1802,1902,1805,1905
trans-C18:1 FAME isomers 1802,1902,1805,1905
C18:0 methyl ester 1947
C19:1 1958
C2 718
C20:0 1823,1923,2255,1872,2023,2277,1951,1955,1958,2259,2261
C20:2 1823,1923,2255
C20:4ω6 2259
C20:1n9 1823,1923,2255,1870,2021,1872,2023,2277,1942,1943,1952,1953,1958,2261
C20:1n9c 1956,2258
C20:1n9 methyl ester 1947
C20:2n6 1956,2258,2261
C20:3n3 1823,1923,2255,1870,2021,1942,1943,1952,1953,2261
C20:3n6 1823,1923,2255,1956,2258,1958,2261
C20:4n3 1870,2021,1942,1943,1952,1953
C20:4n6 1823,1923,2255,1870,2021,1942,1956,2258,1958,2261
C20:5n3 1823,1923,2255,1872,2023,2277,1942,1951,1952,1956,2258,1958,2261
C20:5n3 (EPA) 1870,2021,1943,1953
C20:5n3 methyl ester 1947
C21:0 1823,1923,2255,1956,2258,1958
C21:5n3 1872,2023,2277
C22:0 1823,1923,2255,1872,2023,2277,1958
C22:2 1823,1923,2255
C22:5ω3 2259
C22:6ω3 2259
C22:1LyLn 324
C22:1n9 1823,1923,2255
C22:1n9 methyl ester 1947
C22:4n6 1951,2261
C22:5n3 1823,1923,2255,1870,2021,1872,2023,2277,1942,1943,1952,1953,1956,2258,1958,2261
C22:5n3 methyl ester 1947
C22:6n3 1823,1923,2255,1872,2023,2277,1942,1951,1952,1956,2258,2261
C22:6n3 (DHA) 1870,2021,1943,1953
C22:6n3 methyl ester 1947
C23:0 1823,1923,2255,1872,2023,2277,1958
C23:1 1958
C24:0 1823,1923,2255,1872,2023,2277,1958
C24:1LyLn 324
C24:1n9 1823,1923,2255,1872,2023,2277,1958,2261
C25:0 1958
C26:0 1956,2258,2261
C3 718
C4 718
C4:0 1823,1923,2255,1951,1955,1958,2261
C40-C46 esters 1884,2063
C5-C11 alkanes 1596
C5-C11 hydrocarbons 1593
C5-C9 alkanes 1597
C6+ 1628
C6:0 1823,1923,2255,1951,1955,1956,2258,1958,2261
C7:0 1958
C8:0 1823,1923,2255,1951,1955,1956,2258,1958,2261
C9:0 1951,1955,1958

Cadaverine ... 143
β-Cadinene ... 2103
γ-Cadinene ... 2131
δ-Cadinene ... 2050,2434,2096,2124,2131,2142,2161,2166
(+)-δ-Cadinene ... 2170
Cadin-4-en-10-ol ... 2095,2131
Cadusafos ... 1350,1401,1860,1995
Cadusafos-1 ... 1885,2064
Cadusafos-2 ... 1885,2064
Cafenstrole ... 1886,2065
Caffeic acid ... 376,1259
Caffeine ... 130,893,1362,1427,148,946,149,1105,183,334,335,339,340,342,343,346,347,348,349,850,1119,1275,2288,2289
Caffeoylferuloylquinic acid (3C,4F-QA) ... 1275
Caffeoylferuloylquinic acid (3F,4C-QA) ... 1275
Caffeoylferuloylquinic acid (3F,5C-QA) ... 1275
Caffeoylferuloylquinic acid (4C,5F-QA) ... 1275
Caffeoylquinic acid (1-CQA) ... 1275
Caffeoylsinapylquinic acid (CSQA) ... 1275
Caftaric acid ... 376,377
α-Calacorene ... 2124
Calcium pantothenate ... 1299,1300,1306,1307,1308,1332,1333
Calphostin C ... 151,539
Campesterol ... 1354,1412,1875,2034
Campesterol solution ... 1874,2033
Camphene ... 2050,2434,2095,2096,2099,2103,2105,2106,2111,2184,2120,2121,2131,2137,2138,2142,2166,2170
Campherenol ... 2050,2434,2096,2120
Camphor ... 1670,1910,2085,2199,2504,2665,2691,2851,2096,2103,2120,2166
Cannabidiol ... 421,459
Cannabidiol solution ... 487
Cannabinol ... 421,459
Cannabinol solution ... 487
Capric acid methyl ester ... 1818,1918,2250,1819,1919,2251
Capric acid methyl ester (C10:0) ... 1815,1915,2247,1817,1917,2249
Capric acid methyl ester (C10:0) at 4 wt % ... 1822,1922,2254
Caproic acid ... 1808,1908,2244,1873,2031,2278
Caproic acid methyl ester ... 1818,1918,2250,1819,1919,2251
Caproic acid methyl ester (C6:0) ... 1815,1915,2247
Caproic acid methyl ester (C6:0) ... 1817,1917,2249
Caproic acid methyl ester (C6:0) at 4 wt % ... 1822,1922,2254
Caprolactam ... 1564
Caprylic acid ... 1808,1908,2244
Caprylic acid methyl ester ... 1818,1918,2250,1819,1919,2251
Caprylic acid methyl ester (C8:0) ... 1815,1915,2247,1817,1917,2249
Caprylic acid methyl ester (C8:0) at 4 wt % ... 1822,1922,2254
Captafol ... 1448,1682,1829,1934
Captan ... 1347,1394,1798,1894,1430,1641,1796,1892,1571,1591,2325,2347,1797,1893,1889,2068
Captofol ... 1889,2068
Captopril ... 123,849,129,892,896
Carbamazepine ... 851
Carbamazepine solution ... 1228
Carbaryl ... 1347,1394,1798,1894,1445,1679,1826,1931,1797,1893
Carbazole ... 1524,1540,1541,1552,1553,1554,1555,1556,1557,1558,1564
Carbendazim ... 110,15,111,16,1418,404,1419,406
Carbetamide ... 1890,2069
S-(−)-Carbidopa ... 162,2634,163,2635
Carbinoxamine ... 890
Carbofuran ... 1,295,294,302,1391,305,1445,1679,1826,1931
Carbon dioxide ... 1622,1628,1639,1747,1749,1750,1751,1753
Carbon dioxide (215 ng on column) ... 1752
Carbon disulfide ... 1504,2073,1565,1566,1568,1588,2322,2344,1582,2332,1685,1686,2381,1687,2382,1871,2022,2395,2417
Carbon disulfide (1 ppm) ... 1783
Carbon disulfide (solvent) ... 1486,1487
Carbonfenthion ... 1887,2066
Carbonic anhydrase ... 742,748,749,750,751,752
Carbonic Anhydrase from bovine erythrocytes ... 738,744
Carbon monoxide ... 1639,1749,1750,1753
Carbon Monoxide ... 1754
Carbon monoxide (215 ng on column) ... 1752
Carbon tetrachloride ... 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1674,1676,1725,1726,1727,2200,2201,2202,2448,2203,2204,2449,2224
Carbonyl sulfide ... 1686,2381,1687,2382
Carbonyl sulfide (1 ppm) ... 1783
Carbophenothion ... 1419,406,1542,1543,1544,1545
Carboxin ... 1466,1740,1858,1989,2356,2384,2392,2406,1471,1746,1861,1997,2361,2386,2393,2411,1506,2075
Carboxine ... 1507,2076
Cardiac drugs ... 954
2-Caren-10-al ... 2047,2175,2351,2353

3-Carene ... 2099,2170
γ-3-Carene ... 2111,2184
δ-3-Carene ... 2050,2434,2120,2131,2142
Carfentrazone-ethyl ... 1888,2067
(±)-Carnitine hydrochloride ... 2756,547
Carnosic acid ... 1284
Carnosol ... 1284
α-Carotene ... 1239,344,1240,1317
β-Carotene ... 1239,344,1240,1317
Carotenoids ... 1243
cis-Carveol ... 2103,2131,2166
trans-Carveol ... 2095,2167
trans-Carveol acetate ... 2167
Carvone ... 322,2096,2103,2120,2138,2166,2167
D-Carvone ... 2086,2666,2087,2667,2090,2670,2091,2671,2092,2672,2093,2673,2094,2674
L-Carvone ... 2088,2668,2089,2669,2090,2670,2091,2671,2092,2672,2093,2673,2094,2674
(*E*)-Caryophyllene ... 2050,2434
(−)-*trans*-Caryophyllene ... 2105
(*E*)-Caryophyllene ... 2120
(−)-*trans*-Caryophyllene ... 2170
(E)-Caryophyllene ... 2095,2096,2121,2124,2131,2137,2138,2161,2166,2167
β-Caryophyllene ... 2099,2103,2106,2111,2184,2136,2142
9-epi-(E)-Caryophyllene ... 2131
Caryophyllene oxide ... 2124,2131,2137,2138,2142,2161
Catalase from bovine liver ... 744
Catechin ... 1244
(+)-Catechin ... 376
(+)-Catechin hydrate ... 1259
Catechin gallate ... 1244
Catecholamine Mix 1 (Epinephrines) solution ... 271
Catecholamine Mix 2 (Metanephrines) solution ... 271
Cedrol ... 2111,2184
Cedryl acetate ... 2111,2184
Cefadroxil ... 882,956
Cefsulodin ... 882,956
Celecoxib ... 898
Cellobiose ... 383
Cellosolve acetate ... 1780
Cephalomannine ... 1104,1153,1154,1220
Cephapirin ... 882,956
Cetuximab ERBITUX® ... 549
Chenodeoxychloic acid ... 234
Chenodeoxycholic acid ... 141,234
Chinomethionate ... 1889,2068
Chlomethoxyfen ... 1890,2069
Chloramphenicol ... 127,877,320,403,879
DL-*threo*-Chloramphenicol-d_5 ... 320,403
Chlorbenzilate ... 1888,2067
cis-Chlordane ... 1347,1394,1798,1894
cis-Chlordane ... 1432,1671,1811,1911,2469,2505,2657,2692,1458,1707,1851,1979,2470,2515,2658,2694
cis-Chlordane ... 1797,1893
α-Chlordane ... 1382,1396,1439,1925,1388,1411,1482,2028,1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1532,1604
γ-Chlordane ... 1382,1396,1439,1925,1388,1411,1482,2028,1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1532,1604
Chlordiazepoxide ... 915,916,917,919
Chloreneb ... 1448,1682,1829,1934
Chlorfenapyr ... 1886,2065
Chlorfenson ... 1886,2065
Chlorfenvinphos ... 1542,1543,1545
Chlorfenvinphos-Z ... 1885,2064
Chlorfenviphos-E ... 1885,2064
Chlorhexidine ... 281,957
Chloridazon ... 1890,2069
Chlorimipramine ... 2279,2303,2459,2468
Chlormefos ... 1890,2069
Chlorneb ... 1506,2075
Chloroacetonitrile ... 1504,2073
p-Chloroamphetamine ... 1172,213
2-Chloroaniline ... 1655,1672
3-Chloroaniline ... 1564
4-Chloroaniline ... 1484,2030,2366,2421,1552,1553,1554,1555,1556,1557,1558,1673
Chlorobenzene ... 1493,2057,2370,2440,1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071, 1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1676,1725, 1726,1727,1794,2205,2206,2207,2450,2208,2209,2451
Chlorobenzene-d_5 ... 1500,1586,2321,2343,1519,1520,1523
Chlorobenzene-d_5 ... 1546
Chlorobenzene-d_5 ... 1547
Chlorobenzene-d_5 ... 1548,1549,1565,1566
Chlorobenzilate ... 1506,2075,1507,2076,1509,1510,1511,1550,1551

2-Chlorobiphenyl 1388,1411,1482,2028,1506,2075,1507,2076
1-Chlorobutane 1504,2073
2-Chlorobutane 1706,2217,2514,2854
Chlorodibromomethane 1498,2062,2373,2444,1502,2071,1503,2072,1505,2074,1523
4-Chlorodiphenyl ether 1556,1558
Chloroethane 1494,2058,2371,2441,1496,1497,2061,
1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344
2-Chloroethyl vinyl ether 1494,2058,2371,2441,1519,1520,1521,1522,1523
3-Chloro-4-fluoroaniline 1655,1672
Chloroform 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,
1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1674,1676,1725,1726,
1727,2205,2206,2207,2450,2208,2209,2451,2226,2456
Chlorofos 1430,1641,1796,1892
Chlorogenic acid (5-CQA) 1275
Chloromethane 1494,2058,2371,2441,1496,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,
1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1569,1589,2323,2345
3-Chloro-4-methylaniline 1672
4-Chloro-2-methylaniline 1673
4-Chloro-4-methylaniline 1655
4-Chloro-3-methylphenol 90,1359,1386,1407,1475,1755,2005,1476,1756,2006,2363,2388,2414,
1477,1757,2007,2364,2389,2415,1524,1531,1552,1553,1554,1555,1556,1557,1558,1564
3-(Chloromethyl)pyridine 1673
2-Chloronaphthalene 1524,1552,1553,1554,1555,1556,1557,1558,1564
Chloroneb 1430,1641,1796,1892,1449,1683,1830,1935,1507,2076,1509,1510,1511
4-Chloro-2-nitroaniline 1655,1672
2-Chlorophenol 90,1359,1386,1407,1475,1755,2005,
1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415,1524,1531,1552,1553,1554,1555,1556,1557,1558,1564
2-Chlorophenol-3,4,5,6-d_4 1556
2-Chlorophenol-d_4 1524,1550,1551,1552,1553,1554,1555,1557,1564
2-chlorophenol-d4 1558
2-(2-Chlorophenoxy)propionic acid 2479,7,2481,8
2-(4-Chlorophenoxy)propionic acid 2482,9,2480
p-Chlorophenylalanine 1172,213
4-Chloro-DL-phenylalanine 2758,552,2290,2462
2-Chloro-DL-phenylanine 2757,551
4-Chlorophenyl phenyl ether 1524,1552,1553,1554,1555,1557,1564
3-Chloropropane 1497,2061
Chloropropylate 1509,1510,1511
Chloropyrifos 1350,1401,1860,1995,1351,1403,1862,2000,1506,2075,1544,1545,1885,2064
Chloropyrifos-methyl 1885,2064,2004,2413
Chloropyriphos-methyl 1447,1681,1828,1933
Chloroquine diphosphate salt 2885,958
Chlorothalonil 1347,1394,1798,1894,1430,1641,1796,1892,
1506,2075,1507,2076,1509,1510,1511,1571,1591,2325,2347,1797,1893
o-Chlorotoluene 1504,2073,1547
p-Chlorotoluene 1504,2073,1547
2-Chlorotoluene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1505,2074,1546,1548,1549
4-Chlorotoluene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1505,2074,1546,1548,1549
Chlorotoluron 5
Chlorpheniramine 850,858,859,871,890,912,971,1145
(±)-Chlorpheniramine 891
(±)-Chlorpheniramine maleate salt 2886,959,1341,3024
Chlorpiriphos-methyl 1446,1680,1827,1932
Chlorpromazine 165,578
Chlorpropham 1,295,294,302,2374,303,1506,2075,1507,2076,1886,2065
Chlorpropylate 1889,2068
Chlorpyrifos 308,1347,1394,1798,1894,1430,1641,1796,1892,1507,2076,1542,1543,1585,2342,1797,1893
Chlorpyrifos-methyl 1419,406,1542,1543
Chlorthal-dimethyl 1507,2076,1887,2066
Chlorthalidone 851,2887,960,2888,961,2889,962
Chlorthalonil 1889,2068
Chlorthiophos 1890,2069
Chlortoluron 110,15,111,16
Chlorzoxazone 963
Cholecalciferol 1293,217,420
Cholecalciferol (D3) 1292,216,1294,218,1297,219,1251,1252,1255,1256,1253,1298
5α-Cholestane 1874,2033
Cholesterol 1354,1412,1875,2034
Cholic acid 141,234
Chrysene 2375,310,311,1388,1411,1482,2028,1408,2010,1409,2011,1451,1936,1480,2013,1481,2014,
1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524,1540,1541,1552,1553,1554,1555,1556,1557,1558,1560,1561,1562,1563,1564,
1567,1587,1795,1891
Chrysene-d_{12} 1388,1411,1482,2028,1483,2029,2365,2420,1506,2075,
1507,2076,1524,1550,1551,1552,1553,1554,1555,1556,1557,1564
Chrysene-d_{12} 1567,1587
Chrysene-d12 (I.S.) 1558
Chrysin 352
α-Chymotrypsin 754,755,756

Chymotrypsinogen A ... 759
α-Chymotrypsinogen A ... 739
β-Chymotrypsinogen ... 754,755,756
Cihalothrin ... 1447,1681,1828,1933
Cimetidine ... 1173
1,4-Cineole ... 2105,2106
1,8-Cineole ... 2111,2184,2136,2142
Cinmethylin ... 1890,2069
Cinnamic alcohol ... 2111,2184
Cinnamyl alcohol ... 492,2180,2181
Cinnamyl cinnamate, mixture of isomers ... 2111,2184
Cinoxacin ... 1005,356,1199
CIPC ... 1350,1401,1860,1995
Ciprofibrate ... 2890,965
Ciprofloxacin ... 1004,355,1005,356,878,880,881,1013
Citalopram hydrobromide ... 2891,966
Citric acid ... 68,1277,368,85,1278,369,86
Citronella ... 2103
Citronellal ... 2050,2434,2096,2120,2142,2166
Citronellal ... 2099
(*R*)-(+)-Citronellal ... 2170
(±)-Citronellal ... 2183,2446
Citronellol ... 2096,2103,2112,2120,2166,2180,2181,2183,2446
Citronellyl acetate ... 2050,2434,2096,2099,2120,2131,2166
Citronellyl formate ... 2112
Citronyllyl acetate ... 2103
DL-Citrulline ... 2759,553
DL-Citrulline, FMOC derivatives ... 2778,593
Clenbuterol hydrochloride ... 140,2633,2720,419,1192,235,2647,2725,460,2894,422,969,2892,967,2893,968
Clethodim ... 1419,406
Clobazam ... 1190,232
Clobetasol propionate ... 167
Clomeprop ... 1886,2065
Clomipramine ... 1164,210
Clonazepam ... 128,887,135,935,136,936,137,937,138,938,1191,233,875,876,888,889,2291,2463
Clorazepate ... 128,887,888,889
Clothianidin ... 1358,19,1890,2069
Cloxacillin ... 1009,1041
Clozapine ... 908,909
Cocaethylene ... 462,464
Cocaethylene solution ... 1203,488
Cocaine ... 462,464,2289,2290,2462,2291,2463,2295,2465
Cocaine solution ... 454
Cocaine hydrochloride ... 432,1203,488,2288
Cocapropylene ... 2295,2465
Codeine ... 30,124,868,153,423,154,424,407,853,427,428,429,1233,854,871,912,1119,2288,2289,2290,2462,2291,2463
Codeine solution ... 264,484,481,490,692
Codeine β-D-glucuronide ... 153,423,154,424
Codeine-6-β-D-glucuronide solution ... 692
Cod liver oil ... 1946
Conalbumin ... 740
Conalbumin from chicken egg white ... 761
α-Copaene ... 2103,2124,2161,2166
(−)-α-Copaene ... 2170
β-Copaene ... 2170
Coronene ... 1567,1587
Corticosterone ... 169,1204,272
Corticosterone solution ... 1374,257
Cortisone ... 1290,204,1204,272
Cortisone 21-acetate ... 203,1204,272,453
Cotinine ... 246
Coumachlor ... 2574,46,2895,972
Coumafuryl ... 2575,47
Coumaphos ... 1347,1394,1798,1894,1350,1401,1860,1995,1351,1403,1862,2000,1542,1543,1544,1545,1797,1893
p-Coumaric acid ... 376,1205,1259
Coumarin ... 2111,2184,2181
Coumaroylquinic acid (CQA) ... 1275
Courmarin ... 2180
CP-47,497 C8 homolog (1,1-Dimethyloctyl-2-[(1R,3S)-3-hydroxycyclohexyl]-5-(2-methyloctan-2-yl)phenol) ... 449,452
CP-47,497 (2-[(1R,3S)-3-Hydroxycyclohexyl]- 5-(2-methyloctan-2-yl)phenol) ... 449
CP-47,497 (2-[(1R,3S)-3-Hydroxycyclohexyl]-5-(2-methyloctan-2-yl)phenol) ... 452
Creatine Kinase ... 556
o-Cresol ... 48,1283,1556,1558,1676,1726,1727,1794
m-Cresol ... 48,1676,1726,1727,1794
p-Cresol ... 48,1283,1556,1558,1676,1726,1727,1794
Crimidine ... 1890,2069
Crotonaldehyde ... 21,2326
Crotonaldehyde-2,4-dinitrophenylhydrazone ... 22,2334,23,2335

Crotonaldehyde (2,4-DNPH derivative) ... 2336,24
Crotoxyphos ... 1542,1543,1544,1545
Crufomate (Ruelene) ... 2576,49
Crypto-chlorogenic acid (4-CQA) ... 1275
α-Cubebene ... 2124,2161
β-Cubebene ... 2124,2161,2170
Cubenol ... 2124
Cumene ... 1492,1583,2320,2333,1493,2057,2370,2440,1546,1547, 1548,1549,1565,1566,1612,1621,1640,2210,2212,2452,2213,2214,2453
Cuminic aldehyde ... 2047,2175,2351,2353
α-Curcumene ... 2096
Curcumin ... 1331
Cyanazine ... 5,110,15,111,16,1391,305,316, 1444,1678,1825,1930,1466,1740,1858,1989,2356,2384,2392,2406,1489,1788,1877,2039,2369,2391,2397,2425,1506,2075,1507,2076, 1886,2065
Cyanidin 3-(6-acetylglucoside) ... 336
Cyanidin chloride ... 1320,1321
Cyanidin 3-glucoside ... 336
Cyanocobalamin ... 742,748,751
Cyanocobalamin (B12) ... 1299,1300,1306,1307,1308,1332,1333
Cyanofenphos ... 1887,2066
Cyanophos ... 1885,2064
Cyanuric acid ... 117,318,2078,2079,2080,2081
Cycloate ... 1448,1682,1829,1934,1506,2075,1507,2076
Cyclobarbital ... 1200,269,485,1201,270,486
Cyclodecane ... 1491,1581,2319,2331
Cyclodextrin ... 360,66
β-Cyclodextrin ... 367
Cyclohexane ... 1565,1566,1568,1588,2322,2344,1592,1612,2205,2206,2207,2450,2208,2209,2451
trans-1,2-Cyclohexanediol ... 1688,2506
Cyclohexanol ... 1676,1725,1726,1727
Cyclohexanone ... 1613,1614,1615,1616,1617,1618,1624,1625,1626,1780
3-Cyclohexene-1-carbonitrile ... 1582,2332
Cyclopentane ... 1592
Cyclopenta[cd]pyrene ... 1795,1891
Cyclopentene ... 1612
Cyclophosphamide monohydrate ... 2896,973
Cyclopropane ... 1665,1723
Cyflufenamid ... 1886,2065
Cyfluthrin-1 ... 1886,2065
Cyfluthrin-2 ... 1886,2065
Cyfluthrin-3 ... 1886,2065
Cyfluthrin-4 ... 1886,2065
Cyfluthrin isomers ... 1351,1403,1862,2000,1404,2001
Cyhalofop-butyl ... 1886,2065
Cyhalothrin ... 1404,2001
Cyhalothrin-1 ... 1887,2066
Cyhalothrin-2 ... 1887,2066
Cylert ... 974
Cymene ... 2047,2175,2351,2353
o-Cymene ... 2131
p-Cymene ... 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1505,2074, 1546,1547,1548,1549,2050,2434,2056,2439,2095,2096,2099,2103,2105,2106,2120,2121,2124,2131,2136,2137,2138,2142,2166,2167,2170
p-Cymen-8-ol ... 2131,2142
Cypermethrin-1 ... 1887,2066
Cypermethrin-2 ... 1887,2066
Cypermethrin-3 ... 1887,2066
Cypermethrin-4 ... 1887,2066
Cypermethrin isomer ... 1351,1403,1862,2000,1449,1683,1830,1935
Cyproconazole-1 ... 1888,2067
Cyproconazole-2 ... 1888,2067
Cyprodinil ... 1347,1394,1798,1894,1797,1893,1888,2067
D-Cysteine ... 2760,557
L-Cysteine ... 2760,557,1897,2304
DL-Cysteine ... 2761,558
L-Cystine ... 1897,2304
Cytidine ... 686,687,688,689,769
Cytochrome c ... 739
Cytochrome c (bovine) ... 560
Cytochrome c from chicken heart ... 704,732,733,738,762
Cytochrome c from equine heart ... 1130,746,747,1184,805
Cytochrome c, species variants ... 540,759
Cytochrome c (equine) ... 560
Cytochrome c (rabbit) ... 560
Cytochrome c, tryptic digest ... 562
Cytosine ... 684,685,765

— D —

2,4-D 1355,1389,2,298,306,307
(R,R)-DACH-ACR (N-(2-acryloylamino-(1R,2R)-cyclohexyl)-acrylamide) 2577,50
(S,S)-DACH-ACR (N-(2-acryloylamino-(1R,2R)-cyclohexyl)-acrylamide) 2577,50
Dacthal 1355,1389,2,298,1506,2075
Dacthal (dimethyl) 1509,1510,1511
DAG32 1:2 1849,1974
DAG32 1:3 1849,1974
DAG34 1:2 1849,1974
DAG34 1:3 1849,1974
DAG36 1:2 1849,1974
DAG36 1:3 1849,1974
Daidzein 1270,361,1271,362,1272
Daidzin 1270,361,1271,362,1272
Dalapon 306,307
DAMME 166,583
Danofloxacin 1004,355,1013
Dansyl-DL-glutamic acid bis(cyclohexylammonium) salt 2762,563
Dansyl-DL-leucine cyclohexylammonium salt 2763,564
Dansyl-DL-methionine cyclohexylammonium salt 2764,565,2765,566
Dansyl-DL-norleucine cyclohexylammonium salt 2766,567
Dansyl-DL-phenylalanine cyclohexylammonium salt 2767,568
Dansyl-DL-valine cyclohexylammonium salt 2768,569
Dazomet isomer 1446,1680,1827,1932
2,4-DB 306,307
2,4-DB methyl ester 306,307
3,4′-DDD 1466,1740,1858,1989,2356,2384,2392,2406
4,4′-DDD 1382,1396,1439,1925,1469,1994,2359,2409,1506,2075,1513,1516,1524,1532,1604
4,4′-DDE 1347,1394,1798,1894,1404,2001,1507,2076,1512,1514,1797,1893
2,4′-DDT 1795,1891
4,4′-DDT 1351,1403,1862,2000,1382,1396,1439,1925,1404,2001,1466,1740,1858,1989,2356,2384,2392,2406,1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1524,1532,1571,1591,2325,2347,1604,1795,1891
10-Deacetylpaclitaxel 1153
10-Deacetylbaccatin III 1154
10-Deacetyl-7-epipaclitaxel 1153,1154
10-deacetyl-7-epipaclitaxel 1220
10-Deacetylpaclitaxel 1104,1154
10-deacetyl paclitaxel 1220
10-Deacetyl-7-(β-xylosyl)paclitaxel 1154
10-Deacetyl-7-(β-xylosyl)paclitaxel C 1154
Decachlorobiphenyl 1382,1396,1439,1925,1441,1927,1442,1928,1443,1929,1469,1994,2359,2409,1512,1513,1514,1516,1532,1533,1534,1535,1538,1539,1604
2,2',3,3',4,4',5'5',6,6'-Decachlorobiphenyl (No. 209) 1402,1999
Decachlorobiphenyl (surr.) 1537
(E,E)-2,4-Decadienal 2103,2166
Decanal 1431,1572,1490,1580,2318,2330,1491,1581,2319,2331,1492,1583,2320,2333,1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436,1883,2054,2402,2437,1971,2405,2045,2350,2050,2434,2096,2099,2103,2105,2106,2111,2184,2120,2166,2170
Decane 1431,1572,1486,1487,1526,1528,1530,1595,1597,1601,1667,1602,1668
n-Decane 1612,2311,2312
n-decane 2313
n-decane 2314
Decane (C10) 1636
Decanoic acid 1873,2031,2278,1970,2404
δ-Decanolactone enantiomers 1690,2104,2508,2675
trans-2-Decenal 2170
Decylamine 1776
DEF (from oxidation of Merphos in the injection port) 1544,1545
(L)-Dehydroascorbic acid 1234
Dehydrocholic acid 141
cis-Dehydrolinalool oxide 2131
3,4-Dehydro-DL-proline 2769,570
Delphinidin 3-(6-acetylglucoside) 336
Delphinidin chloride 1320,1321
Delphinidin 3-glucoside 336
Deltamethrin 1351,1403,1862,2000,1449,1683,1830,1935
Deltamethrin-1 1886,2065
Deltamethrin-2 1886,2065
Demeclocycline 1157
Demethoxycurcumin 1331
Demeton-O 1542,1543,1544,1545
Demeton S 1542,1543
Demeton-ethyl 1350,1401,1860,1995
Demeton-s-methyl 1444,1678,1825,1930
Demeton-S-methyl 1887,2066
Demeton-s-methylsulfon 1444,1678,1825,1930
Demoxepam 1190,232,916

2′-Deoxyadenosine monohydrate 572,688
5′-Deoxyadenosine 689
Deoxycholic acid 141,234
Deoxycholic acid-2,2,4,4-d_4 234
11-Deoxycorticosterone solution 1374,257
2′-Deoxycytidine 572
2′-Deoxycytidine hydrate 687,688,689
Deoxydenosine 687
(±)-Deoxyephedrine hydrochloride 427,458
2′-Deoxyguanosine monohydrate 572,687,688
3′-Deoxyguanosine 689
Deoxynivalenol 12,358,17,394,331
Deoxyribonucleosides 572
12-Deoxywithastramonolide 1235,1310,1311,1312,1313,1314
S-(+)-Deprenyl 2215,2256,2624,2852
R-(−)-Deprenyl hydrochloride 905
R-(-)-Deprenyl (Selegiline) 2215,2256,2624,2852
Dermorphin 425
N-Desethylamiodarone hydrochloride solution 1370,229,230,1378,266,267,1379,268
Desethyl atrazine 1466,1740,1858,1989,2356,2384,2392,2406,1489,1788,1877,2039,2369,2391,2397,2425
Desipramine 1164,210,1166,211,1167,212,1165,1169,1170,2289
Desipramine hydrochloride 1206,2288
Desisopropyl atrazine 1466,1740,1858,1989,2356,2384,2392,2406,1489,1788,1877,2039,2369,2391,2397,2425
Desmediphan 1888,2067
32-Desmethoxyrapamycin 188
N-Desmethylchlordiazepoxide 916
Desmethyldiazepam 136,936,137,937,138,938,1207,273,489,875,876
N-Desmethyldiazepam 135,935,915,916
Desmethyldiltiazem 896
Desmethyldoxepin 1167,212,1169,1170
N-Desmethylnefopam (nefopam metabolite) 2898,976
N-Desmethyltamoxifen 1152
Desmethyl venlafaxine 132,907,1189,231
Devrinol 10,2483
Dexamethasone 169
Dexamisole 455,456,454
Dextromethorphan 971
Dextromethorphan hydrobromide 2899,977
Dextrose 387
Diacetal 1969
Diacetone alcohol 1725
Dialifor 1444,1678,1825,1930
Dialifos 1890,2069
Diallate-1 1550
Diallate-2 1550
Diallate isomer 1551
1,4-Diaminobutane 143
2,6-Diamino-4-chloropyrimidine (I.S.) 2078,2079,2080
2,6-Diamino-4-chloropyrimidine (I.S) 2081
4,4′-Diaminodiphenylmethane 1673
2,4-Diaminotoluene 1655
Diamyl phthalate 1478,1769,2009,2192
o-Dianisidine 1673
Diastereomeric compounds, proprietary 1338
Diazepam 128,887,135,935,136,936,137,937,138,938,1190,232,
1207,273,489,842,875,876,888,889,916,2288,2289,2290,2462,2291,2463
Diazepam solution 490,833,1228
Diazepam-d_5 solution 833
Diazinon 1419,406,1347,1394,1798,1894,1350,1401,1860,1995,1430,1641,1796,1892,1447,1681,1828,1933,
1466,1740,1858,1989,2356,2384,2392,2406,1471,1746,1861,1997,2361,2386,2393,2411,1506,2075,1507,2076,1542,1543,1544,1545,
1585,2342,1797,1893,1885,2064,2004,2413
Dibenz[*a,h*]acridine 1540,1541,1550
Dibenz[*a,j*]acridine 1540,1541,1551
Dibenz[*a,h*]anthracene 2375,310
Dibenz[*a,h*]anthracene 311
Dibenz[*a,h*]anthracene 1387,1410,1479,2012,1388,1411,1482,2028
Dibenz[*a,h*]anthracene 1408,2010
Dibenz[*a,h*]anthracene 1409,2011,1483,2029,2365,2420,1506,2075,1507,2076
Dibenz[*a,h*]anthracene 1517
Dibenz[*a,h*]anthracene 1524,1552,1553,1554,1555,1556,1557,1564,1795,1891
Dibenzo(a,h)anthracene 1434,1435
Dibenzo[a,h]anthracene 1451,1936
Dibenzo[*a,h*]anthracene 1480,2013,1481,2014,1518,1540
Dibenzo[a,h]anthracene 1541
Dibenzo(a,h)anthracene 1558
Dibenzo[*a,h*]anthracene 1560,1561,1562,1563,1567,1587
7H-Dibenzo[*c,g*]carbazole 1540
7H-Dibenzo[c,g]carbazole 1541

Dibenzofuran 1484,2030,2366,2421,1552,1553,1554,1555,1556,1557,1558,1564
Dibenzo(a,e)pyrene 1540
Dibenzo[*a,e*]pyrene 1541,1795,1891
Dibenzo[*a,h*]pyrene 1540,1541,1795,1891
Dibenzo[a,i]pyrene 1540,1541,1795,1891
Dibenzo[*a,l*]pyrene 1795,1891
Dibenzothiophene 1408,2010,1409,2011
N,N-Dibenzyl-DL-tartaric diamide 2578,51
1,5-di-epi-β-Bourbonene 2138,2167
Dibrom® 1419,406,1544,1545,1887,2066
Dibromfos 1350,1401,1860,1995
Dibromochloromethane 1494,2058,2371,2441,1497,2061,1504,2073,1519,1520,1522,1546,1547,1548,1549,1565,1566, 1568,1588,2322,2344
Dibromochloropropane 1509,1510,1511
1,2-Dibromo-3-chloropropane 1497,2061,1498,2062,2373,2444,1502,2071, 1503,2072,1504,2073,1505,2074,1546,1547,1548,1549,1565,1566
1,2-Dibromoethane 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1505,2074,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345
Dibromofluoromethane 1519,1520,1546,1547,1548,1549
Dibromomethane 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549
1,2-Dibromomethane 1504,2073,1546,1547
3,5-Dibromo-p-tyrosine 2770,573
2,6-Di-*tert*-butyl-4-hydroxymethylphenol 1282,292
3,5-Di-*tert*-butyl-4-hydroxytoluene 1282,292
n-Dibutylnitrosoamine 1484,2030,2366,2421
Dibutyl phthalate 1478,1769,2009,2192,1507,2076,1556,1865,2008,2394,2416,2191
Di-*n*-butyl phthalate 1388,1411,1482,2028,1483,2029,2365,2420, 1506,2075,1524,1552,1553,1554,1555,1557,1558,1564
Dicaffeic acid 1275
Dicaffeoylquinic acid (1,5-di-CQA) 1275
Dicaffeoylquinic acid (3,4-di-CQA) 1275
Dicaffeoylquinic acid (3,5-di-CQA) 1275
Dicaffeoylquinic acid (4,5-di-CQA) 1275
Dicamba 1355,1389,2,298
Dichlofenthion 1350,1401,1860,1995,1885,2064
Dichlofluanid 1347,1394,1798,1894,1449,1683,1830,1935,1797,1893,1889,2068,2004,2413
Dichlofluanid metabolite 1889,2068
3,4-Dichloroaniline 1655,1672
2,6-Dichlorobenzamide 1890,2069
1,2-Dichlorobenzene 1494,2058,2371,2441,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073, 1505,2074,1519,1520,1522,1523,1524,1546,1547,1548,1549,1552,1553,1554,1555,1556,1557,1558,1564,1565,1566,1568,1588,2322,2344, 1569,1589,2323,2345,1725,1726,1727
1,2-Dichlorobenzene-d_4 ..... 1498,2062,2373,2444,1504,2073, 1505,2074,1524,1550,1551,1552,1553,1554,1555,1556,1557
1,3-Dichlorobenzene 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1504,2073,1505,2074,1519,1520,1522,1524,1546,1547,1548,1549,1552,1553,1554,1555,1556,1557,1558,1564,1565,1566, 1568,1588,2322,2344,1569,1589,2323,2345
1,4-Dichlorobenzene 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1504,2073,1505,2074,1519,1520,1522,1524,1546,1547,1548,1549,1552,1553,1554,1555,1556,1557,1558,1564,1565,1566, 1568,1588,2322,2344,1569,1589,2323,2345,1676,1794
1,4-Dichlorobenzene-d_4 1493,2057,2370,2440,1519,1520,1524
1,4-Dichlorobenzene-d_4 1546
1,4-Dichlorobenzene-d_4 1547
1,4-Dichlorobenzene-d_4 1548,1549,1550,1551,1552,1553,1554,1555,1556,1557,1564,1567,1587
1,4-dichlorobenzene-d4 (I.S.) 1558
1,2-dichlorobenzene-d4 (surr.) 1558
3,3′-Dichlorobenzidine 1524,1552,1553,1554,1555,1556,1557,1558,1564,1655,1672,1673
2,6-Dichlorobenzonitrile 1887,2066
p-Dichlorobenzophenone 1347,1394,1798,1894,1797,1893
2,3-Dichlorobiphenyl 1388,1411,1482,2028,1506,2075,1507,2076
2,6-Dichlorobiphenyl 1441,1927,1442,1928
2,6-dichlorobiphenyl 1443,1929
3,3′-Dichlorobiphenyl 1501
3,4′-Dichlorobiphenyl 1501
3,4-Dichlorobiphenyl 1501
3,5-Dichlorobiphenyl 1501
4,4'-Dichlorobiphenyl 1441,1927,1442,1928
4,4′-dichlorobiphenyl 1443,1929
4,4′-Dichlorobiphenyl 1501
1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane 1404,2001,1507,2076,1512,1514
1,1-Dichloro-2,2-bis(4-chlorophenyl)ethene 1382,1396,1439,1925,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1513,1516,1524,1532,1571,1591,2325,2347,1604
1,4-Dichlorobutane 1494,2058,2371,2441
cis-1,4-Dichloro-2-butene 1546,1547,1548,1549
trans-1,4-Dichloro-2-butene 1504,2073,1546,1547,1548,1549
Dichlorodifluoromethane 1496,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1505,2074
1,1-Dichloroethane 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1504,2073,1505,2074,1519,1520,1521,1522,1523,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1674,1676, 1725,1726,1727

1,2-Dichloroethane 1494,2058,2371,2441, 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566, 1568,1588,2322,2344,1569,1589,2323,2345,1674,1676,1725,1726,1727,2200,2201,2202,2448,2203,2204,2449,2224
1,2-Dichloroethane-d_4 1519,1520,1546
1,2-Dichloroethane-d_4 1547
1,2-Dichloroethane-d_4 1548,1549,1565,1566
1,1-Dichloroethene 1504,2073,1546,1547,2202,2448,2204,2449
cis-1,2-Dichloroethene 1497,2061,1504,2073,1546,1547,1569,1589,2323,2345
trans-1,2-Dichloroethene 1494,2058,2371,2441,1497,2061,1522
trans-1,3-Dichloroethene 1504,2073
1,1-Dichloroethylene 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1505,2074, 1519,1520,1521,1522,1523,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1674,1676,1725,1726,1727,2200,2201,2203, 2224
cis-1,2-Dichloroethylene 1493,2057,2370,2440,1498,2062,2373,2444,1502,2071,1503,2072,1505,2074,1548,1549,1565,1566
cis-1,2-dichloroethylene 1568,1588,2322,2344
cis-1,2-Dichloroethylene 2205
cis-1,2-Dichloroethylene 2206,2207,2450,2208,2209,2451
trans-1,2-Dichloroethylene 1498,2062,2373,2444,1502,2071, 1503,2072,1505,2074,1519,1520,1523,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1674,1676,1725,1726,1727
Dichlorofenthion 1542,1543,1544,1545
Dichlorofluoromethane 1504,2073,1546,1547,1548,1549,1565,1566,1697,1698
2,6-Dichloroindophenol sodium salt hydrate 1888,2067
Dichloromethane 1491,1581,2319,2331,1519,1520,1546,1547,1548, 1549,1565,1566,1568,1588,2322,2344,1674,1676,1726,1727,2205,2207,2450,2209,2451
2,6-Dichloro-4-nitroaniline 1449,1683,1830,1935
2,4-Dichlorophenol ... 90,1359,1386,1407,1475,1755,2005,1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415,1531,1552, 1553,1554,1555,1556,1557,1558,1564
2,6-Dichlorophenol 1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415,1531,1550,1551
[3-(3,5-Dichlorophenyl)-2,4-dioxoimidazolidinyl]-*N*-(methylethyl)carboxamide 1889,2068
1,1-Dichloropropane 1502,2071,1503,2072
1,2-Dichloropropane 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345
1,3-Dichloropropane 1497,2061,1498,2062,2373,2444, 1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549
2,2-Dichloropropane 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549
1,1-Dichloropropene 1497,2061,1498,2062,2373,2444,1504,2073,1505,2074,1546,1547
1,1-Dichloro-1-propene 1548,1549
cis-1,3-Dichloropropene 1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345
trans-1,3-Dichloropropene 1494,2058,2371,2441,1497,2061, 1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566, 1568,1588,2322,2344,1569,1589,2323,2345
1,2-Dichlorotetrafluoroethane 1568,1588,2322,2344
Dichlorvos 308,1347,1394,1798,1894,1350,1401,1860,1995, 1506,2075,1507,2076,1542,1543,1544,1545,1585,2342,1797,1893,1885,2064
2,4-Dichorophenol 1524
Diclobutrazole 1886,2065
Diclocymet-1 1889,2068
Diclocymet-2 1889,2068
Diclofenac 851,899,978,979
Dicloran 1509,1510,1511,1886,2065,2004,2413
Dicofol 1347,1394,1798,1894,1448,1682,1829,1934,1797,1893,2004,2413
Dicrotophos 1350,1401,1860,1995,1542,1543,1544,1545,1887,2066
Dicyclohexyl phthalate 1478,1769,2009,2192,1865,2008,2394,2416,2191
Didymin 354
Dieldrin 1347,1394,1798,1894,1382,1396,1439,1925,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1524,1532,1571,1591,2325,2347,1604
Diethofencarb 1888,2067
Diethylamine 1648,2379,1649,2380,2225,2455
N,*N*-Diethylaniline 32
2,6-Diethylaniline 1655,1672
1,3-Diethylbenzene 1610,1612
1,4-Diethylbenzene 1612
Diethylcyanamide 1582,2332
Diethyl disulfide 1685
Diethylene glycol 1383,1457,1705,1977,2187
Diethyl ether 1504,2073,1525,2210,2211,2212,2452,2213,2214,2453,2224
N,*N*-Diethylformamide 1582,2332
Di(2-ethylhexyl) adipate 1388,1411,1482,2028
Di(2-ethylhexyl) phthalate 1388,1411,1482,2028
3,5-Diethyl-2-methylpyrazine 1871,2022,2395,2417
N,*N*-Diethyl-2-(1-naphthyloxy)propanamide 1507,2076
O,*O*-Diethyl *O*-(4-nitrophenyl) phosphate 1350,1401,1860,1995
Diethyl phthalate 1388,1411,1482,2028,1478,1769,2009,2192, 1483,2029,2365,2420,1506,2075,1507,2076,1524,1552,1553,1554,1555,1556,1557,1558,1564,1865,2008,2394,2416,2191
2,3-Diethylpyrazine 1871,2022,2395,2417
2,6-Diethylpyrazine 1871,2022,2395,2417
Diethyl succinate 1895

Diethyl sulfide 1685
2,5-Diethyltetrahydrofuran 2137,2138,2167
Difenoconazole-1 1886,2065
Difenoconazole-2 1886,2065
Diflubenzuron 1419,406
Diflunisal 899
Difluorobenzene 1523
1,4-Difluorobenzene 1565,1566
Digitonenin 1289
Digitoxin 263
Digoxin 256,263,1289
Dihexyl phthalate 1865,2008,2394,2416,2191
Di-*n*-Hexyl phthalate 1478,1769,2009,2192
1,6-Dihydrocarveol 2167
Dihydrocarveyl acetate 2167
(Z)-Dihydrocarvone 2167
(E)-Dihydrocarvone 2167
2,3-Dihydrofarnesol 2131
2,3-Dihydro-5-methylfuran 2056,2439
5α-Dihydrotestosterone (DHT) solution 258
5a-Dihydrotestosterone glucuronide 258
3,4-Dihydroxybenzylamine 955
4,4′-Dihydroxybiphenyl 492
3,4-Dihydroxy-DL-phenylalanine 2900,980,2901,981
3,4-Dihydroxy-phenylacetic acid 1275
3,4-Dihydroxy-D-phenylalanine 162,2634,163,2635
3,4-Dihydroxy-L-phenylalanine 145,162,2634,163,2635
3,4-Dihydroxyphenylglycol 180
2,3-Dihydroxy-3-phenylpropionic acid 2579,2902,52,982
1α,25-Dihydroxyvitamin D2 solution 1323,260,1324,261
1α,25-Dihydroxyvitamin D3 solution 1323,260,1324,261
Diisobutyl phthalate 1478,1769,2009,2192,1865,2008,2394,2416
Diisopropyl phthalate 1478,1769,2009,2192
Diltiazem 896
Dimepiperate 1888,2067
Dimethametryn 1888,2067
Dimethenamid 1888,2067
Dimethipin 1886,2065
Dimethoat 1448,1682,1829,1934
Dimethoate 1350,1401,1860,1995,1351,1403,1862,2000,1466,1740,1858,1989,2356,2384,2392,2406,1470,1996,2360,2410, 1471,1746,1861,1997,2361,2386,2393,2411,1542,1543,1544,1545,1550,1551,1885,2064
Dimethomorph-1 1890,2069
Dimethomorph-2 1890,2069
Di-6,6'-Methoxy-bi(2-naphthol) 2580,53
(*S*)-(6,6′-Dimethoxybiphenyl-2,2′-diyl)bis[bis(3,5-di-*tert*-butylphenyl)phosphine] 106,2612
(±)-2,5-Dimethoxy-4-bromoamphetamine hydrochloride solution 228,1424,457
1,2-Dimethoxyethane 2205,2206,2207,2450,2208,2209,2451
(±)-2,5-Dimethoxy-4-Iodoamphetamine hydrochloride solution 228,1424,457
2,5-Dimethoxy-4-(n)-propylthiophenethylamine hydrochloride solution 1424,457,483
2,5-Dimethoxytetrahydrofuran 1692,2509,1693,2510
2,5-Dimethoxytetrahydrofuran, meso-isomer 1693,2510
Dimethylacetamide 2205,2206,2207,2450,2208,2209,2451
Dimethyl adipate 1691
Dimethylamine 1648,2379,1649,2380,2225,2455
Dimethylaminoazobenzene 1673
4-Dimethylaminoazobenzene 1550,1551
N,N-Dimethylaniline 32,842,1655,1672
2,4-Dimethylaniline 1673
2,6-Dimethylaniline 1655,1672,1673,2311,2312,2313,2314,2316,2317
Dimethyl azelate 1691
2,5-Dimethylbenzaldehyde 21,2326
7,12-Dimethylbenz[*a*]anthracen-*trans*-8,9-diol 175,304,438
7,12-Dimethylbenz[*a*]anthracene 175,304,438,1550,1551
7,12-Dimethylbenz[*a*]anthracene-*trans*-10,11-diol 175,304,438
7,12-Dimethylbenz[*a*]anthracen-2-ol 175,304,438
7,12-Dimethylbenz[*a*]anthracen-3-ol 175,304,438
7,12-Dimethylbenz[*a*]anthracen-4-ol 175,304,438
3,3′-Dimethylbenzidine 1552,1553,1554,1555,1557
7,8-Dimethylbenzo[g]pteridine-2,4(1H,3H)-dione, Compound A. 1219,274
1,1-Dimethylbiguanide hydrochloride 398
Dimethyl-bisphenol A 299,341
2,2-Dimethylbutane 1592,1610,1612
2,3-Dimethylbutane 1592,1610,1611,1612
Dimethylcyclohexanol 2045,2350
1,1-Dimethylcyclopentane 1592
trans-1,2-Dimethylcyclopentane 1592
cis-1,3-Dimethylcyclopentane 1592
trans-1,3-Dimethylcyclopentane 1592

2,2-Dimethyl-3-decene 1491,1581,2319,2331
Dimethyl disulfide 1685,1686,2381,1687,2382,1871,2022,2395,2417,2051,2435
1,2-Dimethyl-4-ethylbenzene 1610,1612
1,3-Dimethyl-4-ethylbenzene 1610,1612
1,3-Dimethyl-5-ethylbenzene 1612
1,4-Dimethyl-2-ethylbenzene 1610,1612
Dimethylformaldehyde 2056,2439
Dimethylformamide 1676,1725,1726,1727,2205,2206,2207,2450,2208,2209,2451,2224
2,5-Dimethylfuran 2056,2439
Dimethyl glutarate 1691
2,2-Dimethylheptane 1592,1612
2,3-Dimethylheptane 1592
2,4-Dimethylheptane 1592
2,5-Dimethylheptane 1592
2,6-Dimethylheptane 1592
3,3-Dimethylheptane 1592
3,4-Dimethylheptane 1592
3,5-Dimethylheptane 1592
2,4-Dimethylheptanen 1612
2,6-Dimethylheptanen 1612
2,2-Dimethylhexane 1592
2,3-Dimethylhexane 1592,1610,1611,1612
2,4-Dimethylhexane 1592,1610,1611,1612
2,5-Dimethylhexane 1592,1610,1611,1612
3,3-Dimethylhexane 1592
3,4-Dimethylhexane 1592,1612
3,4-Dimethyl-1-hexene 1612
3,4-Dimethyl-*trans*-2-hexene 1612
3,4-Dimethyl-1-hexenen 1612
Dimethyl isophthalate 1691
Dimethyl malonate 1691
3,4-Dimethylmethcathinone hydrochloride solution 471
2,6-Dimethylnaphthalene 1408,2010,1409,2011
Dimethylnaphthalenes 1610,1611
4,4-Dimethyl-2-neopentyl-1-pentene 1721
1,3-Dimethyl-2-nitrobenzene 1506,2075,1507,2076
4,8-Dimethyl-1,3-(E),7-nonatriene 2096
4,8-Dimethyl-(3E)-1,3,7-nonatriene 2131
cis-3,7-Dimethyl-2,6-octadien-1-ol 2096,2099,2103,2111,2184,2120
3,7-Dimethyl-2,6-octadienyl acetate 2050,2434,2105,2106,2113,2120,2170
2,2-Dimethylpentane 1592
2,3-Dimethylpentane 1592,1610,1612
2,4-Dimethylpentane 1431,1572,1592,1610,1611,1612
3,3-Dimethylpentane 1592
α,α-Dimethylphenethylamine 1550,1551
2,4-Dimethylphenol 90,1359,1386,1407,1475,1755,2005,1476,1756,2006,2363,2388,2414, 1477,1757,2007,2364,2389,2415,1524,1531,1552,1553,1554,1555,1556,1557,1558,1564
2,6-Dimethylphenol 2311,2312,2313,2314,2316,2317
5,5-Dimethyl-4-phenyl-2-oxazolidinone 2581,54
Dimethyl phthalate 492,1388,1411,1482,2028,1478,1769,2009,2192,1483,2029,2365,2420, 1506,2075,1507,2076,1524,1552,1553,1554,1555,1556,1557,1558,1564,1691,1865,2008,2394,2416,2191
Dimethyl pimelate 1691
2,3-Dimethylpyrazine 1871,2022,2395,2417,2056,2439
2,5-Dimethylpyrazine 1871,2022,2395,2417,2056,2439
2,6-Dimethylpyrazine 1871,2022,2395,2417,2056,2439
2,5-Dimethylpyrrole 2056,2439
2,5-Dimethylresorcinol 152,44
Dimethyl sebacate 1691
Dimethyl styrene 1490,1580,2318,2330
Dimethyl suberate 1691
Dimethyl succinate 1691
Dimethyl sulfide 1685,1686,2381
Dimethyl sulfide (1 ppm) 1783
Dimethyl sulfoxide 2210,2211,2212,2452,2213,2214,2453,2225,2455
Dimethyl terepthalate 1691
6,7-Dimethyl-8-[(2S,3S,4R)-2,3,4,5-tetrahydroxypentyl]pteridine-2,4(3H,8H)-dione, Compound C 1219,274
2,3-Dimethyltyrosine 2771,574
1,3-Dimethyluric acid 150
1,7-Dimethyluric acid 149
Dimethylvinphos-E 1885,2064
Dimethylvinphos-Z 1885,2064
1,7-Dimethylxanthine 1362,1427,148,946,149,150,1315,802
Dimetridazole 906
Diniconazole 1890,2069
1,3-Dinitrobenzene 296,465,1455,1695,2297,2354,2383,2466, 1456,1696,2298,1550,1551
1,4-Dinitrobenzene 1550,1551
2,4-Dinitrophenol 90,1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415,1524,1531,1552,1553,1554,1555,1556,1557

2,4-dinitrophenol ... 1558
2,4-Dinitrophenol ... 1564
2,4-Dinitrotoluene ... 296,465,1455,1695,2297,2354,2383,2466,1456,1696,2298, 1506,2075,1507,2076,1524,1552,1553,1554,1555,1556,1557,1558,1564
2,6-Dinitrotoluene ... 297,1455,1695,2297,2354,2383,2466,1456,1696,2298, 1506,2075,1507,2076,1524,1552,1553,1554,1555,1556,1557,1558,1564
Dinonyl phthalate ... 1865,2008,2394,2416,2191
Di-*n*-Nonyl phthalate ... 1478,1769,2009,2192
Dinoseb ... 1355,1389,2,298,1476,1756,2006,2363,2388,2414,1550,1551
Dinotefuran ... 1358,19
Dioctyl phthalate ... 1865,2008,2394,2416
Di-*n*-octyl phthalate ... 1434
Di-n-octyl phthalate ... 1435
Di-*n*-Octyl phthalate ... 1478,1769,2009,2192
Di-*n*-octyl phthalate ... 1483,2029,2365,2420,1524,1552,1553,1554,1555
Di-n-octyl phthalate ... 1556
Di-*n*-octyl phthalate ... 1557
Di-n-octyl phthalate ... 1558
Di-*n*-octyl phthalate ... 1564,2191
Diolein ... 1633
Dioleoylglycerol ... 1632
Diols ... 1703,1975,2185
Diosmetin 6,8-di-C-glucoside ... 353
Dioxabenzofos ... 1885,2064
1,4-Dioxane ... 1550,1568,1588,2322,2344,1640,1675,1676,1725,1726,1727,2205,2206,2207,2450,2208,2209,2451,2226,2456
Dioxathion ... 1544,1545,1890,2069
Dioxibrassinin ... 1250,3031
Dioxin ... 1436,1575,1812,1912
Dipentyl phthalate ... 1865,2008,2394,2416,2191
Diperodon hydrochloride ... 2903,983,2904,984
Diphenamid ... 1506,2075,1507,2076,1888,2067
Diphenhydramine ... 67,846,2289
Diphenhydramine hydrochloride ... 2288
Diphenylamine ... 1404,2001,1550,1551,1673,1888,2067
Diphenyl phthalate ... 1865,2008,2394,2416,2191
Dipropylene glycol ... 1703,1975,2185,1704,1976,2186,1705,1977,2187
Dipyridamole ... 931
Diquat ... 13,1356,1392,312
Disulfoton ... 308,1350,1401,1860,1995,1466,1740,1858,1989,2356,2384,2392,2406,1470,1996,2360,2410, 1471,1746,1861,1997,2361,2386,2393,2411,1506,2075,1507,2076,1542,1543,1544,1545,1550,1551,1887,2066
Ditalimfos ... 1890,2069
Ditalimphos ... 1445,1679,1826,1931
Diterpenes ... 1884,2063
Dithiopyr ... 1430,1641,1796,1892,1886,2065
Diuretics ... 985
Diuron ... 1,295,5,110,15,111,16,294,302,1391,305,314,375,317
DMB-NANA ... 575,987
DMB-NGNA ... 575,987
DMT-2′O-TC-rG(ib) Phosphoramidite ... 686
DMT-2′O-TC-rU Phosphoramidite ... 686
cis-13,16-Docosadienoic acid methyl ester (C22:2) ... 1815,1915,2247, 1817,1917,2249,1818,1918,2250,1819,1919,2251
cis-13,16-Docosadienoic acid methyl ester (C22:2) at 2 wt % ... 1822,1922,2254
cis-4,7,10,13,16,19-Docosahexaenoic acid methyl ester ... 1814,1914,2246,1816,1916,2248,1867,2018,2274,1868,2019,2275, 1869,2020,2276,2262
cis-4,7,10,13,16,19-Docosahexaenoic acid methyl ester (C22:6n3) ... 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
cis-4,7,10,13,16,19-Docosahexaenoic acid methyl ester (C22:6n3) at 2 wt % ... 1822,1922,2254
Docosane ... 1526,1637
Docosane (C22) ... 1636
(E,Z)-2,6-Dodecadienal ... 2103,2166
Dodecanal ... 1971,2405,2103,2106,2166
Dodecane ... 1431,1572,1486,1487,1491,1581,2319,2331,1526,1596,1597,1601,1667,1602,1668,1637
n-Dodecane ... 2311,2312
n-dodecane ... 2313,2314
Dodecane (C12) ... 1636
Dodecane (I.S.) ... 2308
Dodecanoic acid ... 1873,2031,2278,1970,2404
Dodecanone ... 1971,2405
(E)-2-Dodecenal ... 2103
2-(E)-Dodecenal ... 2166
5-Dodecene ... 1582,2332
Dodecyl gallate ... 276,337
Dopamine ... 144,955
Dopamine hydrochloride ... 145
Dopamine hydrochloride solution ... 271
Dorzolamide ... 2905,988
Dothiepin ... 2906,989

Dotriacontane 1486,1487
Doxepin 1368,209,1164,210,1166,211,1167,212,1165,1169,1170
Doxylamine 858,859,871,890,912,971
Drugs of abuse 2289
Dual 1467,1990,2357,2407
Durene 1431,1572,1595,1596,1597,1610,1612,1613,1614,1615,1616,1617,1618,1624,1625,1626
Dyfonate 1350,1401,1860,1995

— E —

Eberconazole 112,2614
EDDP (2-Ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine) 2723,439,464,479
Edifenphos 1419,406,1885,2064
Edinphos 1350,1401,1860,1995
cis-11,14-Eicosadienoic acid methyl ester (C20:2) 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
Eicosane 1486,1487,1526,2316,2317
Eicosane (C20) 1636,1637
Eicosanoate (C20:0) 1636
Eicosanoic acid 1873,2031,2278
cis-5,8,11,14,17-Eicosapentaenoic acid methyl ester (C20:5n3) 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
cis-8,11,14-Eicosatrienoic acid methyl ester 1814,1914,2246,1816,1916,2248,1867,2018,2274,2262
cis-11,14,17-Eicosatrienoic acid methyl ester 1814,1914,2246,1816,1916,2248
cis-11,14,17-Eicosatrienoic acid methyl ester (C20:3n3) 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
cis-8,11,14-Eicosatrienoic acid methyl ester (C20:3n6) 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
cis-11-Eicosenoic acid methyl ester 1818,1918,2250,1819,1919,2251,1837,1954,1840,1960
cis-13-Eicosenoic acid methyl ester 1868,2019,2275
cis-11-Eicosenoic acid methyl ester (C20:1) 1836,1945,1839,1959,1842,1962,1844,1964
cis-11-Eicosenoic acid methyl ester (C20:1n9) 1815,1915,2247,1817,1917,2249
cis-11-Eicosenoic acid methyl ester (C20:1n9) at 2 wt % 1822,1922,2254
Elaidic acid 357
Elaidic acid methyl ester (C18:1n9t) 1815,1915,2247
Elaidic acid methyl ester (C18:1n9t) 1817,1917,2249,1818,1918,2250,1819,1919,2251
Elaidic acid methyl ester (C18:1n9t) at 2 wt % 1822,1922,2254
Elastase 582
β-Elemene 2096,2142
+ β-Elemene 2170
cis-β-Elemene 2131
δ-Elemene 2096,2131,2142,2161
α-Elemol 2161
EMDP (2-Ethyl-5-methyl-3,3-diphenylpyrroline) 479
Enalapril 123,849,129,892
Enantiomers 1694,1835,1941,2296,2693
β- Endorphin 788
Endosulfan I 1351,1403,1862,2000,1382,1396,1439,1925,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1513,1516,1524,1532,1604,1886,2065
α-Endosulfan 1507,2076,1512,1514
β-Endosulfan 1507,2076,1512,1514
Endosulfan II 1382,1396,1439,1925,1404,2001,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1513,1516,1524,1532,1604,1886,2065
Endosulfan sulfate 1347,1394,1798,1894,1382,1396,1439,1925,1404,2001,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1524,1532,1604,1797,1893
Endotoxifen (I) 1152
Endotoxifen (II) 1152
Endrin 1381,1395,1438,1924,1382,1396,1439,1925,1388,1411,1482,2028,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1524,1532,1604
Endrin aldehyde 1382,1396,1439,1925, 1466,1740,1858,1989,2356,2384,2392,2406,1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1532,1604
Endrin ketone 1382,1396,1439,1925,1466,1740,1858,1989,2356,2384,2392,2406, 1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1532,1604
Enilconazol (Imazalil) 11,2484,2582,112,2614
Enrofloxacin 1004,355,1005,356,1013
Ephedrine 992,2234,2285,2457,2460
(±)-Ephedrine 441
(±)-Ephedrine hydrochloride 2908,993
Epicatechin 1244
(−)-Epicatechin gallate 1244
Epigallocatechin 1244
(−)-Epigallocatechin gallate 1244
Epimedin A 1330
Epimedin B 1330
Epimedin C 1330
Epimedin A (PHY80586) 1267
Epimedin B (PHY80587) 1267
Epimedin C (PHY80588) 1267
Epinastine 994
(−)-Epinephrine 144,145
Epinephrine 254,955,994
7-Epi-paclitaxel 1104,1153,1154
7-epipaclitaxel 1220

Epitestosterone 197,198,200,201
EPN 1419,406,1350,1401,1860,1995,1542,1543,1544,1545,1885,2064
Eptam® 1467,1990,2357,2407
EPTC 1506,2075,1890,2069
Eptifibatide 820
(±)-Equol 1270,361,1271,362,1272
Erbitux (Cetuximab) 782
Erectile Dysfunction Drugs 996
Ergocalciferol 1293,217
Ergocalciferol (D2) 1292,216,1294,218,1297,219,1255,1256,1253
Eriocitrin 353,359
Erioglaucine disodium salt 388
Erucic acid methyl ester (C22:1) 1842,1962
Erucic acid methyl ester (C22:1n9) 1815,1915,2247
Erucic acid methyl ester (C22:1n9) 1817,1917,2249,1818,1918,2250,1819,1919,2251
Erucic acid methyl ester (C22:1n9) at 2 wt % 1822,1922,2254
Erythromycin 1194
Erythromycin C 1194
Erythromycin estolate 1194
Erythromycin ethyl succinate 1194
Erythropoietin, main peak 584
Erythrosin B sodium salt 388
Esfenvalerate 1890,2069
Esprocarb 1888,2067
α-Estradiol 155,555,196,202,2257
β-Estradiol 155,555,196,202,1186
17β-Estradiol 2257
β-Estradiol 3,17-disulfate 155,555
β-Estradiol 3-(β-D-glucuronide) 155,555
β-Estradiol 17-β-D-glucuronide 155,555
β-Estradiol 3-(β-D-glucuronide) 17-sulfate 155,555
β-Estradiol 3-sulfate 155,555
Estriol 155,555,196,202,2257
Estriol 3-(β-D-glucuronide) 155,555
Estriol 3-sulfate 155,555
Estrogenic compounds 2257
Estrone 155,555,196,202,1186,2257
Estrone 3-(β-D-glucuronide) 155,555
Estrone 3-sulfate 155,555
Ethafluralin 1887,2066
Ethane 1628,1639,1665,1723,1724,1749,1750,1751
Ethane (430 ng on column) 1752
Ethanethiol 1685,1687,2382
Ethanol 1431,1572,1568,1588,2322,2344,1593,1596,1629,1630,1676,1725,1726,1727,1780,1969, 2026,2027,2060,2443,2111,2184,2210,2211,2212,2452,2213,2214,2453,2226,2456,2292,2464,2293,2294
Ethanol denatured 1525,1595,1597
2-Ethenyl-5-methylpyrazine 1871,2022,2395,2417
2-Ethenyl-6-methylpyrazine 1871,2022,2395,2417
Ethion 1419,406,1350,1401,1860,1995,1440,1677,1824,1926,1542,1543,1544,1545,1885,2064
Ethofenprox 1430,1641,1796,1892
Ethoprop 1506,2075,1542,1543
Ethoprophos 308,1350,1401,1860,1995,1449,1683,1830,1935,1507,2076,1544,1545,1885,2064
Ethoprophos (I.S.) 1347,1394,1798,1894,1797,1893
2-Ethoxyethanol 1383,1457,1703,1975,2185,1725,2205,2206,2207,2450,2208,2209,2451
2-Ethoxyethanol (Cellosolve®) 1726,1704,1976,2186,1727
2-(2-Ethoxyethoxy)ethanol 1703,1975,2185
2-(2-Ethoxyethoxy)ethanol (CARBITOL™) 1704,1976,2186
2-Ethoxyethyl acetate 1725,1726,1727
Ethoxyquin 1282,292,1898,2182
Ethychlozate 1890,2069
Ethyl acetate 1431,1572,1485,1778,2032,2367,2390,2422,1568,1588,2322,2344,1675,1676,1725,1726, 1727,1780,1895,1969,2026,2027,2056,2439,2060,2443,2111,2184,2210,2211,2212,2452,2213,2214,2453,2224
Ethyl alcohol 2056,2439
N-Ethylaniline 32
Ethyl azinphos 1544,1545
Ethyl behenate 2111,2184
Ethylbenzene 102,1493,2057,2370,2440,1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073, 1505,2074,1519,1520,1521,1522,1527,1528,1529,1530,1546,1547,1548,1549,1565,1566,1569,1589,2323,2345,1592,1593,1594,1595,1596, 1597,1600,1658,1601,1667,1602,1668,1610,1611,1612,1613,1614,1615,1616,1617,1618,1621,1624,1625,1626,1640,1676,1725,1727,1780, 1794,2300,2467
3-Ethylbenzene 1431,1572
4-Ethylbenzene 1431,1572
2-Ethyl-1-butanol 1666
Ethyl *tert*-butyl ether 1722
Ethyl butyrate 1969,2060,2443
N-Ethylcathinone hydrochloride solution 472,476
Ethyl cellosolve 1780
Ethyl chloride 1569,1589,2323,2345

Ethylcyclohexane 1612
Ethylcyclopentane 1592
3-Ethylcyclopentane 1612
2-Ethyl-3,5-dimethylpyrazine 1871,2022,2395,2417
3-Ethyl-2,5-dimethylpyrazine 1871,2022,2395,2417
S-Ethyl-*N*,*N*-dipropylthiocarbamate 1507,2076
Ethylene 1639,1665,1723,1724,1734,1749,1750,1751
Ethylene (430 ng on column) 1752
Ethylene glycol 1383,1457,1703,1975,2185,1704,1976,2186,1705,1977,2187,2205,2206,2208,2225,2455
Ethylene glycol butyl ether 1383,1457,1676
Ethylene glycol monophenyl ether 284
Ethylene sulfide 1492,1583,2320,2333
Ethyl formate 1675,1676,1725,1726,1727,1780,2210,2211,2212,2452,2213,2214,2453
Ethyl gallate 376
Ethyl geranoate 2131
Ethyl-β-D-glucuronide 467
3-Ethylheptane 1592,1612
4-Ethylheptane 1592
3-Ethylhexane 1592
Ethyl hexanoate 2060,2443
2-Ethylhexanoic acid 1694,1835,1941,2296,2693,1970,2404
2-Ethyl-1-hexanol 1492,1583,2320,2333
2-Ethylhexyl alcohol 1728
N-(2-Ethylhexyl)-5-norbornene-2,3-dicarboximide 1507,2076
Ethyl 4-hydroxybenzoate 37,279,284,1236,1748,1998,2190,2223,2387,2412,2447,2454
Ethyl isobutyrate 1969
Ethyl isocyanate 2338
Ethyl lactate 1895
(±)-Ethyl-γ-lactone 1729,2118,2529,2676
Ethyl mercaptan 1686,2381
Ethyl mercaptan (1 ppm) 1783
Ethyl methacrylate 1504,2073
Ethyl methanesulfonate 1550,1551
1-ethyl-4-methylbenzene 1568,1588,2322,2344
cis-1,2-Ethylmethylcyclopentane 1592
trans-1,2-Ethylmethylcyclopentane 1592
cis-1,3-Ethylmethylcyclopentane 1592
trans-1,3-Ethylmethylcyclopentane 1592
3-Ethyl-3-methylpentane 1612
2-Ethyl-3-methylpyrazine 1871,2022,2395,2417
2-Ethyl-5-methylpyrazine 1871,2022,2395,2417,2056,2439
2-Ethyl-6-methylpyrazine 1871,2022,2395,2417,2056,2439
Ethyl methyl sulfide 1685
Ethyl octanoate 2060,2443
Ethylone 435,2049,2433
Ethylone hydrochloride 243,468,434,470,475
Ethylparaben 282,283
Ethyl paraben 286
Ethylparaben 289,290,291,1106
Ethyl parathion 1440,1677,1824,1926,1470,1996,2360,2410
3-Ethylpentane 1592
Ethyl propionate 1969
2-Ethylpyrazine 1871,2022,2395,2417,2056,2439
3-Ethylpyridine 2056,2439
Ethyl stearate 2111,2184
Ethyltoluene 1621
2-Ethyltoluene 1431,1572
Ethylxylene 1621
Etobenzanid 1888,2067
Etobenzanid metabolite 1888,2067
Etodolac 898,2909,997
Etofenprox 1888,2067
Etoxazole 1888,2067
Etoxazole metabolite 1888,2067
Etridiazole 1430,1641,1796,1892,1506,2075,1507,2076,1509,1510,1511,1887,2066
Etrimfos 1419,406,1440,1677,1824,1926,1885,2064
Eucalyptol 2121,2124,2137,2138,2167
Eugenol 2180,2181,2183,2446

— F —

F(ab')2 675,676,678
Famophos 1466,1740,1858,1989,2356,2384,2392,2406,1471,1746,1861,1997,2361,2386,2393,2411
Famotidine 1173
Famoxadone 1889,2068
Famphos 1470,1996,2360,2410
Famphur 1350,1401,1860,1995,1470,1996,2360,2410,1542,1543,1544,1545,1550,1551
(E,E)-Farnesal 2131
(2E,6Z)-Farnesal 2131

α-Farnesene ... 1876,2035,2396,2423,2105
trans-α-Farnesene ... 2106
(E,E)-α-Farnesene ... 2095,2096,2103,2131,2142,2166
trans-β-Farnesene ... 2170
(E)-β-Farnesene ... 2096,2121,2131,2142,2167
(Z)-β-Farnesene ... 2096
(Z,E)-Farnesol ... 2166,2103
(Z,Z)-Farnesol ... 2131
Farnesyl acetate ... 2131
Fast Green FCF ... 388
Fatty acids ... 1808,1908,2244
Fd′ ... 768
Fenamiphos ... 1447,1681,1828,1933,1466,1740,1858,1989,2356,2384,2392,2406, 1471,1746,1861,1997,2361,2386,2393,2411,1506,2075,1507,2076,1885,2064
Fenarimol ... 1506,2075,1507,2076,1886,2065
Fenazaquin ... 1446,1680,1827,1932
Fenbuconazole ... 1889,2068
Fenchlorphos ... 1449,1683,1830,1935,1886,2065
Fenchlorvos ... 308
Fenchyl alcohol ... 2131
α-Fenchyl alcohol ... 2106
(1*R*)-*endo*-(+)-Fenchyl alcohol ... 2105
Fenfluramine ... 1172,213
Fenhexamid ... 1419,406
Fenitrothion ... 1419,406,1350,1401,1860,1995,1430,1641,1796,1892,1447,1681,1828,1933,1542,1543,1544,1545,1885,2064
Fenofibric Acid ... 2910,999
Fenoldopam ... 1191,233
Fenoprofen ... 1000,2911
Fenoprofen methyl ester ... 1001,2912
Fenoprop (2-(2,4,5-Trichlorophenoxy)propionic acid) ... 1119
Fenoterol hydrobromide ... 1002,2913
Fenothiocarb ... 1888,2067
Fenoxanil-1 ... 1888,2067
Fenoxanil-2 ... 1888,2067
Fenoxaprop-ethyl ... 1889,2068
Fenoxycarb ... 1419,406,1888,2067
Fenpropathrin ... 1886,2065
Fenpropimorph ... 1447,1681,1828,1933,1890,2069
Fenpyroximate ... 1419,406
Fensulfothion ... 1350,1401,1860,1995,1542,1543,1544,1545,1885,2064
Fentanyl ... 427,1003,2289
Fentanyl solution ... 481
Fentanyl citrate salt ... 2288
Fenthion ... 1419,406,1350,1401,1860,1995,1445,1679,1826,1931,1542,1543,1544,1545,1885,2064
Fenuron ... 1,295,294,302,314,375,317
τ-Fenvalerate ... 1447,1681,1828,1933
Fenvalerate-1 ... 1886,2065
Fenvalerate-2 ... 1886,2065
Fenvalerate isomer ... 1448,1682,1829,1934
Fermizone ... 1890,2069
Ferredoxin-$NADP^+$ Reductase from *Spinacia oleracea* (spinach) ... 586
Ferritin ... 742,750,752
Feruloylquinic acid (3-FQA) ... 1275
Feruloylquinic acid (4-FQA) ... 1275
Feruloylquinic acid (5-FQA) ... 1275
Fexofenadine ... 1160
Fipronil ... 2583,57,1446,1680,1827,1932,1886,2065
Flavanone ... 1257,3032,1258,3033,1346,3042
Flavone ... 352
Flavonoids ... 1259
(±)-Flecainide solution ... 1370,229,230,1378,266,267,1379,268
Fluacrypyrim ... 1887,2066
Fluazifop-p-butyl ... 1446,1680,1827,1932
Fluconazole solution ... 831,832
Flucythrinate-1 ... 1886,2065
Flucythrinate-2 ... 1886,2065
Fludioxonil ... 1889,2068
Flufenoxuron ... 1419,406
Flumethasone ... 167
Flumioxazin ... 1888,2067
Flunitrazepam solution ... 490,833
Flunitrazepam-d_7 ... 833
Fluometuron ... 1,295,294,302,314,375
Fluoranthene ... 2375,310,311,1408,2010,1409,2011,1451,1936, 1480,2013,1481,2014,1517,1518,1524,1540,1541,1552,1553,1554,1555,1556,1557,1558,1560,1561,1562,1563,1564,1567,1587
Fluoranthene-d_{10} ... 1409,2011
Fluoranthene-d_{10M} (I.S.) ... 1408,2010
Fluoranthrene ... 1483,2029,2365,2420

Fluorene 2375,310,311,1388,1411,1482,2028,1408,2010,1409,2011,1451,1936,1480,2013,1481,2014, 1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524,1540,1541,1552,1553,1554,1555,1556,1557,1558,1560,1561,1562,1563,1564, 1567,1587,1795,1891
Fluorene-d_{10} 1567,1587
2-Fluoroadenine-9-β-D-arabinofuranoside 168,587
(±)-2-Fluoroamphetamine hydrochloride solution 466,1426
4-Fluoroamphetamine 458
(±)-4-Fluoroamphetamine hydrochloride solution 466,1426
Fluorobenzene 1498,2062,2373,2444,1504,2073,1505,2074,1519,1520,1546
Fluorobenzene 1547
Fluorobenzene 1548,1549
2-Fluorobiphenyl 1517,1518,1524,1540
2-Fluorobiphenyl 1541
2-Fluorobiphenyl 1550,1551,1552,1553,1554,1555,1556,1557,1558,1564
5-Fluorocytosine 168,587
5-Fluoro-2′-deoxyuridine 168,587
(±)-2-Fluoromethamphetamine hydrochloride solution 466,1426
(±)-4-Fluoromethamphetamine hydrochloride solution 466,1426
3-Fluoromethcathinone 2049,2433
3-Fluoromethcathinone hydrochloride solution 243,468,434,471,473
4-Fluoromethcathinone 2049,2433
4-Fluoromethcathinone hydrochloride solution 243,468,434,471,473
1-Fluoronaphthalene 1517,1518,1540,1541
2-Fluorophenol 1524,1550,1551,1552,1553,1554,1555,1556,1557,1558,1564
p-Fluorophenyl methyl sulfoxide 2584,58
6-Fluorotryptophan 1172,213
5-Fluorouracil 168,587
Fluoxetine 67,157,239,811,2216,2264,2299,2625,2715,2853
Fluoxetine hydrochloride 837,1006,2914,1007,2915,1008,1010
Fluoxetine hydrochloride solution 1223
Fluoxetine (Prozac®) 846,931
Fluphenazine dihydrochloride 132,907,1189,231
Fluquinconazole 1886,2065
Flurazepam solution 833
Flurbiprofen 1011,2916,1012,2917
Fluridon 1507,2076
Flusilazole 1888,2067
Flusilazole metabolite 1888,2067
Fluthiacet-methyl 1890,2069
Fluticasone propionate 167
Flutolanil 1886,2065
Flutriafol 1444,1678,1825,1930
Fluvalinate-1 1886,2065
Fluvalinate-2 1886,2065
Fluvastatin 1148,194,964
Fluvoxamine 157
2C-B-FLY hydrochloride solution 228,1424,457,483
Folic acid 863,864,1300,1302,1303,1304,1306,1307,1308,1333
Folinic acid calcium salt hydrate 1260,3034,1261,3035
Folpet 1347,1394,1798,1894,1449,1683,1830,1935,1797,1893,1889,2068
Fonofos 1448,1682,1829,1934,1885,2064
Fonophos 1542,1543,1544,1545
Formaldehyde 21,2326
Formaldehyde solution 1584,2341
Formaldehyde-2,4-dinitrophenylhydrazone 22,2334,23,2335
Formaldehyde-2,4-DNPH 2337
Formaldehyde (2,4-DNPH derivative) 2336,24
Formaldehyde (~38 %) 1699
Formamide 2205,2206,2208
Formoterol fumarate dihydrate 1208
Formothion 1350,1401,1860,1995,1887,2066
Fosthiazate 1350,1401,1860,1995
Fosthiazate-1 1885,2064
Fosthiazate-2 1885,2064
Free fatty acids 1808,1908,2244
Freon® 11 1698
Freon 12 1697
Freon® 12 1698
Freon® 21 1698
Freon 22 1697
Freon® 22 1698
Freon® 113 solution 2224
Freon 114 1697
Freon® 114 1698
Freon 114a 1697
Freon® 114a (impurity) 1698
Fructose 333,381,387
D-(−)-Fructose 380

Fucitol 2036,2037
Fumaric acid 1277,368,85,1278,369,86
Fumonisin B_1 solution 331
Fumonisin B_2 solution 331
2-Furaldehyde 1896,2403
Furaltadone 127,877,879,906
Furametpyr 1889,2068
Furametpyr metabolite 1889,2068
Furan 1436,1575,1812,1912
Furazolidone 906
Furfural 59,60,1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436, 1883,2054,2402,2437,1969,2056,2439
Furfuryl acetate 2056,2439
Furfuryl alcohol 59,60,1895,2056,2439
Furfuryl ether 2056,2439
Furfuryl formate 2056,2439
2-Furfurylfuran 2056,2439
2-Furfuryl-5-methyl sulfide 2056,2439
Furfurylpyrrole 2056,2439
Furoin 2585,61
Furosemide 985,986,1014
1-(2-Furyl)-3-butanone 2056,2439
2-Furyl methyl ketone 59,60

— G —

Gabapentin solution 836
Galactitol 2036,2037
Galactose 383
D-(+)-Galactose 379
β-Galactosidase from *Escherichia coli* 761
Galangin 1329
Gallic acid 376,1259
Gallocatechin 1244
(−)-Gallocatechin gallate 1244
(G) gamma-Globulin 1185,808
Gasoline 1627
Genistein 1270,361,1271,362,1272
Genistin 1270,361,1271,362,1272
Gensenoside Rb_1 1265
Gensenoside Rb_2 1265
Gensenoside Rc 1265
Gensenoside Rd 1265
Gensenoside Re 1265
Gensenoside Rf 1265
Gensenoside Rg_1 1265
Gentisic acid 869,1275
(±)-Geosmin 1488,2038,2368,2424,1499,2070,2376,2445
Geranial 2050,2434,2099,2103,2105,2106,2120,2121,2131,2142,2166,2170,2180,2181
Geranic acid methyl ester 2142
Geraniol 2050,2434,2099,2103,2112,2120,2131,2142,2166
Geranium oil 2112
Geranyl acetate 2096,2099,2103,2121,2131,2142,2166
Geranyl acetone 2131
Geranyl butyrate 2112
Geranyl formate 2112,2131
(E,E)-Geranyl linalool 2131
Geranyl propanoate 2131
Geranyl propionate 2050,2434
Geranyl tiglate 2112
Germacrene D 2095,2096,2103,2131,2137,2138,2161,2166,2167,2170
Germacrene D 2050,2434,2136
Ginsenoside Rb_1 1245,1263
Ginsenoside-Rb_1 from *Panax ginseng* (Korean ginseng) root 1264
Ginsenoside Rb_2 1245,1263
Ginsenoside Rb2 1264
Ginsenoside Rc 1245,1263
Ginsenoside-Rc from *Panax ginseng* (Korean ginseng) root 1264
Ginsenoside Rd 1245,1263,1264
Ginsenoside Re 1245,1263
Ginsenoside-Re from *Panax ginseng* (Korean ginseng) root 1264
Ginsenoside Rf 1245,1263,1264
Ginsenoside Rg_1 1245,1263
Ginsenoside Rg1 1264
γ-Globulin 207,757,826
γ-Globulin bovine blood (150 kDa) 493
γ-Globulins from human blood 1129,187,825
Globulol 2131
Glucitol 2036,2037

Glucose 333,367,381,383,384,385
D-(+)-Glucose 379,382
D-(+)-Glucose monohydrate 380
Glucose-6-phosphate Dehydrogenase from baker's yeast (*S. cerevisiae*) 737
Glucose-6-phosphate Dehydrogenase from *Leuconostoc mesenteroides* 744
Glutamic acid 819
D-Glutamic acid 2794,612
L-Glutamic acid 508,509,2794,612,727,1897,2304
DL-Glutamic acid monohydrate 2793,611
DL-Glutamic acid (FMOC derivatives) 2779,594
L-Glutamic Dehydrogenase solution from bovine liver 761
Glutamine 508,509,819
D-Glutamine 2796,614
L-Glutamine 2796,614,727,1897,2304
DL-Glutamine 2795,613
Glutamine derivative 1897,2304
DL-Glutamine (FMOC derivatives) 2780,595
Glutathione S-Transferase from equine liver 615
DL-Glutethimide 1015,2721,431
Glycerin 1633,1638
Glycerol 1632,1705,1977,2187
Glyceryl tridecanoate 1632
Glyceryl trilinoleate 390,391,392,393
Glyceryl trioleate 390,391,392,393,1632
(*R*)-(+)-Glycidol 1700,2511
(*S*)-(−)-Glycidol 1700,2511
R-(+)-Glycidol 1701,2512,1702,2513
S-(-)-Glycidol 1701,2512,1702,2513
Glycine 1897,2304
Glycine-leucine-alanine 2831,783
Glycitein 1270,361,1271,362,1272
Glycitin 1270,361,1271,362,1272
Glycocholic acid 237,238
Glycocholic acid hydrate 234
Glycodeoxycholic acid monohydrate 234
Glycodeoxycholic-2,2,4,4-d_4 acid 234
Glycolithocholic acid 234
Glycols 1703,1975,2185
Glycoursodeoxycholic acid 234
Glycyrrhetinic acid 1289
Gly-Phe 719
Gly-Tyr 708
Goal 1467,1990,2357,2407
Grepafloxacin 880,881
Guaiacol glyceryl ether carbamate 1059,2946
Guaia-6,9-diene 2112
Guanine 684,765
Guanosine 687,688,689,769
Guanosine diphosphate 690
Guanosine triphosphate 690
Guthion® 308

— H —

Halfenprox 1886,2065
Halocarbon 11 1569,1589,2323,2345
Halocarbon 12 1569,1589,2323,2345
Halocarbon 113 1569,1589,2323,2345
Halocarbon 114 1569,1589,2323,2345
Haloperidol 834,837,931,1212
Haloperidol chloro analog 837
Haloperidol metabolite II 834,837
Haptoglobin Human, Phenotype 1-1 761
α-HCH (α-hexachlorocyclohexane) 1462,1711,1855,1983,2474,2519,2662,2698
α-HCH (α-hexachlorocyclohexane) enantiomers 1458,1707,1851,1979,2470,2515,2658,2694, 1459,1708,1852,1980,2471,2516,2659,2695,1460,1709,1853,1981,2472,2517,2660,2696,1461,1710,1854,1982,2473,2518,2661,2697, 1463,1712,1856,1984,2475,2520,2663,2699,1464,1713,1857,1985,2476,2521,2664,2700
Heliotropine 2111,2184,2183,2446
Hemocyanin 749
Hemoglobin human 617
Hemoglobin S 619
Hemoglobin A_0 619
Hemoglobin A_2 619
Hemoglobin S (human) 618
Heneicosane (C21) 1636
Heneicosanoic acid methyl ester (C21:0) 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
Heneicosanoic acid methyl ester (C21:0) at 2 wt % 1822,1922,2254
2,2′,3,4,4′,5′,6-Heptabromodiphenyl ether solution 1450,1684

Heptachlor 1351,1403,1862,2000,1381,1395,1438,1924,1382,1396,1439,1925,1388,1411,1482,2028, 1466,1740,1858,1989,2356,2384,2392,2406,1469,1994,2359,2409,1506,2075,1507,2076,1512,1513,1514,1516,1524,1532, 1571,1591,2325,2347,1604
Heptachlor epoxide 1347,1394,1798,1894,1381,1395,1438,1924,1382,1396,1439,1925,1388,1411,1482,2028,1469,1994,2359,2409, 1506,2075,1513,1516,1524,1532,1571,1591,2325,2347,1604,1797,1893
Heptachlor exo-epoxide 1507,2076,1512,1514
Heptachlor expoxide 1466,1740,1858,1989,2356,2384,2392,2406
2,2′,3,3′,4,4′,6-Heptachlorobiphenyl 1388,1411,1482,2028,1506,2075,1507,2076
2,2',3,4',5,6,6'-Heptachlorobiphenyl 1441,1927,1442,1928
2,2′,3,4′,5,6,6′-heptachlorobiphenyl 1443,1929
2,3,3',4,4',5,5'-Heptachlorobiphenyl 1441,1927,1442,1928
2,3,3',4,4',5,5'-Heptachlorobiphenyl (No. 189) 1402,1999
2,2',3,4,4',5,5'-Heptachlorobiphenyl (No. 180) 1402,1999
Heptadecane 1637,2316,2317
Heptadecane (C17) 1636
Heptadecanoic acid methyl ester (C17:0) 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
Heptadecanoic acid methyl ester (C17:0) at 2 wt % 1822,1922,2254
cis-10-Heptadecenoic acid methyl ester (C17:1) 1815,1915,2247,1817,1917,2249,1818,1918,2250,1819,1919,2251
cis-10-Heptadecenoic acid methyl ester (C17:1) at 2 wt % 1822,1922,2254
Heptanal 1971,2405,2099
Heptane 1431,1572,1486,1487,1595,1601,1667,1602,1668,1610,2210,2211,2212,2452,2213,2214,2453
n-Heptane 1529,1568,1588,2322,2344,1592,1611,1612,1629,1630
Heptanoic acid 1808,1908,2244,1809,1909,2245,1873,2031,2278,1970,2404,1971,2405
Heptanol 1490,1580,2318,2330
1-Heptanol 1895
Heptanone 1971,2405
4-Heptanone 2056,2439
Heptenophos 1449,1683,1830,1935
n-Heptyl acetate 2096
Heptylamine 1776
Heroin 428,432,2288,2289,2290,2462,2291,2463
Heroin solution 490
Hesperidin 353,354,359
2,3',4,4',5,5'-Hexachlorbiphenyl (No. 167) 1402,1999
Hexachlorobenzene 1347,1394,1798,1894,1351,1403,1862,2000,1381,1395,1438,1924,1388,1411,1482,2028, 1404,2001,1506,2075,1507,2076,1524,1552,1553,1554,1555,1556,1557,1558,1564,1571,1591,2325,2347,1797,1893
2,2′,4,4′,5,6′-Hexachlorobiphenyl 1388,1411,1482,2028,1506,2075,1507,2076
2,2',4,4',6,6'-Hexachlorobiphenyl 1441,1927,1442,1928
2,2′,4,4′,6,6′-hexachlorobiphenyl 1443,1929
3,3',4,4',5,5'-Hexachlorobiphenyl 1441,1927,1442,1928
3,3′,4,4′,5,5′-hexachlorobiphenyl 1443,1929
3,3′,4,4′,5,5′-Hexachlorobiphenyl 1501
2,2',3,4,4',5'-Hexachlorobiphenyl (No. 138) 1402,1999
2,2',4,4',5,5'-Hexachlorobiphenyl (No. 153) 1402,1999
2,3,3',4,4',5-Hexachlorobiphenyl (No. 156) 1402,1999
2,3,3',4,4',5'-Hexachlorobiphenyl (No. 157) 1402,1999
3,3',4,4',5,5'-Hexachlorobiphenyl (No. 169) 1402,1999
Hexachlorobutadiene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073, 1505,2074,1524,1546,1547,1552,1553,1554,1555,1557,1558,1564,1569,1589,2323,2345
Hexachloro-1,3-butadiene 1548,1549,1556,1568,1588,2322,2344
α-1,2,3,4,5,6-Hexachlorocyclohexane 1351,1403,1862,2000,1466,1740,1858,1989,2356,2384,2392,2406, 1507,2076,1512,1514,1516,1889,2068
Hexachlorocyclopentadiene 1388,1411,1482,2028,1506,2075, 1507,2076,1524,1552,1553,1554,1555,1556,1557,1558,1564
Hexachloroethane 1504,2073,1552,1553,1554,1555,1556,1557,1558,1564
Hexachloropropene 1550,1551
Hexachlorothane 1524
Hexaconazole 1889,2068
Hexacosane 1526
Hexadecane 1431,1572,1486,1487,1526,1637,2316,2317
Hexadecane (C16) 1636
Hexadecanoate (C16:0) 1636
Hexadecanoic acid 1873,2031,2278
Hexadecanolide 2111,2184
cis-11-Hexadecenal 1896,2403
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) 1456,1696,2298
Hexaldehyde-2,4-dinitrophenylhydrazone 22,2334,23,2335
Hexaldehyde-2,4-DNPH 2337
Hexaldehyde (2,4-DNPH derivative) 2336,24
Hexamethylene diisocyanate 2340,27,2338
Hexamethyl phosphoramide (HMPA) 1544,1545
Hexanal 21,2326,1490,1580,2318,2330,1491,1581,2319,2331,1492,1583,2320,2333,1971,2405,2045,2350,2051,2435,2056,2439
Hexane 1431,1572,1486,1487,1595, 1601,1667,1602,1668,1610,1611,1612,1676,1725,1726,1727,2111,2184,2205,2206,2207,2450,2208,2209,2451,2224
n-Hexane 1568,1588,2322,2344,1592
1,2-Hexanediol 1646,2489
1,2-Hexanediol (O-TFA derivatives) 1647,2490
2,3-Hexanedione 2056,2439

3,4-Hexanedione ... 2056,2439
N,N'-1,6-Hexanediylbis(4-(2-pyridinyl)-1 piperazinecarboxamide) ... 25
Hexanoic acid ... 1970,2404,1971,2405,2045,2350
Hexanol ... 1876,2035,2396,2423,1969,2060,2443,2142
n-Hexanol ... 2131
1-Hexanol ... 1895
2-Hexanone ... 1504,2073,1546,1547,1548,1549,1565,1566,1676,1725,1726,1727
3-Hexanone ... 2056,2439
Hexatriacontane ... 1486,1487
Hexazinone ... 5,1467,1990,2357,2407,1506,2075,1507,2076
(2E)-Hexenal ... 2131
(E)-2-Hexenal ... 2142
cis-2-Hexene ... 1612
(Z)-2-Hexenol ... 2142
(Z)-3-Hexenol ... 2142
(2E)-Hexenyl acetate ... 2131
(E)-2-Hexenyl acetate ... 2142
(Z)-3-Hexenyl acetate ... 2142
(3Z)-Hexenyl butanoate ... 2131
Hexobarbital ... 415,926,2287,2714,843
Hexyl acetate ... 1876,2035,2396,2423,2060,2443,2096
Hexylamine ... 1776
Hexylcinnamaldehyde ... 2180,2181
α-Hexylcinnamaldehyde ... 2183,2446
Hexyl 2-ethylhexyl phthalate ... 1478,1769,2009,2192
Hexyl hexanoate ... 1876,2035,2396,2423
Hexyl 2-methylbutanoate ... 1876,2035,2396,2423
Hippuric acid ... 170,433
Histamine ... 143
D-Histidine ... 2797,620
L-Histidine ... 2797,620,1897,2304
DL-Histidine ... 2798,621
HMX ... 296,465
DL-Homatropine ... 1016,2918,1017,2919
DL-Homophenylalanine ... 2799,622
Homovanillic acid ... 1279,370,87,1281,372,89
Homoveratric acid ... 1280,371,88
Hotrienol ... 1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436,1883,2054,2402,2437
1,2,3,4,6,7,8-HpCDD ... 1436,1575,1812,1912,1437,1576,1813,1913
1,2,3,4,6,7,8-HpCDF ... 1436,1575,1812,1912,1437,1576,1813,1913
1,2,3,4,7,8,9-HpCDF ... 1436,1575,1812,1912,1437,1576,1813,1913
HU-210, HU-211 ((6a,10a)- 9-(Hydroxymethyl)-6,6-dimethyl-3-(2-methyloctan-2-yl)- 6a,7,10,10a-tetrahydrobenzo [c]chromen-1-ol) ... 449
HU-210, HU-211 ((6a,10a)-9-(Hydroxymethyl)-6,6-dimethyl-3-(2-methyloctan-20-yl)-6a,7,10,10a-tetrahydrobenzo[c]chromen-1-ol) ... 452
Human Growth Hormone human ... 628
α-Humulene ... 2050,2434,2096,2099,2103,2124,2131,2142,2161,2166,2170
1,2,3,4,7,8-HxCDD ... 1436,1575,1812,1912,1437,1576,1813,1913
1,2,3,6,7,8-HxCDD ... 1436,1575,1812,1912,1437,1576,1813,1913
1,2,3,7,8,9-HxCDD ... 1436,1575,1812,1912,1437,1576,1813,1913
1,2,3,4,7,8-HxCDF ... 1436,1575,1812,1912,1437,1576,1813,1913
1,2,3,6,7,8-HxCDF ... 1436,1575,1812,1912,1437,1576,1813,1913
1,2,3,7,8,9-HxCDF ... 1436,1575,1812,1912,1437,1576,1813,1913
2,3,4,6,7,8-HxCDF ... 1436,1575,1812,1912,1437,1576,1813,1913
Hyaluronidase ... 801
Hydrobenzoin ... 2586,64,2587,65
Hydrocarbons ... 1592
Hydrochlorothiazide ... 130,893,851
Hydrocodone ... 427,429
Hydrocodone solution ... 264,484,481,692
Hydrocortisone ... 199,205,1204,272
Hydrocortisone 21-acetate ... 203,453
Hydrogen ... 1639
Hydrogen sulfide ... 1687,2382
Hydrogen sulfide (1 ppm) ... 1783
Hydromorphone ... 429
Hydromorphone solution ... 264,484,692
Hydromorphone-3-β-D-glucuronide ... 692
Hydroquinidine ... 67,1209
Hydroquinidine hydrochloride ... 1218
Hydroquinone ... 1283
4-Hydroxybenzoic acid ... 37,279,1236
(2S,3S)-Hydroxybupropion hydrochloride ... 132,907,1189,231
3-Hydroxybutyric acid methyl ester ... 1714,2265,2522,2626
2-Hydroxycaproic acid methyl ester ... 1715,2266,2523,2627
HYDROXYCHLOROQUINE ... 1019,2920
6-Hydroxychlorzoxazone ... 963

25-Hydroxycholecalciferol 1318,241
Hydroxycitronellal 2180,2181
trans-3'-Hydroxycotinine 246
2-Hydroxy-7,12-dimethylbenz[*a*]anthracene (t-diol) 175,304,438
β-(Hydroxyethyl)theophylline 149
5-Hydroxyflavone 352
7-Hydroxyflavone 352
L-α-Hydroxyglutaric acid 240
D-α-Hydroxyglutaric acid disodium salt 255,2649,2843,3041,821
DL-α-Hydroxyglutaric acid disodium salt 240
L-α-Hydroxyglutaric acid disodium salt 255,2649,2843,3041,821
5-Hydroxyindoleacetic acid 190,191,192
17β-Hydroxy-17-methylandrosta-1,4-dien-3-one 195
2-Hydroxy-2-methyl butyric acid ethyl ester 1716,2267,2524,2628
2-Hydroxy-2-methyl butyric acid methyl ester 1717,2268,2525,2629
5-Hydroxymethyl-2-furaldehyde 59,60
3-Hydroxy-5-methylisoxazole 1890,2069
7-Hydroxymethyl-12-methylbenz[*a*]anthracene 175,304,438
7-Hydroxymethyl-12-methylbenz[*a*]anthracene-*trans*-3,4-diol 175,304,438
7-Hydroxymethyl-12-methylbenz[*a*]anthracene-*trans*-8,9-diol 175,304,438
7-Hydroxymethyl-12-methylbenz[*a*]anthracene-*trans*-10,11-diol 175,304,438
7-Hydroxymethyl-12-methylbenz[*a*]anthracen-2-ol 175,304,438
7-Hydroxymethyl-12-methylbenz[*a*]anthracen-3-ol 175,304,438
7-Hydroxymethyl-12-methylbenz[*a*]anthracen-4-ol 175,304,438
8-(Hydroxymethyl)-7-methyl-10-[(2S,3S,4R)-2,3,4,5-tetrahydroxypentyl]benzo[g]pteridine-2,4(3H,10H)- dione, Compound D 1219,274
4-Hydroxy-4-methyl-2-pentanone 1492,1583,2320,2333,1676,1726,1727
2-(Hydroxymethyl)piperidine 1584,2341
Hydroxymetoprolol 894,1020
2-Hydroxyoctanoic acid methyl ester 1718,2269,2526,2630
5-Hydroxyomeprazole 1372,247,248,249,250
4-Hydroxyphencyclidine 867
4-Hydroxyphenolarsonic acid 4
L-4-Hydroxyproline 1897,2304
Hydroxyrisperidon 132,907,1189,231
N-Hydroxysuccinimide 494
4-Hydroxytamoxifen (I) 1152
4-Hydroxytamoxifen (II) 1152
6β-Hydroxytestosterone solution 258
β-Hydroxytheophylline 1315,802
2-Hydroxy-2-trifluoromethyl propionic acid ethyl ester 1719,2527
2-Hydroxy-2-trifluoromethyl propionic acid methyl ester 1720,2528
5-Hydroxytryptophan 190,191,192
5-Hydroxy-L-tryptophan 467
1α-Hydroxyvitamin D_3 1323,260,1324,261
3-*epi*-25-Hydroxyvitamin D_3 1247,159,1248,160,1249,161,1269,172,1323,260,1324,261
25-Hydroxyvitamin D_2 1318,241
25-Hydroxyvitamin D2 solution 1247,159,1248,160,1249,161,1268,171,1319,242,1323,260
25-Hydroxyvitamin D3 solution 1247,159,1248,160,1249,161,1268,171,1269,172,1319,242,1323,260,1324,261
3-*epi*-25-Hydroxyvitamin D_2 solution 1323,260,1324,261
Hydroxyzine dihydrochloride 1021,2921
Hyperoside 1267,1330
Hypoxanthine 690

— I —

Ibuprofen 850,851,899,1022,2922,1093,1094
(*R*)-(−)-Ibuprofen 2218,2270,2631,2855
(*S*)-(+)-Ibuprofen 2218,2270,2631,2855
Icariin (PHY89714) 1267
Icaritin 1330
Icaritin (PHY80478) 1267
Icarrin 1330
Ifosfamide 1023,2923
Imazalil 1347,1394,1798,1894,1797,1893
Imidacloprid 1358,19,319
Imidan 2004,2413
Imipramine 1368,209,1164,210,1166,211,1167,212,239,811,1165,1168,1169,1170,2279,2303,2459,2468
Imipramine hydrochloride 1206
Imiquimod 133,913,1214
Immunoglobulin G 675,676,678
Immunoglobulin G (human) 494
Impurity 1446,1680,1827,1932,1447,1681,1828,1933,1448,1682,1829,1934
Indan 1612,1621
Indane 1610
Indanofan 1890,2069
Indapamide 985,986,1014,1024,2924,1025,2925
Indeno[1,2,3-*cd*]pyrene 2375,310,311,1387,1410,1479,2012,1388,1411,1482,2028
Indeno[*1,2,3-cd*]pyrene 1408,2010,1409,2011,1480,2013,1481,2014
Indeno[1,2,3-*cd*]pyrene 1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524

Indeno[*1,2,3-cd*]pyrene ... 1540
Indeno[1,2,3-*cd*]pyrene ... 1541,1552,1553,1554,1555,1556,1557
Indeno(1,2,3-cd)pyrene ... 1558
Indeno[*1,2,3-cd*]pyrene ... 1560,1561
Indeno[1,2,3-*cd*]pyrene ... 1562
Indeno[*1,2,3-cd*]pyrene ... 1563
Indeno[1,2,3-*cd*]pyrene ... 1564
Indeno[*1,2,3-cd*]pyrene ... 1567,1587
Indeno[1,2,3-*cd*]pyrene ... 1795,1891
Indeno[1,2,3-*c,d*]pyrene solution ... 1434,1435,1451,1936
Indigo carmine ... 388
Indomethacin ... 899,900,901
Indoprofen ... 1026,2926
Indoxacarb ... 1445,1679,1826,1931,1888,2067
Inhibin α-Subunit Fragment 1-32 human ... 632
Inhibin α-Subunit Fragment 1-32 porcine ... 633
Inosine ... 686,690
Inosine monophosphate ... 690
Inositol ... 2036,2037
Insulin from bovine pancreas ... 1028,636,1031,639
Insulin human ... 635,1028,636,1031,639
Insulin from porcine pancreas ... 1028,636,1031,639
Insulin, bovine ... 559,1030,638
Insulin, human ... 1029,637,1030,638
Insulin, porcine ... 1029,637,1030,638
2-Iodobutane ... 1706,2217,2514,2854
Iodomethane ... 1546,1547,1548,1549
Iodophenfos ... 1350,1401,1860,1995
α-Ionone ... 322,2111,2184
Ionox 100 ... 276,337,1898,2182
Ipratropium ... 119
Ipratropium bromide monohydrate ... 1134
Iprobenfos ... 1419,406,1888,2067
Iprodione ... 1430,1641,1796,1892,1444,1678,1825,1930
Iprodione metabolite ... 1889,2068
Isazofos ... 1350,1401,1860,1995
Isazophos ... 1885,2064
Isoamyl acetate ... 1725,1780,1876,2035,2396,2423,1969
Isoamyl alcohol ... 1725,2026,2027,2060,2443
Isobergapten ... 1262
Isobornyl acetate ... 2050,2434,2096
Isobutanal ... 1969
Isobutane ... 1592
Isobutanol ... 1725,1969,2026,2027,2060,2443
Isobutyl acetate ... 1675,1676,1725,1726,1727,1780,1969,2210,2211,2212,2452,2213,2214,2453
Isobutyl alcohol ... 1780
Isobutylbenzene ... 1612
2-Isobutyl-3-methoxypyrazine ... 1488,2038,2368,2424,1499,2070,2376,2445
Isobutyl 2-methylbutenoate ... 1876,2035,2396,2423
Isobutyric acid ... 1808,1908,2244,1809,1909,2245,1873,2031,2278,1969,1970,2404
Isocaproic acid ... 1808,1908,2244,1809,1909,2245,1873,2031,2278
Isocarbophos ... 1350,1401,1860,1995,1887,2066
Isocyanic acid ... 2338
Isodrin ... 1550,1551
Isofenphos ... 1430,1641,1796,1892,1444,1678,1825,1930,1885,2064
Isoleptospemone ... 2124
D-Isoleucine ... 2801,641
L-Isoleucine ... 2801,641,1897,2304
DL-Isoleucine ... 2800,640
DL-allo-Isoleucine ... 2737,507
DL-Isoleucine (FMOC derivatives) ... 2781,596
(−)-Isomenthol ... 2126,2189,2655,2678
(+)-Isomenthol ... 2126,2189,2655,2678
Isomenthone ... 2112
d-Isomenthone ... 2136
α-Isomethylionone ... 2181
Isooctane (solvent) ... 1613,1614,1615,1616,1617,1618,1624,1625,1626
Isopentanal ... 1969
Isopentane ... 1592,1721
Isopentanol ... 2060,2443
Isopentyl acetate ... 1675,1676,1726,1727,1895
Isophenfos ... 1350,1401,1860,1995
Isophenfos-methyl ... 1350,1401,1860,1995
Isophorone ... 1506,2075,1507,2076,1524,1552,1553,1554,1555,1556,1557,1558,1564
Isophorone diisocyanate (isomer 1) ... 2338
Isophorone diisocyanate (isomer 2) ... 2338
Isopinocampheol ... 1642,2487
Isopromethazine ... 1032,2927

Isopropamide iodide 1134
Isopropanol 1431,1572,1648,2379,1725,1969,2224,2226,2456,2293
Isopropyl acetate 1675,1676,1725,1726,1727,2210,2211,2212,2452,2213,2214,2453
Isopropyl alcohol 1780
4-Isopropylaniline 1655,1672
Isopropylbenzene 1493,2057,2370,2440,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074
Isopropylbenzene (Cumene) 1613,1614,1615,1616,1617,1618,1624,1625,1626
2-Isopropyl-3-methoxypyrazine 1488,2038,2368,2424,1499,2070,2376,2445
p-Isopropyltoluene 1504,2073
(±)-Isoproterenol hemisulfate salt 1033,2928
Isoprothiolane 1430,1641,1796,1892,1886,2065
Isoproturon 5,110,15,111,16,314,375
Isoquercitrin 376,377
Isosafrole 1550,1551
Isosafrole-2 1550
Isosilybin A 1266,1276,1288
Isosilybin B 1266,1276,1288
Isovaleraldehyde 21,2326
Isovaleric acid 1808,1908,2244,1809,1909,2245,1873,2031,2278,1970,2404
isovitexin (PHY89233) 1305
Isoxathion 1887,2066
Itraconazole solution 831,832
IVYIHPR 531,932

— J —

Jacobsen Catalyst (*N,N'*-Bis(3,5-di-tert-butylsalicylidene)-1,2-cyclohexanediaminomanganese(III) chloride) 2588,69,2589,70
(Z)-Jasmone 2167
cis-Jasmone 2111,2184
(E)-Jasmone 2131
(Z)-Jasmone 2137,2138
Jet fuel 1622
JMH-081 1226
JMH-122 1226
JWH-015 (328.18 m/z) 1227,839
JWH-018 1226
JWH-018 solution 450,451,449,482
JWH-018 4-hydroxypentyl metabolite 450
JWH-018 4-Hydroxypentyl metabolite 1225,838,1226
JWH-018 4-Hydroxypentyl metabolite solution 451
JWH-018 5-Hydroxypentyl metabolite solution 1225,838,1226
JWH-018 (Naphthalen-1-yl-(1-pentylindol-3-3yl)methanone) 452
JWH-018 5-Pentanoic acid metabolite solution 450,451,1225,838,1226
JWH-019 1226
JWH-073 1226
JWH-073 solution 450,451,449,482
JWH-073 (328.18 m/z) 1227,839
JWH-073 4-Butanoic acid metabolite solution 450,451,1225,838,1226
JWH-073 3-hydroxybutyl metabolite 450,451
JWH-073 3-Hydroxybutyl metabolite 452
JWH-073 3-Hydroxybutyl metabolite 1225,838
JWH-073 3-Hydroxybutyl metabolite 1226
JWH-073 3-Hydroxybutyl metabolite solution 449,482
JWH-073 4-Hydroxybutyl metabolite solution 1225,838,1226
JWH-073 (Naphthalen-1-yl-(1-butylindol-3-yl)methanone) 452
JWH-122 4-Hydroxypentyl metabolite solution 1225,838
JWH-122 5-Hydroxypentyl metabolite solution 1225,838
JWH-200 (1-(2-Morpholin-4-ylethyl)indol-3-yl)-naphthalen-1-ylmethanone) 449
JWH-200 ((1-(2-Morpholin-4-ylethyl)indol-3-yl)-naphthalen-1-ylmethanone) 452,482
JWH-203 (340.164 m/z) 1227,839
JWH-210 (370.23 m/z) 1227,839
JWH-210 4-Hydroxypentyl metabolite solution 1225,838
JWH-210 5-Hydroxypentyl metabolite solution 1225,838
JWH-250 4-Hydroxypentyl metabolite 1225,838
JWH-250 5-Hydroxypentyl metabolite 1225,838
JWH-250 (2-(2-Methoxyphenyl)-1-(1-pentylindol-3-yl)ethanone) 449
JWH-250 (2-(2-Methoxyphenyl)-1-(1-penylindol-3-yl)ethanone) 452,482

— K —

Kaempferol-3-O-glycoside 1275
40 kDa PEG molecule attached to protein identified as peak 1 777
Kepone 1550
Kerosene 1620
(±)-Ketamine hydrochloride 1034,2929,436
11-Keto-β-boswellic acid 1325,1326,1334,1335,1336,1337
Ketoconazole 112,2614,157,1036,2931
Ketoconazole solution 831,832
Ketoprofen 173,2636,2722,437,899,1037,2932,1038,2933,1093,1094
Ketorolac tris salt 1039,2934

Kitazine 1350,1401,1860,1995
Krypton 1745
KVYIHPI 531,932

— L —

Labetalol 131
Labetalol hydrochloride 1040,2935
α-Lactalbumin from bovine milk 744
Lactic acid 1273,2590,3036,71,1277,368,85,1278,369,86
D-(−)-Lactic acid 244,2648
L-(+)-Lactic acid 244,2648
DL-Lactic acid 68,1274,2591,2706,3037,363,72
L-Lactic Dehydrogenase from rabbit muscle 761
β-Lactoglobulin (bovine), carboxymethylated, tryptic digest 642
β-Lactoglobulin tryptic digest 812
Lactones 1729,2118,2529,2676
Lactose 380,387
α-Lactose 384,385
Lamivudine 911
Lansoprazole 1042,1043,2936,1173
Lasalocid A 215,1174
Lauric acid methyl ester 1818,1918,2250,1819,1919,2251
Lauric acid methyl ester (C12:0) 1815,1915,2247,1817,1917,2249,1836,1945,1837,1954,1839,1959
Lauric acid methyl ester (C12:0 1844,1964
Lauric acid methyl ester (C12:0) at 4 wt % 1822,1922,2254
Lauric aldehyde 2099,2105,2170
Lauryl gallate 1282,292
Lavandulol 2111,2184
LC 768
Lecithinase-A 704
Lemon oil 2120
Lenacil 1890,2069
Leptophos 1542,1543,1544,1545,1890,2069
Leptospermone 2124
D-Leucine 2803,644
L-Leucine 2803,644,1897,2304
DL-Leucine 2802,643
DL-Leucine (FMOC derivatives) 2782,597
Leu-Enk 788
Leu-enkephalin 709,710,720,721
[Leu^5]-Enkephalin 719
Levamisol hydrochloride 455,456
Levamisole 2290,2462,2291,2463
(−)-Levamisole hydrochloride solution 454
Levofloxacin 880,881
Levothyroxine sodium hydrate 174
Lidocaine 125,872,1187,2288,2289
Lidocaine solution 1370,229,230,1378,266,267,1379,268
Lignoceric acid methyl ester 1818,1918,2250,1819,1919,2251
Lignoceric acid methyl ester (C24:0) 1815,1915,2247,1817,1917,2249,1842,1962
Lignoceric acid methyl ester (C24:0) at 4 wt % 1822,1922,2254
Lime oil 2106
Limonene 1574,2328,2047,2175,2351,2353,2095,2096,2103,2121,2131,2137,2138,2142,2166,2167,2180
(*R*)-(+)-Limonene 1431,1572,1491,1581,2319,2331,2050,2434,2056,2439,2112,2120,2170,2181,2183,2446
d-Limonene 2106
l-Limonene 2136
δ-Limonene 2099,2105
cis-Limonene epoxide 2170
trans-Limonene epoxide 2170
Limonene oxide 1730,1986,2125,2188,2530,2654,2677,2701
cis-Limonene oxide 2050,2434,2096,2103,2120,2166
trans-Limonene oxide 2096,2103,2120,2131,2166
l-*cis* Limonene oxide 1730,1986,2125,2188,2530,2654,2677,2701
l-*trans* Limonene oxide 1730,1986,2125,2188,2530,2654,2677,2701
Linalol 2103
Linalool 2050,2434,2056,2439,2095,2096,2099, 2105,2106,2112,2120,2121,2124,2131,2136,2137,2138,2142,2161,2166,2167,2170,2180,2181,2183,2446
α-Linalool 1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436, 1883,2054,2402,2437
cis-Linalool oxide 2131,2142
Linalyl acetate 2056,2439,2096,2111,2184,2131,2142,2183,2446
Linalyl isobutanoate 2120
Linalyl propionate 2096,2131,2142
Lindane 1347,1394,1798,1894,1351,1403,1862,2000,1381,1395,1438,1924,1382,1396,1439,1925,1404,2001,1797,1893,1889,2068
Lindane solution 1507,2076,1512,1514
Linoleate (C18:2) 1636
Linoleic acid 357
Linoleic acid methyl ester 1818,1918,2250,1819,1919,2251

Linoleic acid methyl ester (C18:2) 1842,1962
Linoleic acid methyl ester (C18:2n6c) 1637,1815,1915,2247,1817,1917,2249,1836,1945,1837,1954, 1839,1959,1840,1960,1844,1964,1845,1965,1846,1966,1847,1967
Linoleic acid methyl ester (C18:2n6c) at 2 wt % 1822,1922,2254
Linolelaidic acid 357
Linolelaidic acid methyl ester 1818,1918,2250,1819,1919,2251
Linolelaidic acid methyl ester (C18:2n6t) 1815,1915,2247,1817,1917,2249
Linolelaidic acid methyl ester (C18:2n6t) at 2 wt % 1822,1922,2254
Linolenate (C18:3) 1636
α-Linolenic acid methyl ester 1637,1818,1918,2250,1819,1919,2251,1840,1960,1846,1966,1847,1967
γ-Linolenic acid methyl ester 1818,1918,2250,1819,1919,2251
Linolenic acid methyl ester (C18:3) 1842,1962
Linolenic acid methyl ester (C18:3n3) 1836,1945,1837,1954,1839,1959,1844,1964
α-Linolenic acid methyl ester (C18:3n3) 1815,1915,2247,1817,1917,2249
α-Linolenic acid methyl ester (C18:3n3) at 2 wt % 1822,1922,2254
γ-Linolenic acid methyl ester (C18:3n6) 1815,1915,2247,1817,1917,2249
α-Linolenic acid methyl ester (C18:3n6) at 2 wt % 1822,1922,2254
Linuron 1,295,5,110,15,111,16,294,302,2374,303,1391,305,314,375,317
Lipoxidase from *Glycine max* (soybean) 646
Lisinopril 129,892
Lithocholic acid 141,234
LLLn 392,393
LLnLn 392,393
LnPP 391
Lomefloxacin 1004,355,1005,356,878,880,881
Lopinavir 911
Lorazepam solution 833,1224
(±)-Lorazepam 1191,233,1044,2937,1045,2938,1046,2939
Lorazepam glucuronide solution 833,1224
Losartan potassium 1211
Lovastatin 1148,194,964
LSD 2291,2463,2301
LSD TMS 2301
Luciferin 2592,2804,647,73,2593,74
Lufenuron 1419,406
Lumiflavine (7,8,10-trimethylbenzo[g]pteridine-2,4(3H,10H)-dione), Compound B. 1219,274
Luteinizing hormone releasing hormone 710,721
Luteinizing hormone releasing hormone (LHRH) 709,720
Luteolin 352
Lycopene 1239,344,1317
Lypressin 820
D-Lysine 2805,648
L-Lysine 2805,648,1897,2304
DL-Lysine 2806,649
DL-Lysine (FMOC derivatives) 2783,598
Lysozyme 754,755,756,759
Lysozyme from chicken egg white 651,705,732,733,738,743,1130,746,747,761,762,1184,805

— M —

Malathion 1350,1401,1860,1995,1351,1403,1862,2000,1466,1740,1858,1989,2356,2384,2392,2406, 1471,1746,1861,1997,2361,2386,2393,2411,1542,1543,1544,1545,1585,2342,1885,2064
Maleic acid 850,890,891,954
Malic acid 68
Maltitol 382
Maltoheptaose 364
Maltohexaose 364
Maltopentaose 364
Maltose 364,384,385,386
Maltose solution 387
D-(+)-Maltose monohydrate 380
Maltotetraose 364
Maltotriose 364,384,385,386
Malvidin 3-(6-acetylglucoside) 336
Malvidin 3-(6-caffeoylglucoside) 336
Malvidin chloride 1320,1321
Malvidin 3-(6-cumarylglucoside) 336
Malvidin 3-glucoside 336
DL-Mandelic acid 1053,2656,288,2940
Mannitol 2036,2037
Mannose 364,383
D-(+)-Mannose 379
Maysin 1246
MCHM isomer #1 1465,2355
MCHM isomer #2 1465,2355
MCPA-thioethyl 1889,2068
MCPB 1890,2069
MCPB-ethyl 1890,2069
MDA 2234,2285,2457,2460

MDAI hydrochloride solution ... 472,476
MDA (3,4-methylenedioxyamphetamine) ... 411,412
MDEA ... 2234,2285,2457,2460
MDMA ... 2234,2285,2457,2460
(±)-MDMA solution ... 481
MDMA (Ecstacy, methylenedioxymethamphetamine) ... 411,412,427
MDPBP hydrochloride solution ... 469
Mecarbam ... 1419,406
Meclizine ... 860
Mecoprop methyl ester ... 1430,1641,1796,1892
Mefanamic acid ... 899
Mefenacet ... 1889,2068
Melamine ... 397,398,405,2078,2079,2080,2081
Mellitin ... 788
Membrane protein ... 663
Menadione (K3) ... 1252,1298
trans-p-Mentha-2,8-dien-1-ol ... 2131
cis-p-Menth-2-en-1-ol ... 2131,2142
trans-p-Menth-2-en-1-ol ... 2131
Menthofuran ... 2136,2137
Menthol ... 2095
(−)-Menthol ... 2126,2189,2655,2678,2136
Menthol ... 2137,2138,2167,2183,2446
iso-Menthol ... 2137,2138
neo-Menthol ... 2137,2138
(+)-Menthol ... 2126,2189,2655,2678
(−)-Menthone ... 2111,2184
Menthone ... 2112
(−)-Menthone ... 2136
Menthone ... 2137,2138
iso-Menthone ... 2137,2138
Menthyl acetate ... 2137
Menthyl acetate ... 2138,2167
iso-Menthyl acetate ... 2137,2138
neo-Menthyl acetate ... 2137,2138
Mepenzolate bromide ... 119,1134
Meperidine ... 427
Meperidine solution ... 481
mephedrone ... 435
Mephedrone hydrochloride ... 2049,2433
Mephedrone hydrochloride solution ... 243,468,434,472,476
(±)-Mephenytoin ... 1054,2941
Mephobarbital ... 414,925,417,929,418,930,928,1055,2942
(±)-Mephobarbital ... 415,926,2287,2714,843
Mephobarbital (methylphenobarbital) ... 1064,2951
Mepivacaine hydrochloride ... 1056,2943,1187
Mepronil ... 1888,2067
Meptazinol ... 1057,2944
Mercarbam ... 1887,2066
Merphos ... 1466,1740,1858,1989,2356,2384,2392,2406,1471,1746,1861,1997,2361,2386,2393,2411,1507,2076,1542,1543
Mesitylene ... 1527,1546,1547,1548,1549,1568,1588,2322,2344,1610,1611,1612,1621
Mesityl oxide ... 1676,1725,1726,1727,1780
Mesoridazine ... 165,578
Mesoridazine benzenesulfonate ... 1212
Metalaxyl ... 319,1430,1641,1796,1892,1888,2067
Metanephrine ... 254
Metaproterenol hemisulfate salt ... 1058,2945
Metaxaxil ... 1444,1678,1825,1930
Metazachlor ... 5,1447,1681,1828,1933
Met-enkephalin ... 709,710,719,720,721
Methabenzthiazuron ... 5,1419,406
Methacrifos ... 1440,1677,1824,1926,1885,2064
Methacrolein-2,4-dinitrophenylhydrazone ... 22,2334,23,2335
Methacrolein (2,4-DNPH derivative) ... 2336,24
Methacrylic acid ... 1582,2332
Methacrylonitrile ... 1504,2073
Methadone ... 2723,439,445,464,479,2289
(±)-Methadone hydrochloride ... 176,2637,2724,440,2288
Methamidiphos ... 1347,1394,1798,1894,1797,1893
Methamidophos ... 1350,1401,1860,1995
Methamphetamine ... 189,448
(-)-Methamphetamine ... 2718,409
Methamphetamine ... 411,412,480,2234,2285,2457,2460,2289
(+)-Methamphetamine ... 2718,409
d-Methamphetamine ... 2195,2231,2282,2621,2711,2847
l-Methamphetamine ... 2195,2231,2282,2621,2711,2847
(±)-Methamphetamine solution ... 481
Methamphetamine (TFA derivative) ... 1694,1835,1941,2296,2693,2235,2286,2458,2461

Methandienone 197,198,200,201
Methane 1622,1628,1639,1665,1723,1724,1734,1749,1750,1751,1753,1754
Methane (430 ng on column) 1752
Methanethiol 1687,2382
Methanol 1160,1485,1778,2032,2367,2390,2422,1493,2057,2370,2440,1500,1586,2321,2343, 1629,1630,1676,1721,1722,1725,1726,1727,1728,1780,1895,1969,2026,2027,2205,2206,2207,2450,2208,2209,2451,2226,2456,2292,2464, 2293,2294
Methanol, 0.01% 1635,2378
Methanol (solvent) 1525,1528,1529,1530
Methanol (~15 %) 1699
Methapyrilene 858,859,1550,1551
Methapyrilene HCl 1213
Methcathinone 441
Methedrone 435
Methedrone hydrochloride 2049,2433
Methedrone hydrochloride solution 243,468,434,469,477
Methidathion 1419,406,1350,1401,1860,1995,1885,2064
Methidation 1448,1682,1829,1934
Methiocarb 1,295,294,2004,2413
D-Methionine 2808,665
L-Methionine 2808,665,1231,1897,2304
DL-Methionine 2807,664,2809,666
DL-Methionine (t-BOC derivatives) 2752,534
DL-Methionine (FMOC derivatives) 2784,599
Methionine methyl ester (N-trifluoroacetyl derivatives) 1987,2305,2702,2726
L-Methionine sulfone 118,813
L-Methionine sulfoxide 813
L-Methionine sulfoximine 118,121,813
Methomyl 1,295,294,302,1391,305,1419,406
Methoprene 1889,2068
Methorphan 1060,2947
Methotrexate 863,864,903,904
Methoxychlor 1351,1403,1862,2000, 1381,1395,1438,1924,1382,1396,1439,1925,1388,1411,1482,2028,1466,1740,1858,1989,2356,2384,2392,2406,1469,1994,2359,2409, 1506,2075,1507,2076,1509,1510,1511,1512,1513,1514,1516,1532,1571,1591,2325,2347,1604
2-Methoxyethanol 1383,1457,1703,1975,2185,1725,1726,1727,2205,2206,2207,2450,2208,2209,2451,2225,2455
2-Methoxyethanol (methyl Cellosolve®) 1704,1976,2186
Methoxymaysin 1246
3-Methoxymethcathinone hydrochloride 469,477
2-Methoxy-5-methylaniline 1673
2-Methoxy-5-nitroaniline 1673
2-Methoxyphenol 2056,2439
Methoxyverapamil 952,953
(±)-Methoxyverapamil hydrochloride 1222
Methscopolamine 119
Methyl acetate 1565,1566,1675,1676,1725,1726,1727,1780, 1969,2056,2439,2136,2210,2211,2212,2452,2213,2214,2453
Methylacrylate 1504,2073
1-Methyladenosine 686
Methylamine 1648,2379,1649,2380,2225,2455
Methyl anthranilate 2131
Methyl arachidate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1843,1963,1850,1978,1866,2015,2273,1867,2018,2274,2237
Methyl arachidonate 1814,1914,2246,1816,1916,2248, 1820,1920,2252,1848,1968,2263,1859,1992,2272,1867,2018,2274,1868,2019,2275,1869,2020,2276,2262
DL-*threo*-β-Methylaspartic acid 2810,667
Methyl azinphos 1544,1545
Methyl behenate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1843,1963,1850,1978
Methyl benzoate 1207,273,489
α-Methylbenzylamine 2594,75
α-Methylbenzylamine (N-3,5-Dinitrobenzoyl derivative) 2595,76
(±)-α-Methylbenzyl butyrate 1759,2149,2541,2680
2-Methylbutanal 1896,2403,2056,2439
3-Methylbutanal 1871,2022,2395,2417,1896,2403,2056,2439
2-Methylbutane 1610,1611,1612,1665,1723
2-Methyl-1-butanol 1644,1876,2035,2396,2423,2060,2443
2-Methyl-2-butanol 1644
3-Methylbutanol 1676,1726,1727,1895,2210,2211,2212,2452,2213,2214,2453
3-Methyl-1-butanol 1644
3-Methyl-2-butanol 1969
3-Methyl-2-butanone 1485,1778,2032,2367,2390,2422
2-Methyl-1-butene 1612
2-Methyl-2-butene 1612,1721,1722
Methyl *tert*-butyl ether 1493,2057,2370,2440,1594,1722,2224
Methyl *t*-butyl ether-(α,α′-^{14}C) 1528
Methyl *tert*-butyl ether (MTBE) 1530
3-Methylbutyl hexanoate 1876,2035,2396,2423
Methyl butyl ketone 2205,2206,2207,2450,2208,2209,2451
methyl *n*-butyl ketone 1568,1588,2322,2344

Methyl butyrate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1971,2405
3-Methyl butyrate 2124
Methyl caprate 1820,1920,2252,1850,1978
Methyl caproate 1809,1909,2245,1820,1920,2252
Methyl caprylate 350,56,1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978
3-Methylcatechol 152,44
4-Methylcatechol 152,44
Methyl cellosolve 1780
Methyl chavicol 2161
Methyl chloro isothiazolinone 1210,293,321
Methyl chloropyrifos 1544,1545
Methyl chlorpyrifos 1347,1394,1798,1894,1797,1893
3-Methylcholanthrene 1540,1541,1550,1551
5-Methylchrysene 1795,1891
Methylcyclohexane 1565,1566,2205,2206,2207,2450,2208,2209,2451
2-Methylcyclohexanol 1725
2-Methylcyclohexanol isomers 1726,1727
Methylcyclopentane 1592,1612
3-Methylcyclopentene 1612
2-Methyl-2-cyclopentenone 2056,2439
2′-O-Methylcytidine 686
3-Methylcytidine 686
5-Methylcytidine 686
Methyl decanoate 350,56,1808,1908,2244,1814,1914,2246,1816,1916,2248
2-Methyl-4,6-dinitrophenol 1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415,1524,1531,1552,1553,1554, 1555,1556,1557,1558,1564
Methyl *cis*-13,16-docosadienoate 1814,1914,2246,1816,1916,2248,1820,1920,2252
Methyl docosahexaenoate 1848,1968,2263,1859,1992,2272
Methyl *cis*-4,7,10,13,16,19-docosahexaenoate 1820,1920,2252
Methyl docosanoate 1866,2015,2273
Methyl docosapentaenoate 1848,1968,2263,1859,1992,2272
Methyl *cis*-4,7,10,13,16-docosapentaenoate 1867,2018,2274
Methyl all-*cis*-7,10,13,16,19-docosapentaenoate 1867,2018,2274,1868,2019,2275,1869,2020,2276,2262
Methyl docosatetraenoate 1848,1968,2263,1859,1992,2272
Methyl *cis*-11-docosenoate 1868,2019,2275
Methyl dodecanoate 350,56,1808,1908,2244,2236,2237,2238,2239,2240
Methyl eicosadienoate 1859,1992,2272
Methyl *cis*-8,11-eicosadienoate 1867,2018,2274
Methyl *cis*-11,14-eicosadienoate 1820,1920,2252
Methyl *cis*,*cis*-11,14-eicosadienoate 1814,1914,2246,1816,1916,2248
Methyl eicosanoate 2236,2238,2239,2240
Methyl eicosapentaenoate 1848,1968,2263,1859,1992,2272
Methyl all-*cis*-5,8,11,14,17-eicosapentaenoate 1814,1914,2246,1816,1916,2248,1820,1920,2252, 1867,2018,2274,1868,2019,2275,1869,2020,2276,2262
Methyl *cis*-8,11,14,17-eicosatetraenoate 1868,2019,2275,1869,2020,2276
Methyl eicosatrienoate 1848,1968,2263,1859,1992,2272
Methyl *cis*-8,11,14-eicosatrienoate 1820,1920,2252
Methyl *cis*-11,14,17-eicosatrienoate 1820,1920,2252
Methyl eicosenoate 1843,1963,1848,1968,2263,1866,2015,2273
Methyl *cis*-9-eicosenoate 1868,2019,2275
Methyl *cis*-11-eicosenoate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978,1867,2018,2274,1868,2019,2275,1869,2020,2276
Methyl elaidate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978,2237
4,4′-Methylenebis(*N*,*N*-dimethylaniline) 1673
Methylenebis(phenyl isocyanate) 2340,27
Methylene chloride 1493,2057,2370,2440,1494,2058,2371,2441,1497,2061,1498,2062,2373,2444, 1500,1586,2321,2343,1502,2071,1503,2072,1504,2073,1505,2074,1522,1569,1589,2323,2345,1725,1780,2206,2208,2224,2226,2456
Methylene chloride (impurity) 1529
Methylene chloride (solvent) 1526,2308,2311
(±)-3,4-Methylenedioxymethamphetamine hydrochloride solution 432
3,4-Methylenedioxypyrovalerone 2049,2433
3,4-Methylenedioxypyrovalerone HCl (MDPV) solution 243,468,434,470,478
4,4′-Methylenediphenyl diisocyanate 2338
N,*N*′-(Methylenediphenylene)bis(4-(2-pyridi nyl)-1-piperazinecarboxamide) 25
(±)-4-Methylephedrine hydrochloride solution 470,474
Methyl erucate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1843,1963,1850,1978,1868,2019,2275
2,4-D methyl ester 306,307,1571,1591,2325,2347
2,4,5-T methyl ester 306,307
4-Methylethcathinone hydrochloride solution 471,478
2-Methyl-6-ethylaniline 1655,1672
1-Methyl-2-ethylbenzene 1610,1612
1-Methyl-3-ethylbenzene 1610,1611,1612
1-Methyl-4-ethylbenzene 1610,1612
2-Methyl-4-ethylhexane 1592
Methyl ethyl ketone 1431,1572,1593,1725,1780,2051,2435,2224
2-Methyl-3-ethylpentane 1592
3-Methyl-3-ethylpentane 1592
Methyl eugenol 2161
Methyl formate 1675,1676,1725,1726,1727,1780,2060,2443

N-Methyl-2-formylpyrrole 2056,2439
5-Methyl-2-furaldehyde 59,60
2-Methylfuran 2056,2439
5-Methylfurfural 2056,2439
1-(5-Methyl-2-furyl)-2-propanone 2056,2439
Methyl geranate 2096
Methyl geranoate 2050,2434,2120
7-Methylguanosine 686
Methyl heneicosanoate 1814,1914,2246,1816,1916,2248,1820,1920,2252
Methyl heptadecanoate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978,2236,2237,2238,2239,2240,2262
Methyl *cis*-10-heptadecenoate 1814,1914,2246,1816,1916,2248,1820,1920,2252
2-Methylheptane 1592,1610,1612
3-Methylheptane 1592,1610,1612
4-Methylheptane 1592,1612
Methylheptanol 1971,2405
2-Methyl-1-heptene 1612
6-Methyl-5-hepten-2-ol 1642,2487,2131
6-Methyl-5-hepten-2-one 1491,1581,2319,2331,1582,2332,2045,2350,2096,2111,2184,2131,2142
Methyl *cis*-9,12-hexadecadienoate 1869,2020,2276
Methyl hexadecanoate 2239,2240
Methyl *cis*-6,9,12,15-hexadecatetraenoate 1869,2020,2276
Methyl *cis*-6,9,12-hexadecatrienoate 1869,2020,2276,2262
Methyl cis-9-hexadecenoate 2236,2237,2238
Methyl *cis*-9-hexadecenoate 2239,2240
Methylhexanal 1971,2405
2-Methylhexane 1592,1610,1611
3-Methylhexane 1592,1610,1611,1612
Methyl hexanoate 1814,1914,2246,1816,1916,2248
5-Methyl-2-hexanone 1676,1725,1727
2-Methyl-1-hexene 1612
5-Methyl-1-hexene 1612
2-Methylhexenes 1612
o-Methylhippuric acid 170,433
m-Methylhippuric acid 170,433
p-Methylhippuric acid 170,433
Methyl 4-hydroxybenzoate 284,1748,1998,2190,2223,2387,2412,2447,2454
Methyl 2-hydroxydecanoate 2236,2238,2239,2240
Methyl (±)-2-hydroxydecanoate 2237
Methyl 2-hydroxydodecanoate 2236,2237,2238,2239,2240
Methyl 3-hydroxydodecanoate 2236,2238,2239,2240
Methyl (±)-3-hydroxydodecanoate 2237
Methyl 2-hydroxyhexadecanoate 2236,2237,2238,2239,2240
7-Methyl-12-hydroxymethylbenz[*a*]anthracene 175,304,438
7-Methyl-12-hydroxymethylbenz[*a*]anthracene-*trans*-8,9-diol 175,304,438
7-Methyl-12-hydroxymethylbenz[*a*]anthracen-2-ol 175,304,438
7-Methyl-12-hydroxymethylbenz[*a*]anthracen-3-ol 175,304,438
7-Methyl-12-hydroxymethylbenz[*a*]anthracen-4-ol 175,304,438
Methyl 2-hydroxytetradecanoate 2236,2237,2238,2239,2240
Methyl 3-hydroxytetradecanoate 2236,2237,2238,2239,2240
2-Methylimidazole 365
4(5)-Methylimidazole 365
2-Methylindane 1612
Methylindan isomer 1621
Methylionone 2183,2446
2-Methylisoborneol 1488,2038,2368,2424,1499,2070,2376,2445
Methyl isocyanate 2338
2-Methyl-5-isopropylpyrazine 1871,2022,2395,2417
2-Methyl-4-isothiazolin-3-one 1210,293,321
Methyl jasmonate 2111,2184
Methyl DL-lactate 322
(±)-Methyl-γ-lactone 1729,2118,2529,2676
Methyl laurate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978
Methyl lignocerate 1820,1920,2252,1843,1963,1859,1992,2272
Methyl linoleate 350,56,1808,1908,2244,1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978,1859,1992,2272,1866,2015,2273,1867,2018,2274,1868,2019,2275,1869,2020,2276,2262
Methyl linolelaidate 1814,1914,2246,1816,1916,2248,1820,1920,2252
Methyl linolenate 350,56,1808,1908,2244,1814,1914,2246,1816,1916,2248,1820,1920,2252,1843,1963,1866,2015,2273,1868,2019,2275,1869,2020,2276,2262
Methyl α-linolenate 357
Methyl γ-linolenate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1859,1992,2272,1867,2018,2274
Methyl (*R*)-(−)-mandelate 1733,2221,2533,2858,1785,2172,2558,2688
Methyl (*S*)-(+)-mandelate 1733,2221,2533,2858,1785,2172,2558,2688
Methyl DL-mandelate 322
R-(-)-Methyl mandelate 1731,2219,2531,2856,1732,2220,2532,2857
S-(+)-Methyl mandelate 1731,2219,2531,2856,1732,2220,2532,2857
Methyl mercaptan 1686,2381
Methyl mercaptan (1 ppm) 1783
Methyl methacrylate 1504,2073

Methyl methanesulfonate 1550,1551
α-Methyl-DL-methionine 810
Methyl (*E*)-α-(methoxyimino)-2-(2-methylphenoxymethyl)phenylacetate 1886,2065
Methyl N-methyl anthranilate 2103,2131,2142,2166
Methyl *cis*-9,10-methylenehexadecanoate 2236,2237,2238,2239,2240
Methyl *cis*-9,10-methyleneoctadecanoate 2236,2237,2238,2239,2240
Methyl 15-methylhexadecanoate 2236,2237,2238,2239,2240
Methyl 14-methylpentadecanoate 2236,2237,2238,2239,2240
Methyl 12-methyltetradecanoate 2236,2237,2238,2239,2240
Methyl 13-methyltetradecanoate 2236,2237,2238,2239,2240
Methyl myristate 350,56,1814,1914,2246,1816,1916,2248,1820,1920,2252,1843,1963,1848,1968,2263, 1850,1978,1859,1992,2272,1868,2019,2275,1869,2020,2276,2236,2237,2238,2262
Methyl myristoleate 1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978
1-Methylnaphthalene 1408,2010,1409,2011,1550,1551,1593,1594,1595,1596,1610,1611,1612,2300,2467
1-Methylnaphthalene solution 1597
2-Methylnaphthalene 1408,2010,1484,2030,2366,2421,1552,1553,1554, 1555,1556,1557,1564,1593,1594,1596,1597,2300,2467
2-Methylnaphthalene solution 1595
2-Methylnaphthalene (β) 1409,2011,1558,1610,1611,1612
Methyl nervonate 1820,1920,2252,1859,1992,2272
2-Methyl-5-nitroaniline 1673
4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) 245
4-(Methylnitrosoamino)-1-(3-pyridinyl)-1-butanone 246
Methyl nonadecanoate 2236,2237,2238,2239,2240
3-Methylnonane 1612
Methyl *cis*-9,12-octadecadienoate 2236,2238,2239,2240
Methyl octadecanoate 2236,2238,2239,2240
Methyl *cis*-9-octadecanoate 2236,2238,2239,2240
Methyl *trans*-9-octadecanoate 2236,2238,2239,2240
2-Methyloctane 1592
3-Methyloctane 1592,1612
4-Methyloctane 1592,1612
Methyl oleate 350,56,1808,1908,2244,1814,1914,2246,1816,1916,2248,1820,1920,2252,1843,1963,1850,1978,1866,2015,2273, 1867,2018,2274,1868,2019,2275,1869,2020,2276,2237,2262
Methylone 435
Methylone hydrochloride 243,468,434,472,2049,2433
Methyl palmitate 350,56,1808,1908,2244,1814,1914,2246,1816,1916,2248,1820,1920,2252, 1843,1963,1850,1978,1859,1992,2272,1867,2018,2274,1868,2019,2275,1869,2020,2276,2236,2237,2238,2262
Methyl palmitoleate 357,1808,1908,2244,1814,1914,2246,1816,1916,2248,1820,1920,2252, 1850,1978,1868,2019,2275,1869,2020,2276,2262
Methyl paraben 282,283,286
Methyl Paraben 289,290,291
Methyl Paraben 1106
Methyl paraoxon 1506,2075
Methyl parathion 308,309,1440,1677,1824,1926,1466,1740,1858,1989,2356,2384,2392,2406,1470,1996,2360,2410, 1471,1746,1861,1997,2361,2386,2393,2411,1542,1543,1550,1551
Methyl pentadecanoate 1814,1914,2246,1816,1916,2248,1820,1920,2252, 1850,1978,2236,2237,2238,2239,2240,2262
Methyl *cis*-10-pentadecenoate 1814,1914,2246,1816,1916,2248,1820,1920,2252
2-Methylpentane 1528,1529,1530,1592,1610,1611,1612
3-Methylpentane 1592,1610,1611,1612,2051,2435
1-Methylpentan-1-ol 1969
2-Methyl-1-pentanol 1969
4-Methyl-2-pentanol 1666
4-Methyl-2-pentanone 1431,1572,1504,2073,1525,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344, 1676,1725,1726,1727,2051,2435,2210,2211,2212,2452,2213,2214,2453,2224
3-Methyl-2-pentene 1612
trans-3-Methyl-2-pentene 1612
4-Methylpenten-2-one 1871,2022,2395,2417
1-Methylphenanthrene 1408,2010,1409,2011
Methylphenidate 1138,2997,446,2222,2271,2302,2632,2716,2859,844,974
Methylphenidate hydrochloride 1062,177,2638,2949,1061,2948,442,1063,2950,443,1072,2959
Methylphenidate (Ritalin) 2234,2285,2457,2460
2-Methylphenol 1359,1386,1407,1475,1755,2005,1476,1756,2006,2363,2388,2414, 1477,1757,2007,2364,2389,2415,1531,1552,1553,1554,1555,1557,1564,1725
3-Methylphenol 1359,1386,1407,1475,1755,2005,1476,1756,2006,2363,2388,2414, 1477,1757,2007,2364,2389,2415,1531,1550,1551,1725
4-Methylphenol 1476,1756,2006,2363,2388,2414, 1477,1757,2007,2364,2389,2415,1531,1552,1553,1554,1555,1557,1564,1725
N,N'-(2-Methyl-1,3-phenylene)bis(4-(2-pyridinyl)-1-piperazinecarboxamide) 25
N,N'-(4-Methyl-1,3-phenylene)bis(4-(2-pyridinyl)-1-piperazinecarboxamide) 25
4-Methyl-*m*-phenylenediamine 1672
5-Methyl-5-phenylhydantoin 2596,77,2597,78,2811,668,1066,2953
4-Methyl-5-phenyl-2-oxazolidinone 2598,79
1-Methyl-3-phenylpropylamine (4-Phenyl-2-butylamine) (N-TFA derivatives) 1738,2537
α-Methyl-α-phenylsuccinimide 2599,80,2812,669
Methyl phenyl sulfoxide 1067,2600,2954,81

2-Methylpropanal ... 1896,2403
2-Methylpropane ... 1610,1611,1612,1665,1723
2-Methyl-1-propanol ... 1644,1666,1676,1726,1727,1895
2-Methylpropene ... 1612,1665,1723
2-Methyl-6-propenylpyrazine ... 1871,2022,2395,2417
Methylpropyl butanoate ... 1876,2035,2396,2423
2-Methyl-5-propylpyrazine ... 1871,2022,2395,2417
2-Methylpyrazine ... 1871,2022,2395,2417,2056,2439
3-Methylpyrazole ... 1423,444
4-Methylpyrazole ... 1423,444
1-Methylpyrrole ... 1871,2022,2395,2417,2056,2439
n-Methylpyrrolidone ... 2205,2206,2207,2450,2208,2209,2451
2-Methylresorcinol ... 152,44
Methyl salicylate ... 2045,2350,2183,2446
Methylscopolamine ... 885,886
Methyl stearate ... 350,56,1808,1908,2244,1814,1914,2246,
1816,1916,2248,1820,1920,2252,1843,1963,1866,2015,2273,1867,2018,2274,1869,2020,2276,2237,2262
Methyl stearidonate ... 1866,2015,2273,1868,2019,2275,1869,2020,2276
Methylstyrene ... 1492,1583,2320,2333
17α-Methyltestosterone solution ... 1374,257,258
Methyl tetracosanoate ... 1814,1914,2246,1816,1916,2248
Methyl *cis*-15-tetracosenoate ... 1814,1914,2246,1816,1916,2248,2237
Methyl tetradecanoate ... 2239,2240
2-Methylthiophene ... 1685
Methyl tricosanoate ... 1814,1914,2246,1816,1916,2248,1820,1920,2252,1866,2015,2273
Methyl tridecanoate ... 1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978,2236,2237,2238,2239,2240
3-Methyl-4-(2,6,6-trimethyl-2-cyclohexen-1-yl)-3-buten-2-one ... 2180
α-Methyl-m-tyrosine ... 2813,670
Methyl undecanoate ... 1814,1914,2246,1816,1916,2248,1820,1920,2252,1850,1978,1970,2404,2236,2237,2238,2239,2240
1-Methyluric acid ... 149,150
5-Methyluridine ... 686
1-Methylxanthine ... 149,150,1315,802
3-Methylxanthine ... 150
7-Methylxanthine ... 1362,1427,148,946,149,150,1315,802
Methyprylon ... 415,926
Metobromuron ... 5
Metolachlor ... 5,1351,1403,1862,2000,1506,2075,1507,2076,1888,2067
Metoprolol ... 894,941,954,1020
Metoprolol tartrate solution ... 1228
(±)-Metoprolol (+)-tartrate salt ... 140,2633,2720,419,1069,2956,1070,2957,1071,2958
Metoxuron ... 5
Metribuzin ... 1391,305,1506,2075,1507,2076,1889,2068
Metronidazole solution ... 831,832
Mevinolin from *Aspergillus* sp. ... 157
Mevinphos ... 1506,2075,1507,2076,1542,1543
Mevinphos-1 ... 1885,2064
Mevinphos-2 ... 1885,2064
Mevinphos isomers ... 1544,1545
Mexacarbate ... 1,295,294
MGK 264 ... 1506,2075
Mianserin hydrochloride ... 1073,2960,1074,2961,1075,2962,1076,2963,1077,2964,1078,2965
Miconazole ... 112,2614,1079,2966
(±)-Miconazole nitrate salt ... 1080,2967
Midazolam solution ... 833
Milk proteins ... 366,671
Minocycline ... 1157
Mirex ... 1571,1591,2325,2347
Molinate ... 1448,1682,1829,1934,1506,2075,1507,2076,1886,2065
Monensin ... 215,1174
3-Monoacetylmorphine (m/z 328) NMID766 ... 490
2-Monochlorobiphenyl ... 1441,1927,1442,1928
2-monochlorobiphenyl ... 1443,1929
4-Monochlorobiphenyl ... 1441,1927,1442,1928
4-monochlorobiphenyl ... 1443,1929
Monocrotophos ... 1350,1401,1860,1995,1444,1678,1825,1930,1542,1543,1544,1545,1887,2066
Monolinolein (C18:2) ... 1638
Monolinolenin (C18:3) ... 1638
Monolinuron ... 5
Monoolein ... 1632,1633
Monoolein (C18:1) ... 1634,1638
Monopalmitin (C16:0) ... 1634,1638
Monostearin (C18:0) ... 1634,1638
Monuron ... 1,295,294,302,1391,305,314,375,317
Morphine ... 124,868,427,428,429,2288,2289
Morphine solution ... 1082,178,264,484,481,490,491,692
Morphine glucuronide ... 692
Morphine-3-β-D-glucuronide solution ... 1082,178,491
Morphine-6-β-D-glucuronide solution ... 1082,178

Mosapride citrate salt dihydrate 1083,2968
Musk T 2111,2184
Musk ambrette 2111,2184
Musk ketone 2111,2184
Musk xylol 2111,2184
α-Muurolene 2131
τ-Muurolol 2161
Myclobutanil 1447,1681,1828,1933,1886,2065,2004,2413
Myoglobin 207,740,754,755,756,757,826
Myoglobin from equine heart 825
Myrcene 2047,2175,2351,2353,2050,2434,2095,2096,2099,2103,2105,2106, 2111,2184,2120,2121,2124,2131,2136,2137,2138,2142,2161,2166,2167,2170,2183,2446
β-Myrcene 2056,2439
Myricetin 352,1259
Myristic acid 1808,1908,2244
Myristic acid methyl ester 1818,1918,2250,1819,1919,2251,1837,1954
Myristic acid methyl ester (C14:0) 1815,1915,2247,1817,1917,2249,1836,1945,1839,1959,1842,1962,1844,1964
Myristic acid methyl ester (C14:0) at 4 wt % 1822,1922,2254
Myristoleic acid methyl ester 1818,1918,2250,1819,1919,2251
Myristoleic acid methyl ester (C14:1) 1815,1915,2247,1817,1917,2249
Myristoleic acid methyl ester (C14:1) at 2 wt % 1822,1922,2254
(*E*)-Myroxide 2120
trans-Myrtanol 2131

— N —

NAD^+ 690
NADH 690
$NADP^+$ 690
NADPH 690
Naled 1542,1543
Nandrolone 195,197,198,200,201
Naphthalene 2375,310,311,842,845,1117,1408,2010,1409,2011, 1451,1936,1480,2013,1481,2014,1483,2029,2365,2420,1493,2057,2370,2440,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072, 1504,2073,1505,2074,1517,1518,1524,1527,1528,1530,1540,1541,1546,1547,1548,1549,1552,1553,1554,1555,1556,1557,1558,1560,1561, 1562,1563,1564,1567,1587,1582,2332,1593,1594,1595,1596,1597,1611,1612,1613,1614,1615,1616,1617,1618,2300,2467
Naphthalene-d_8 ..... 842,1409,2011,1477,1757,2007,2364,2389,2415, 1524,1550,1551,1552,1553,1554,1555,1556,1557,1564
Naphthalene-d_8 1567,1587
Naphthalene-d_8 1795,1891
Naphthalene-d8 (I.S) 1558
1,4-Naphthoquinone 1550,1551
1-Naphthylamine 1550,1551
2-Naphthylamine 1484,2030,2366,2421,1550,1551,1673
1-(1-Naphthyl)ethylamine 1339,2618
(±)-1-(1-Naphthyl)ethylamine 1086,2601,2969,82
1-Naphthyl-*N*-methylcarbamate 1,295,294,302,1391,305,2004,2413
N-(1-Naphthyl)thiourea 1391,305
Naphyrone hydrochloride 469
Napropamide 313,1430,1641,1796,1892,1506,2075,1888,2067
Naproxen 850,899,1087,2970,1093,1094
Narasin 215
Naringin 359
Narirutin 353,354,359
Natriuretic Peptide, C-Type 1889,2068
Nebivolol 1088,2971
Neburon 1,295,294,302,2374,303,314,375
Nefazodone 157
Neo-chlorogenic acid 1275
Neodihydrocarveol 2167
(−)-Neomenthol 2126,2189,2655,2678
Neomenthol 2136
(+)-Neomenthol 2126,2189,2655,2678
Neon 1745
Neotame 346,347,348,349
Neral 2050,2434,2096,2099,2103,2105,2106,2120,2121,2131,2142,2166,2170,2180,2181
Nereistoxin oxalate 1890,2069
Nerol 2131,2142
Nerolidol 2111,2184
(E)-Nerolidol 2096,2131,2142
Nervonic acid methyl ester 1818,1918,2250,1819,1919,2251
Nervonic acid methyl ester (C24:1n9) 1815,1915,2247,1817,1917,2249
Nervonic acid methyl ester (C24:1n9) at 2 wt % 1822,1922,2254
Neryl acetate 2050,2434,2099,2103,2105,2106,2120,2121,2131,2142,2166,2170
Neurotensin 788
Nevirapine 911,1214
New Coccine 388
Niacin 1301
Niacinamide 122,1299,1300,1332,1333

Niacinamide (Vitamin B_3) ... 334,335,332
Nicardipine hydrochloride ... 1089,2972,1090,2973
Nicotinamide ... 1302,1303,1304,1306,1307,1308
Nicotine ... 2289
(±)-Nicotine ... 2288
S(−)-Nicotine solution ... 245
Nicotinic acid ... 1300,1302,1303,1304,1306,1307,1308,1309,1333
Nifedipine ... 896,1215
Nitenpyram ... 1358,19
Nitralin ... 1889,2068
Nitrazepam ... 135,935,1191,233,916,1091
Nitrazepam solution ... 833
2-Nitroaniline ... 492,1484,2030,2366,2421,1552,1553,1554,1555,1556,1557,1558,1564,1673
3-Nitroaniline ... 1484,2030,2366,2421,1552,1553,1554,1555,1556,1557,1558,1564,1673
4-Nitroaniline ... 1484,2030,2366,2421,1552,1553,1554,1555,1556,1557,1558,1564,1673
Nitrobenzene ... 296,1455,1695,2297,2354,2383,2466, 1456,1696,2298,1504,2073,1524,1552,1553,1554,1555,1556,1557,1558,1564
Nitrobenzene-d_5 ... 1524,1550,1551,1552,1553,1554,1555,1556,1557,1558,1564
4-Nitrocatechol ... 152,44
Nitrofen ... 1889,2068
Nitrofurantoin ... 127,877,879
Nitrogen ... 1622,1627,1628,1639,1743,1747,1749,1750,1751,1753
Nitrogen (bulk) ... 1752,1754
Nitromethane ... 2205,2206,2207,2450,2208,2209,2451
2-Nitrophenol ... 90,1359,1386,1407,1475,1755,2005, 1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415,1524,1531,1552,1553,1554,1555,1556,1557,1558,1564
4-Nitrophenol ... 90,1359,1386,1407,1475,1755,2005, 1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415,1524,1531,1552,1553,1554,1555,1556,1557
4-nitrophenol ... 1558
4-Nitrophenol ... 1564
4-Nitrophenyl β-D-maltoside ... 119
Nitropropane ... 1676
2-Nitropropane ... 1504,2073,1725,1726,1727,1780
4-Nitroquinoline *N*-oxide ... 1550,1551
(S)-N-Nitrosoanabasine (NAB) solution ... 245
N-Nitrosodi-*n*-butylamine ... 1468,1744,1991,2358,2385,2408,1550,1551
N-Nitrosodiethylamine ... 1468,1744,1991,2358,2385,2408,1550,1551
N-Nitrosodimethylamine ... 1468,1744,1991,2358,2385,2408,1552,1553,1554,1555,1556,1557,1558
N-Nitrosodiphenylamine ... 1468,1744,1991,2358,2385,2408,1524,1552,1553,1554,1555,1556,1557,1558,1564
N-Nitrosodi-*n*-propylamine ... 1468,1744,1991,2358,2385,2408,1524,1552,1553,1554,1555,1556,1557,1558,1564
N-Nitrosomethylethylamine ... 1468,1744,1991,2358,2385,2408,1550,1551
N-Nitrosomorpholine ... 1550,1551
N-Nitrosopiperidine ... 1468,1744,1991,2358,2385,2408,1550,1551
N-Nitrosopyrrolidine ... 1550,1551
Nitrothal-isopropyl ... 1887,2066
2-Nitrotoluene ... 297,1455,1695,2297,2354,2383,2466,1456,1696,2298
3-Nitrotoluene ... 297,1455,1695,2297,2354,2383,2466,1456,1696,2298
4-Nitrotoluene ... 297,1455,1695,2297,2354,2383,2466,1456,1696,2298
5-Nitro-*o*-toluidine ... 1550,1551
Nitrous oxide ... 1743
Nivalenol ... 17,394
Nivalenol hydrate ... 12,358
Nizatidine ... 1173
trans-Nonachlor ... 1388,1411,1482,2028,1507,2076,1571,1591,2325,2347
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl ... 1441,1927,1442,1928
2,2',3,3',4,4',5,5',6-nonachlorobiphenyl ... 1443,1929
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl ... 1441,1927,1442,1928
2,2',3,3',4,5,5',6,6'-nonachlorobiphenyl ... 1443,1929
Nonadecane ... 1637
Nonadecane (C19) ... 1636
Nonanal ... 1431,1572,1490,1580,2318,2330,1491,1581,2319,2331, 1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436,1883,2054,2402,2437, 1971,2405,2045,2350,2050,2434,2096,2099,2111,2184,2120,2166,2170
Nonane ... 1431,1572,1486,1487,1528,1530,1595,1601,1667,1602,1668,1610
n-Nonane ... 1592,1612
Nonane (C9) ... 1636
Nonanoic acid ... 1492,1583,2320,2333,1878,2044,2398,2430, 1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436,1883,2054,2402,2437,1970,2404
Nonanol ... 1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436, 1883,2054,2402,2437,2103
Nonan-3-ol ... 2138
Nonanone ... 1971,2405
trans-2-Nonenal ... 1896,2403
1-Nonene ... 1612
2-Nonen-1-ol ... 1492,1583,2320,2333
Nonyl acetate ... 2050,2434,2096,2099
Nonylamine ... 1776
Nonylphenol ... 83,299,341

Nootkatone ... 2096
Norbornanol ... 2120
Norbuprenorphine solution ... 692
Norbuprenorphine glucuronide solution ... 692
Norclomipramine ... 1164,210,1166,211
Norcotinine ... 245
Nordiazepam solution ... 833
Nordiazepam-d_5 solution ... 833
Nordihydroguaiaretic acid ... 276,337,1282,292
Nordoxepin ... 1164,210,1166,211,915,1165,1168
Norephedrine ... 992
Norepinephrine ... 144,180,254,955
Norethandrolone ... 195,197,198,200,201
Norfentanyl ... 464
Norfloxacin ... 1005,356,878
Norfluoxetine hydrochloride ... 1008,1010
Norflurazon ... 1506,2075,1507,2076
Norgestrel ... 181,2639
DL-Norleucine ... 2814,681
DL-Norleucine, FMOC derivatives ... 2785,600
Normeperidine ... 427
Normeperidine solution ... 481
Normetanephrine ... 254
Normorphine ... 124,868
Normorphine solution ... 491
(±)-Nornicotine solution ... 246
Noroxycodone ... 462
Norphenylephrine hydrochloride ... 2815,682,1092,2602,2974
Norsertraline ... 1196,252
Nortriptyline ... 1368,209,1164,210,1166,211,1167,212,1165,1168,1169,1170
DL-Norvaline ... 2816,683
DL-Norvaline (FMOC derivatives) ... 2786,601
(±)-Norverapamil hydrochloride ... 1222
Noscapine ... 30,407,853
Noscapine hydrochloride hydrate ... 490
NSAIDs ... 1094
Nuarimol ... 1447,1681,1828,1933
Nucleic acids ... 684

— O —

OCDD ... 1436,1575,1812,1912,1437,1576,1813,1913
OCDF ... 1436,1575,1812,1912,1437,1576,1813,1913
Ochratoxin A ... 331
(*Z*)-β-Ocimene ... 2050,2434
(*E*)-β-Ocimene ... 2050,2434,2096,2103,2120,2121,2131,2137,2138,2142,2166,2167
trans-β-Ocimene ... 2170
(Z)-β-Ocimene ... 2167,2096,2121,2131,2137,2138,2142,2166
2,2',3,3',4,4',5,5'-Octachlorobiphenyl ... 1441,1927,1442,1928
2,2′,3,3′,4,4′,5,5′-octachlorobiphenyl ... 1443,1929
2,2′,3,3′,4,5′,6,6′-Octachlorobiphenyl ... 1388,1411,1482,2028,1506,2075,1507,2076
2,2',3,3',5,5',6,6'-Octachlorobiphenyl ... 1441,1927,1442,1928
2,2′,3,3′,5,5′,6,6′-octachlorobiphenyl ... 1443,1929
Octachloronaphthalene ... 1571,1591,2325,2347
Octacosane ... 1486,1487,1526
Octadecadienoic acid ... 1784
Octadecane ... 1486,1487,1526,1637,2316,2317
Octadecane (C18) ... 1636
Octadecanoate (C18:0) ... 1636
Octadecanoic acid ... 1873,2031,2278
cis-11-Octadecenoic methyl ester ... 1867,2018,2274,1868,2019,2275,1869,2020,2276
3,5-octadien-2-one ... 2045,2350
Octanal ... 1490,1580,2318,2330,1491,1581,2319,2331,1971,2405,2050,2434,2096,2099,2103,2111,2184,2120,2166,2170
Octane ... 1431,1572,1486,1487,1592,1595,1601,1667,1602,1668,1610,1971,2405
n-Octane ... 1612
1,2-Octanediol ... 1646,2489
1,2-Octanediol (O-TFA derivatives) ... 1647,2490
Octanoic acid ... 1873,2031,2278,1970,2404,1971,2405,2060,2443
Octanol ... 2099,2103,2120,2136,2166
1-Octanol ... 2170,2311,2312,2313,2314,2316,2317
Octan-3-ol ... 2137,2138,2167
δ-Octanolactone ... 322
2-Octanone ... 2311,2312,2313,2314,2316,2317
Octan-3-one ... 2138
1-Octen-3-ol ... 2136
Octyl acetate ... 2050,2434,2096
3-Octyl acetate ... 2167
Octylamine ... 1776

Octyl gallate 276,337,1282,292
2-Octyl-4-isothiazolin-3-one 1419,406
Octylphenol 83
Oenothein B 1095,182
Oenothein B isomer 1095,182
Ofloxacin 1004,355
Oleate (C18:1) 1636
Oleic acid 351,357
Oleic acid methyl ester 1637,1818,1918,2250,1819,1919,2251,1837,1954,1840,1960,1845,1965,1846,1966,1847,1967
Oleic acid methyl ester (C18:1n9c) 1815,1915,2247,1817,1917,2249,1836,1945,1839,1959,1842,1962,1844,1964
Oleic acid methyl ester (C18:1n9c) at 4 wt % 1822,1922,2254
OLL 390,391,392,393
OLLn 390,391,392,393
OLO 324
Omeprazole 1372,247,248,249,250,1097,2975,1173
Omeprazole sulfone 1372,247,248,249,250
Omethoate 1350,1401,1860,1995,1447,1681,1828,1933,1887,2066
OOL 390,391,392,393
OOLn 390,391
OOP 390,391
OOPo 390
OPP 1890,2069
Ordram 1467,1990,2357,2407
DL-Ornithine monohydrochloride 2817,693
Oryzalin 1419,406
Ovalbumin 757,760,826
(0) Ovalbumin 1185,808
Ovalbumin (257-264) chicken 1129,187,825
Oxabetrinil 1889,2068
Oxadiazon 1448,1682,1829,1934,1467,1990,2357,2407,1887,2066
Oxadixyl 1889,2068
Oxalide 2111,2184
Oxamniquine 1098,2976
Oxamyl 1,295,294,302
Oxazepam 136,936,137,937,138,938,1190,232,1207,273,489,875,876,915,916,1099,2977,1100,2978
Oxazepam solution 833,1224
Oxazepam-d_5 solution 833
Oxazepam glucuronide solution 833,1224
Oxazepam-d_5 glucuronide 833
Oxo-isooctyl alcohols 1728
Oxpoconazole 1890,2069
Oxpoconazole fumarate; fumate portion 1890,2069
Oxprenolol 954,1101,2979
Oxprenolol hydrochloride 1102,2980,1103,2981
Oxycodone 427,428,462
Oxycodone solution 264,484,481,692
4,4′-Oxydianiline 1673
Oxyfluorfen 1887,2066
Oxygen 1639,1747,1749,1753,1754
Oxymetholone 195
Oxymorphone-D_3 solution 692
Oxymorphone-3-β-D-glucuronide solution 692
Oxyphenonium bromide 1134
Oxytetracycline 1157
Oxytocin 709,710,720,721,820

— P —

Paarlan 1467,1990,2357,2407
Paclitaxel 1104,1153,1154,1220
Paclobutrazole 1888,2067
Palmitelaidic acid 357
Palmitic acid 351,357
Palmitic acid methyl ester 1637,1818,1918,2250,1819,1919,2251,1837,1954,1840,1960,1846,1966,1847,1967
Palmitic acid methyl ester (C16:0) 1815,1915,2247,1817,1917,2249,1836,1945,1839,1959,1842,1962,1844,1964
Palmitic acid methyl ester (C16:0) at 6 wt % 1822,1922,2254
Palmitic acid methyl ester 1845,1965
Palmitoleic acid methyl ester 1818,1918,2250,1819,1919,2251,1837,1954,1840,1960
Palmitoleic acid methyl ester (C16:1) 1815,1915,2247, 1817,1917,2249,1836,1945,1839,1959,1844,1964
Palmitoleic acid methyl ester (C16:1) at 2 wt % 1822,1922,2254
Papaverine 30,407,853,1233,854
Papaverine hydrochloride 490
Parabens 285
Paracetamol 910,1145
Paraoxon-methyl 1507,2076
Paraquat 13,1356,1392,312
Parathion 1350,1401,1860,1995,1466,1740,1858,1989,2356,2384,2392,2406, 1471,1746,1861,1997,2361,2386,2393,2411,1544,1545,1550,1551,1585,2342,2004,2413

Parathion-methyl 1419,406,1350,1401,1860,1995,1449,1683,1830,1935,1544,1545,1885,2064
Paraxanthine 1362,1427,148,946
Paroxetine 239,811
Paroxetine hydrochloride hemihydrate 1216
PBDE 8 1450,1684
PBDE 17 1450,1684
PBDE 28 1450,1684
PBDE 66 1450,1684
PBDE 100 1450,1684
PBDE 138 1450,1684
PBDE 153 1450,1684
PBDE 154 1450,1684
PBDE 190 1450,1684
PBDE 209 1450,1684
pBR322 *Hae* III Digest 695
PCB congeners 1385,1474,1472,2362
1,2,3,7,8-PCDD 1436,1575,1812,1912,1437,1576,1813,1913
1,2,3,7,8-PCDF 1436,1575,1812,1912,1437,1576,1813,1913
2,3,4,7,8-PCDF 1436,1575,1812,1912,1437,1576,1813,1913
PCP 2291,2463
Pebulat 1507,2076
Pebulate 1506,2075
PEG 40, 000Da 696
PEG 26, 100Da 696
PEG 81, 400Da 696
PEG 50, 630Da 696
PEG 8, 730Da 696
70 kDa protein (undisclosed drug candidate) 777
Pelargonidin chloride 1320,1321
Pencanazole 1347,1394,1798,1894,1797,1893
Penconazole 1887,2066
Pendimethalin 1430,1641,1796,1892,1449,1683,1830,1935,1887,2066
DL-Penicillamine 1108,2982
Penicillin G 184,1009,1041
Penicillin V 1009,1041
2,2′,4,4′,5-Pentabromodiphenyl ether solution 1450,1684
Pentachlorobenzene 1550,1551,1571,1591,2325,2347
2,2′,3′,4,6-Pentachlorobiphenyl 1388,1411,1482,2028,1506,2075,1507,2076
2,2',4,6,6'-Pentachlorobiphenyl 1441,1927,1442,1928
2,2′,4,6,6′-pentachlorobiphenyl 1443,1929
3,3',4,4',5-Pentachlorobiphenyl 1441,1927,1442,1928
3,3′,4,4′,5-pentachlorobiphenyl 1443,1929
3,3′,4,4′,5-Pentachlorobiphenyl 1501
3,3′,4,5,5′-Pentachlorobiphenyl 1501
2,2',4,5,5'-Pentachlorobiphenyl (No. 101) 1402,1999
2,3,3',4,4'-Pentachlorobiphenyl (No. 105) 1402,1999
2,3,4,4',5-Pentachlorobiphenyl (No. 114) 1402,1999
2,3',4,4',5-Pentachlorobiphenyl (No. 118) 1402,1999
2',3,4,4',5-Pentachlorobiphenyl (No. 123) 1402,1999
3,3',4,4',5-Pentachlorobiphenyl (No. 126) 1402,1999
Pentachloroethane 1504,2073,1546,1547,1548,1549,1550,1551
Pentachloronitrobenzene 1351,1403,1862,2000,1509,1510,1511,1550,1551,1887,2066
Pentachlorophenol 1355,1389,2,298,90,1359,1386,1407,1475,1755,2005,1388,1411,1482,2028,1476,1756,2006,2363,2388,2414, 1477,1757,2007,2364,2389,2415,1506,2075,1507,2076,1524,1531,1552,1553,1554,1555,1556,1557,1558,1564,1571,1591,2325,2347
Pentachlorophenol (acylated) 2040,2426,2042,2428
Pentacosane 1637
Pentacosane (C25) 1636
Pentadecane 1431,1572,1602,1668,1637,2316,2317
Pentadecane (C15) 1636
Pentadecanoic acid methyl ester 1818,1918,2250,1819,1919,2251
Pentadecanoic acid methyl ester (C15:0) 1815,1915,2247,1817,1917,2249
Pentadecanoic acid methyl ester (C15:0) at 2 wt % 1822,1922,2254
cis-10-Pentadecenoic acid methyl ester 1818,1918,2250,1819,1919,2251
cis-10-Pentadecenoic acid methyl ester (C15:1) 1815,1915,2247,1817,1917,2249
cis-10-Pentadecenoic acid methyl ester (C15:1) at 2 wt % 1822,1922,2254
Pentafluorophenol 1531
Pentamethylbenzene 1621
2,2,4,6,6-Pentamethyl-3-heptene 1721
Pentanal 1490,1580,2318,2330,1491,1581,2319,2331,1969,1971,2405,2051,2435
Pentane 1528,1530,1592,1595,1601,1667,1602,1668,1610,1611,1612,1721,2210,2211,2212,2452,2213,2214,2453
n-Pentane 1665
n-Pentane 1723
1,2-Pentanediol 1646,2489
1,2-Pentanediol (O-TFA derivatives) 1647,2490
2,3-Pentanedione 2056,2439
Pentanol 1969
1-Pentanol 1644,1666
2-Pentanol 1644,1969

3-Pentanol ... 1644,1969
Pentedrone hydrochloride ... 471,478
1-Pentene ... 1612
cis-2-Pentene ... 1612,1721
trans-2-Pentene ... 1612,1721
3-Penten-2-one ... 2056,2439
2-Pentenyl hexanoate ... 1876,2035,2396,2423
Pentobarbital ... 414,925,416,927,417,929,418,930,928
Pentoxazone ... 1889,2068
Pentyl acetate ... 1676
Pentylamine ... 1776
Pentyl butanoate ... 1876,2035,2396,2423
Pentyl hexanoate ... 1876,2035,2396,2423,1971,2405
Pentylone hydrochloride ... 469
Peonidin 3-(6-acetylglucoside) ... 336
Peonidin chloride ... 1320,1321
Peonidin 3-(6-cumarylglucoside) ... 336
Peonidin 3-*O*-glucoside chloride ... 336
Peppermint oil ... 2136
Perilla alcohol ... 2050,2434,2170
Perilla aldehyde ... 2050,2434,2103,2120,2166
(−)-Perillaaldehyde ... 2170
(+)-Perillaaldehyde ... 2096
Perillyl acetate ... 2131
Peritone ... 2136
Permanent gases ... 1749
cis-Permethrin ... 1347,1394,1798,1894,1507,2076,1797,1893
cis/trans-Permethrin ... 1506,2075
trans-Permethrin ... 1347,1394,1798,1894,1507,2076,1797,1893
Permethrin-1 ... 1887,2066
Permethrin-2 ... 1887,2066
Permethrin isomer ... 1509,1510,1511
Permethrin (isomers) solution ... 1404,2001
Permetrin ... 1445,1679,1826,1931
Peroxidase ... 722
Perylene ... 1408,2010,1409,2011,1567,1587
Perylene-d_{12} ... 1388,1411,1482,2028,1408,2010,1409,2011,1434,1435,1483,2029,2365,2420, 1506,2075,1507,2076,1524,1550,1551,1552,1553,1554,1555,1556,1557,1564
Perylene-d_{12} ... 1567,1587
Perylene-d12 (I.S.) ... 1558
Pesticides ... 1515
Petunidin 3-(6-acetylglucoside) ... 336
Petunidin 3-(6-cumarylglucoside) ... 336
Petunidin 3-glucoside ... 336
α-Phellandrene ... 2047,2175,2351,2353,2050,2434,2096,2099,2103,2105,2106,2120,2121,2131,2142,2166,2170
β-Phellandrene ... 2121,2138,2167
Phenacetin ... 1372,247,248,249,250,870,1198,1550,1551
Phenanthrene ... 2375,310,311,1388,1411,1482,2028,1408,2010,1409,2011, 1451,1936,1480,2013,1481,2014,1483,2029,2365,2420,1506,2075,1507,2076,1517,1518,1524,1540,1541,1552,1553,1554,1555,1556,1557, 1558,1560,1561,1562,1563,1564,1567,1587,1795,1891
Phenanthrene-d_{10} ... 1388,1411,1482,2028,1483,2029,2365,2420,1506,2075, 1507,2076,1524,1550,1551,1552,1553,1554,1555,1556,1557,1564
Phenanthrene-d_{10} ... 1567,1587
Phenanthrene-d_{10} ... 1795,1891
Phenanthrene-d10 (I.S.) ... 1558
Phencyclidine ... 867
Phenethyl alcohol ... 2131
Phenmedipham ... 1890,2069
Phenobarbital ... 1200,269,485,1201,270,486,414,925,416,927,417,929,418,930,928,2288,2289
Phenol .. 48,90,1117,1283,1359,1386,1407,1475,1755,2005,1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415,1531,1552, 1553,1554,1555,1556,1557,1558,1564
Phenol-d_6 ... 1524,1550,1551,1552,1553,1554,1555,1556,1557,1558,1564
Phenols ... 1531
Phenothrin-1 ... 1890,2069
Phenothrin-2 ... 1890,2069
2-Phenoxyethanol ... 282,283,285,286
Phenoxymethylpenicillinic acid ... 184
1-Phenoxy-2-propanol ... 284,282,283,285,286,1465,2355
Phensuximide ... 1111,2983,1112,2984
Phentermine ... 2234,2285,2457,2460
Phenthoate ... 1350,1401,1860,1995,1885,2064
Phentoat ... 1448,1682,1829,1934
Phenylacetaldehyde ... 1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436, 1883,2054,2402,2437,1896,2403
Phenylacetic acid ... 91
D-Phenylalanine ... 2818,723
L-Phenylalanine ... 2818,723,1897,2304
DL-Phenylalanine ... 2819,724

DL-Phenylalanine (AQC derivatives) ... 2739,518
DL-Phenylalanine (t-BOC derivatives) ... 2753,535
DL-Phenylalanine (FMOC derivatives) ... 2787,602
Phenylbutazone ... 1217
4-Phenylcyclohexene ... 1491,1581,2319,2331
Phenylenediamine ... 1550
p-Phenylenediamine ... 1551
Phenylephrine ... 850,1113,2821
Phenylethanol ... 1759,2149,2541,2680
1-Phenylethanol ... 322
(*R*)-(+)-1-Phenylethanol ... 1760,2150,2542,2681
(±)-(1-Phenyl)ethanol ... 1759,2149,2541,2680
Phenylethyl Alcohol ... 1878,2044,2398,2430,1879,2046,2399,2431,1880,2048,2400,2432, 1881,2052,2349,2352,1882,2053,2401,2436,1883,2054,2402,2437
Phenylethyl alcohol ... 2056,2439,2111,2184
1-Phenylethylamine ... 1761,2543
R-(+)-1-Phenylethylamine (N-Chloroacetyl derivative) ... 1763,2545,1764,2546
S-(-)-1-Phenylethylamine (N-Chloroacetyl derivative) ... 1763,2545,1764,2546
R-(+)-1-Phenylethylamine (N-TFA derivative) ... 1762,2544,1765,2547,1766,2548,1767,2549,1768,2550
S-(-)-1-Phenylethylamine (N-TFA derivative) ... 1762,2544,1765,2547,1766,2548,1767,2549,1768,2550
Phenylethyl benzoate ... 2111,2184
N-(1-Phenylethyl)maleimide ... 2604,92
Phenylethyl phenylacetate ... 2111,2184
3-Phenyl furan ... 1878,2044,2398,2430,1879,2046,2399,2431, 1880,2048,2400,2432,1881,2052,2349,2352,1882,2053,2401,2436,1883,2054,2402,2437
Phenyl isocyanate ... 2338
DL-3-Phenyllactic acid ... 1285,2605,2707,3038,373,93
Phenyl methyl ketone ... 1492,1583,2320,2333
4-Phenyl-2-oxazolidinone ... 2606,94,2607,95
(±)-1-Phenylpentanol ... 1759,2149,2541,2680
1-Phenyl-2-propanol ... 1642,2487
2-Phenyl-2-propanol ... 1492,1583,2320,2333
2-Phenylpropionic acid ... 1286,3039,323,374
Phenylsuccinic anhydride ... 2608,96
Phloxine B ... 388
Phorate ... 1419,406,1350,1401,1860,1995,1447,1681,1828,1933,1466,1740,1858,1989,2356,2384,2392,2406,1470,1996,2360,2410, 1471,1746,1861,1997,2361,2386,2393,2411,1542,1543,1544,1545,1550,1551,1885,2064
Phosalone ... 1350,1401,1860,1995,1885,2064,2004,2413
Phosdrin ... 1350,1401,1860,1995
Phosfolan ... 1350,1401,1860,1995
Phosmet ... 1419,406,1350,1401,1860,1995,1445,1679,1826,1931,1542,1543,1544,1545,1887,2066
Phosphamidon ... 1350,1401,1860,1995
Phosphamidon ... 1350,1401,1860,1995
Phosphamidon ... 1542,1543,1544,1545,1885,2064
L-α-Phosphatidylcholine ... 399
L-α-Phosphatidylethanolamine from egg yolk ... 399
Phosphatidylinositol ammonium salt solution ... 399
L-α-Phosphatidyl-L-serine from *Glycine max* (soybean) ... 399
Phospholipase-A ... 801
Phospholipase B ... 801
Phosphorylase b from rabbit muscle ... 744
Phthalate esters ... 1478,1769,2009,2192
Phthalide ... 1886,2065
Phylloquinone (K1) ... 1255,1256,1253
Phytol ... 2111,2184
Picloram ... 1355,1389,2,298
2-Picoline ... 1550,1551
2-Picoline (2-Methyl pyridine) ... 1673
Pilocarpine ... 1114,1195
Pindolol ... 131,139,943,896,895,941,942,1115,2985,1116,2986
α-Pinene ... 2137
(−)-α-Pinene ... 1431,1572
α-Pinene ... 1431,1572,2047,2175,2351,2353,2050,2434,2095,2096
α-Pinene ... 2096,2099,2103,2105,2106,2112,2120,2121,2124,2131,2136,2138,2142,2166,2167,2170
β-Pinene ... 2050,2434,2056,2439,2096,2097,2099,2103
(−)-β-Pinene ... 2105
β-Pinene ... 2111,2184,2120,2121,2124,2131,2136,2137,2138,2142,2166,2167,2169
(−)-β-Pinene ... 2170
d-β-Pinene ... 1771,2152,2552,2683,1773,2154,2554,2685,1775,2156,2556,2687
l-β-Pinene ... 1771,2152,2552,2683,1773,2154,2554,2685,1775,2156,2556,2687
d-α-Pinene (R-(+)-α-Pinene) ... 1770,2151,2551,2682,1772,2153,2553,2684
l-α-Pinene (S-(-)-α-Pinene) ... 1770,2151,2551,2682,1772,2153,2553,2684
(−)-*trans*-Pinocarveol ... 2095
Pioglitazone hydrochloride ... 840
Pipecolinic acid ... 185,2640,2822,726
Pipenzolate bromide ... 1134
Piperacillin ... 1009,1041
trans-Piperitol ... 2131

Piperitone 2137,2138,2167
Piperonylbutoxide 1404,2001,1889,2068
Piperophos 1885,2064
Pirenzepine 1173
Pirimicarb 1446,1680,1827,1932
Pirimiphos-methyl 1448,1682,1829,1934,1885,2064
Pirmiphos-ethyl 1350,1401,1860,1995
Pirmiphos-methyl 1350,1401,1860,1995
Piroxicam 866,897,899,900,901,902
PLL 390,391,392,393
PLLn 392,393
PLO 390,391
PLP 390,391
POL 393
POLn 390,391
POL+SLL 392
Poly-DL-alanine 207
Poly-DL-alanine, 1,000-5,000 Da 757,758
Polybrominated diphenyl ether (PBDE) 1450,1684
Poly(ethylene glycol) 97
POO 393
PoOLn 390,391
PoOO 391
POP 390,391,392
PoPO 390
Posaconazole solution 831,832
PPL 392,393
Pravastatin 1148,194,851,964
Prazepam 2289
Prednisolone 169,199,1290,204,851,1120
Prednisone 199,203,1290,204,205,453
Pregabalin solution 836
Pretilachlor 1888,2067
Prifenox-2 1887,2066
Prilocaine 125,872
Procainamide hydrochloride 1121,1187
Procaine hydrochloride 490
Procyanidin B1 1287
Procyanidin B2 376,1287
Procyanidin B3 1287
Procymidone 1887,2066,2004,2413
Profenfos 1350,1401,1860,1995
Profenofos 1449,1683,1830,1935,1885,2064
Progesterone 851
Progesterone solution 1374,257
Proglumide sodium salt 1122,2987,1123,2988
Prohydrojasmon-1 1890,2069
Prohydrojasmon-2 1890,2069
D-Proline 2823,729
L-Proline 2823,729,1897,2304
DL-Proline 2824,730,2825,731,2844,830
DL-Proline (FMOC derivatives) 2788,603
D-Proline methyl ester (N-Acetyl derivative) 2016,2306,2704,2727
L-Proline methyl ester (N-Acetyl derivative) 2016,2306,2704,2727
Promazine 165,578
Promecarb 1449,1683,1830,1935
Promethazine 1124
Promethazine hydrochloride 1125,2989
Promethazine sulfoxide 1126,2990
Prometon 1466,1740,1858,1989,2356,2384,2392,2406,1489,1788,1877,2039,2369,2391,2397,2425,1506,2075,1507,2076
Prometryn 1466,1740,1858,1989,2356,2384,2392,2406,1489,1788,1877,2039,2369,2391,2397,2425,1506,2075,1507,2076,1888,2067
Pronamide 1506,2075,1550,1551
Propachlor 1391,305,316,1467,1990,2357,2407,1506,2075,1507,2076,1509,1510,1511,1888,2067
Propanal 1969
Propane 1592,1612,1628,1665,1723,1724,1751
Propane (215 ng on column) 1752
1,2-Propanediol 1383,1457,1646,2489,1705,1977,2187,2045,2350
1,3-Propanediol 1703,1975,2185,1704,1976,2186
1,2-Propanediol (O-TFA derivatives) 1647,2490
1-Propanethiol 1685
2-Propanethiol 1685
Propanil 313,1889,2068
Propanoic acid, 2-methyl-, 3-hydroxy-2,4,4-trimethylpentyl ester 1491,1581,2319,2331
Propanol 1490,1580,2318,2330
n-Propanol 1649,2380,1676
1-Propanol 1431,1572,1644,1666,1725,1726,1727,1895,1969, 2026,2027,2210,2211,2212,2452,2213,2214,2453,2225,2455,2292,2464,2293,2294
2-Propanol 1568,1588,2322,2344,1676,1726,1727,1895,2210,2211,2212,2452,2213,2214,2453,2294

2-Propanol, 0.0785% (I.S.) 1635,2378
Propantheline 119
Propantheline bromide 1134
Propaphos 1885,2064
Propargite-1 1889,2068
Propargite-2 1889,2068
Propazine 110,15,111,16,1357,1393,315,
1466,1740,1858,1989,2356,2384,2392,2406,1467,1990,2357,2407,1489,1788,1877,2039,2369,2391,2397,2425,1506,2075,1507,2076
Propetamphos 1350,1401,1860,1995,1449,1683,1830,1935
Propham 1,295,294,302,2374,303,1391,305,1444,1678,1825,1930
Propiconazole-1 1888,2067
Propiconazole-2 1888,2067
Propiconazole isomers 1430,1641,1796,1892
Propionaldehyde 21,2326
Propionaldehyde-2,4-dinitrophenylhydrazone 22,2334,23,2335
Propionaldehyde-2,4-DNPH 2337
Propionaldehyde (2,4-DNPH derivative) 2336,24
Propionic acid 1808,1908,2244,1809,1909,2245,1873,2031,2278,1969,1970,2404
Propionic acid, 0.7% 1993
Propionitrile 1504,2073
Propoxur 1,295,294,302,1347,1394,1798,1894,1797,1893
Propoxyphene 427,445
(+)-Propoxyphene solution 481
Propranolol 139,943,931,942,954
Propranolol hydrochloride solution 1228
DL-Propranolol hydrochloride 1128,2992
(±)-Propranolol hydrochloride 837,1127,2991,1342,3025
Propyl acetate 1676,2210,2211,2212,2452,2213,2214,2453
n-Propyl acetate 1675,1725,1726,1727,1780,1969,1971,2405
n-Propyl alcohol 1780
Propylamine 1776
N-Propylaniline 32
Propylbenzene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1505,2074,1548,1549,1610,1621
n-Propylbenzene 1504,2073,1546,1547,1612
iso-Propylbenzene 1610
α-Propyldopacetamide 1172,213
Propylene 1665,1724,1751
Propylene (215 ng on column 1752
Propylene glycol 1703,1975,2185,1704,1976,2186
R-(+)-Propylene oxide 1777,2557
S-(-)-Propylene oxide 1777,2557
Propylene (~95 %) 1723
Propyl gallate 276,337,1282,292,1898,2182
Propyl 4-hydroxybenzoate 1748,1998,2190,2223,2387,2412,2447,2454
Propyl isocyanate 2338
(±)-Propyl-γ-lactone 1729,2118,2529,2676
Propyl paraben 282,283,286
Propylparaben 289
Propyl paraben 290,291,1106
Propyltoluene 1621
Propyne 1665,1723,1724,1751
Propyne (215 ng on column 1752
Propyzamide 1430,1641,1796,1892,1446,1680,1827,1932,1507,2076,1887,2066
Prothiofos 1885,2064
Prothiophos 308
Prothoate 1448,1682,1829,1934
Protriptyline 1167,212,1169,1170
Protriptyline hydrochloride 1165
Prowl® 1467,1990,2357,2407
Pseudoephedrine 850,871,912,992,1132,2994,1145,1160,2234,2285,2457,2460
Pseudolimonene 2138
Pseudouridine 686
Psoralen 1262
Pulegone 2047,2175,2351,2353,2136,2137,2138
Pullulan MW 10,000 378,764
Pullulan MW 113,000 378,764
Pullulan MW 210,000 378,764
Pullulan MW 1,320 378,764
Pullulan MW 342 378,764
Pullulan MW 366,000 378,764
Pullulan MW 6,000 378,764
Pullulan MW 21,700 378,764
Pullulan MW 48,800 378,764
Pullulan MW 805,000 378,764
Pyraclofos 1885,2064
Pyraclostrobin 1419,406,1890,2069
Pyraflufen-ethyl 1890,2069
4-Pyran-4-one 2056,2439

Pyrazine 2056,2439
Pyrazophos 1886,2065
Pyrazoxyfen 1889,2068
Pyrene 2375,310,311,1388,1411,1482,2028,1408,2010,1409,2011,1451,1936,1480,2013,1481,2014,1483,2029,2365,2420,1506,2075, 1507,2076,1517,1518,1524,1540,1541,1552,1553,1554,1555,1556,1557,1558,1560,1561,1562,1563,1564,1567,1587
Pyrene-d_{10} 1484,2030,2366,2421
Pyrene-d_{10} 1567,1587
Pyributicarb 1887,2066
Pyridaben 1447,1681,1828,1933,1887,2066
Pyridafenthion 1885,2064
Pyridaphenthion 1350,1401,1860,1995,1430,1641,1796,1892
Pyridine 1550,1551,1552,1553,1554,1555,1556,1557,1558,2056,2439,2205,2206,2207,2450,2208,2209,2451
Pyridoglutethimide 1133,2995
Pyridoxine 122,1301,1302,1303,1304,1309
Pyridoxine hydrochloride 1299,1300,1306,1307,1308,1332,1333
Pyridoxine hydrochloride (Vitamin B_6) 334,335,332
1-(2-Pyridyl)piperazine 2340,27
Pyrifenox-1 1887,2066
Pyrimethamine 1199
Pyrimethanil 1890,2069
Pyrimidifen 1887,2066
Pyriminobac-E-methyl 1887,2066
Pyriminobac-Z-methyl 1887,2066
Pyrimiphos-ethyl 1446,1680,1827,1932
Pyriproxyfen 1889,2068
Pyrocatechol 152,44,1283
DL-Pyroglutamic acid 2826,766
Pyroquilon 1889,2068
Pyrovalerone hydrochloride solution 472
Pyrrole 2056,2439
Pyrrole-2-carboxaldehyde 2056,2439
α-Pyrrolidinovalerophenone hydrochloride solution 470

— Q —

Quercetin 352,1259
Quercetin-3-O-glycoside 1275
Quercitrin 1259,1266,1276
Quinalphos 1419,406,1350,1401,1860,1995,1885,2064
Quinapril 123,849
Quinapril hydrochloride 1211
Quinidine 30,67,256,407,853,846,1233,854,931,1135,1218
Quinine 30,407,853,1233,854
Quinoclamine 1886,2065
Quinoxyfen 1887,2066
Quizalofop-ethyl 1890,2069

— R —

Rabeprazole 1136,2996
Ranitidine 1173
Rapamycin 188
Rapeseed oil 1843,1963
RCS-4 (322.19 m/z) 1227,839
RCS-8 (376.246 m/z) 1227,839
RDX 296,465
Residual solvents 2224
Resmethrin 1888,2067
Resorcinol 152,44,1283
cis-Resveratrol 2024,2418,2025,2419
trans-Resveratrol 2024,2418,2025,2419
Retene 1408,2010,1409,2011
Retinol 1296
Retinol palmitate 1255,1256
Retinyl acetate 1255,1256,1295,1296,1327,1328
Retinyl palmitate 1328
RGAGGLGLGK-amide 771
Rhamnitol 2036,2037
Ribitol 386,2036,2037
(−)-Riboflavin 1219,274,1300,1302,1303,1304,1333
Riboflavin (B2) 1306,1307,1308
Riboflavin (Vitamin B_2) 334,335,332
Ribonuclease 754,755,756
Ribonuclease A 739,758,759,826
Ribonuclease A 829
Ribonuclease A from bovine pancreas 1129,187,704,732,733,734,735,736,737,738,743,1130,746,747,762,1184,805,825
(R) Ribonuclease A 1185,808
Ribonuclease A bovine pancreas (13.7 kDa) 493
Ribonucleosides 769
Ritalinic acid 1138,2997,446

Ritonavir 911
Robenidine 281,957
Rolitetracycline 1157
Ro-Neet 1467,1990,2357,2407
Ronnel 1350,1401,1860,1995,1542,1543,1544,1545,1571,1591,2325,2347
Rose bengal 388
cis-Rose oxide 2112
trans-Rose oxide 2112
Rosmarinic acid 1284
Roxarsone 4
Ruelene (cruformate) 100,2609
Rutin 1259,1275
Rutin hydrate 376,377
RVYIHPI 531,932

— S —

Sabinene 2050,2434,2056,2439,2096,2099,2103,2120,2121,2131,2136,2137,2138,2142,2161,2166,2167
(+)-Sabinene 2170
cis-Sabinene hydrate 2050,2434
cis-Sabinene hydrate 2096,2120,2137,2138,2167
trans-Sabinene hydrate 2103,2136,2138,2166
Safrole 1550
Salbutamol 1140,2999
Salicylic acid 37,1279,370,87,1281,372,89,279,910,922,978,979,1141,1236
Salinomycin 1174
Salinomycin SV 215
β-Santalene 2096
(Z)-β-Santelene 2050,2434
Saquinavir 911
Sarafloxacin 1004,355,1005,356,1013
Sauvagine 788
scFC 673
scFc 675,676,678
scFC 768
Scopolamine 119,885,886
Sebuthylazin 5
Secobarbital 414,925,416,927,417,929,418,930,928
Secodehydroabietic acid 1784
Selegiline (Deprenyl) 189,448,480,2897,975
α-Selinene 2103,2166
β-Selinene 2124
Se-Methyl-seleno-DL-cysteine 1068,2955
Semivolatiles 1506,2075
Sencor 1467,1990,2357,2407
Serine 819
D-Serine 2827,773
L-Serine 508,509,727,2827,773,1897,2304
DL-Serine 2828,774,2829,775
DL-Serine (AQC derivatives) 2740,519,2741,520
DL-Serine (FMOC derivatives) 2789,604
Serotonin 191,192
Sertraline 157,1196,252
Sertraline hydrochloride 1142,3000
β-Sesquiphellandrene 2096,2131,2142
cis-Sesquisabinene hydrate 2096
Sethoxydim 1419,406
Sibutramine hydrochloride monohydrate 1143,3001,1144,3002
Siduron 1,295,294,302,2374,303,1430,1641,1796,1892
Siduron A 314,375
Siduron B 314,375
Silafluofen 1889,2068
Sildenafil 995,996
Silibinin 1266
Siloxane 1574,2328
Silybin A 1276,1288
Silybin B 1266,1276,1288
Silychristin 1266,1276,1288
Silydianin 1266,1276,1288
Simazine 5,110,15,111,16,1391,305,1357,1393,315,316,1351,1403,1862,2000,1388,1411,1482,2028,1430,1641,1796,1892,1466,1740,1858,1989,2356,2384,2392,2406,1467,1990,2357,2407,1489,1788,1877,2039,2369,2391,2397,2425,1507,2076,1544,1545,1888,2067
Simeconazole 1886,2065
Simetryn 1466,1740,1858,1989,2356,2384,2392,2406,1489,1788,1877,2039,2369,2391,2397,2425,1506,2075,1507,2076,1889,2068
Simstatin 1148,194
Simvastatin 964
α-Sinensal 2103,2131,2166
β-Sinensal 2131
Sirolimus solution 1229

β-Sitosterol 1354,1412,1875,2034,1874,2033
SLL 391,393
SLO 324
Sodium glycochenodeoxycholate 234
Sodium gycochenodeoxycholate 237,238
Sodium taurochenodeoxycholate 234,237
Sodium taurodeoxycholate hydrate 234
Sodium taurodeoxycholate hydrate 237
Sodium taurolithocholate 234
Sodium tauroursodeoxycholate 234
SOL 390,391,393
SOLn 391
Solone 205
SOL+POO 392
Solvents 2224
SOO 390,391
SOP 390,391
Sorbate 338
Sorbic acid 1279,370,87,1281,372,89,280,334,332,335,346,347,910
Sorbic acid, 0.7% 1993
(±)-Sotalol hydrochloride 140,2633,2720,419,1146,3003,1147,3004
Soybean oil 1874,2033
Sparfloxacin 880,881
Spathulenol 2095,2096,2131,2142
Spearmint oil 2169
Spermidine 143
Spermine 143
Sphingomyelin 399
Spirodiclofen 1890,2069
Spiromesifen 1419,406
Stavudine 911
Stearic acid 351,357
Stearic acid methyl ester 1637,1818,1918,2250,1819,1919,2251,1837,1954,1840,1960,1845,1965,1846,1966,1847,1967
Stearic acid methyl ester (C18:0) 1815,1915,2247,1817,1917,2249,1836,1945,1839,1959,1842,1962,1844,1964
Stearic acid methyl ester (C18:0) at 4 wt % 1822,1922,2254
Steroids 195
Sterol ester triterpene alcohols 1884,2063
Sterols 1874,2033
Stigmasterol 1354,1412,1875,2034,1874,2033
trans-Stilbene oxide 101,2610
Stirofos 1506,2075
Strirophos 1542,1544,1545
Storophos 1543
Strigol 14,2485
Strychnine 30,407,853,1233,854
Styrene 1497,2061,1498,2062,2373,2444,1502,2071, 1503,2072,1504,2073,1505,2074,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1676,1725,1726,1727,1794, 1795,1891
Substance P 709,720
Sucrose 333,380,381,382,383,384,385,387
Sudan I 120,400
Sudan II 120,400
Sudan III 120,400
Sudan IV 120,400
Sudan Orange G 120,400
Sudan red G 120,400
Sudan Red 7B 120,400
Sufulfotep 1466,1740,1858,1989,2356,2384,2392,2406
Sulconazole nitrate salt 1149,3005
Sulfacetamide 1151,779,883,884
Sulfadiazine 1151,779,883,884
Sulfamerazine 1151,779,883,884,1150
Sulfamethazine 1150
Sulfamethizole 1151,779,883,884
Sulfanilamide 1151,779,883,884,1150
Sulfanitran 906
Sulfathiazole 1151,779,883,884,1150
Sulfolane 2205,2206,2207,2450,2208,2209,2451
Sulfonamide positional isomers 103
Sulfopropyl acrylate 29
Sulfopropyl methylacrylate 29
Sulfotep .. 1350,1401,1860,1995,1448,1682,1829,1934,1470,1996,2360,2410,1471,1746,1861,1997,2361,2386,2393,2411,1542,1543,1544, 1545,1550,1551,1890,2069
Sulfotepp 1551
Sulfur dioxide 1687,2382,2060,2443
Sulfur dioxide (5 ppm) 1783
Sulindac 899
Sulprofos 1887,2066

Sunset Yellow FCF 388
Superoxide dismutase 780
Superoxide Dismutase from bovine erythrocytes 738,744
Surfactants 83
Sutan 1467,1990,2357,2407
Swep 1,295,294,1889,2068
Synephrine 992
(±)-Synephrine 2830,781
Syringic acid 1280,371,88,1259

— T —

2,4,5-T 1355,1389,2,298,306,307
T26 1972
T28 1972
T30 1972
T32 1972
T34 1972
T36 1972
T38 1972
T40 1972
T42 1972
T44 1972,1973
T46 1972,1973
T48 1849,1974,1972,1973
T50 1849,1974,1972,1973
T52 1849,1974,1972,1973
T54 1849,1974,1972,1973
Tadalafil 995,996
Tamoxifen 1152,1223
Tartaric acid 68
L-Tartaric acid 1277,368,85,1278,369,86
DL-Tartaric acid 104,1291,2611,2708,3040,389
Tartrazine 388
Taurine 333,342,343,381
Taurochenodeoxycholic acid 238
Taurocholic acid 234,237,238
Taurocholic acid sodium salt hydrate 234
Taurodeoxycholic acid 238
Taurodeoxycholic acid-2,2,4,4-d_4 234
Taxifolin 1266,1276,1288
Taxols 1154
Taylor-Wharton Dewar accessories 705,743
2,3,7,8-TCDD 1437,1576,1813,1913
2,3,7,8-TCDF 1436,1575,1812,1912,1437,1576,1813,1913
Tebuconazole 1888,2067
Tebufenpyrad 1888,2067
Tebupirimifos 1890,2069
Tebuthiuron 1506,2075,1507,2076
Tecnazene 1887,2066
Tefluthrin 1887,2066
Temazepam 1190,232,1207,273,489,916
Temazepam solution 833,1224
Temazepam glucuronide lithium salt solution 1224
Temephos 1350,1401,1860,1995,1448,1682,1829,1934
Temsirolimus 1221,1229
Tenylchlor 1888,2067
TEPP 1542,1543
Terbacil 1467,1990,2357,2407,1506,2075,1507,2076,1888,2067
Terbucarb 1430,1641,1796,1892,1890,2069
Terbufos 1419,406,1350,1401,1860,1995,1466,1740,1858,1989,2356,2384,2392,2406,1471,1746,1861,1997,2361,2386,2393,2411, 1506,2075,1507,2076,1542,1543,1544,1545,1885,2064
Terbumeton 110,15,111,16,1447,1681,1828,1933
Terbumeton-desethyl 110,15,111,16
Terbutaline hemisulfate salt 1155,3006
Terbuthylazin-desethyl 110,15,111,16
Terbuthylazine 110,15,111,16
Terbutryn 110,15,111,16,1466,1740,1858,1989,2356,2384,2392,2406, 1489,1788,1877,2039,2369,2391,2397,2425,1506,2075,1507,2076,1888,2067
Terbutylazine 5
Terfenadine 1156,3007
o-Terphenyl 33
p-Terphenyl-d_{14} 1550,1551,1552,1556
Terphenyl-d_{14} 1524,1553,1554,1555,1557,1564
Terphenyl-d14 (surr.) 1558
o-Terphenyl (surr.) 1526
α-Terpinene 2050,2434,2056,2439,2096,2097,2099, 2103,2105,2111,2184,2120,2121,2131,2136,2137,2138,2142,2166,2167,2169,2170
β-Terpinene 2103,2106,2136

γ-Terpinene 2047,2175,2351,2353,2050,2434,2056,2439,2095,2096, 2099,2105,2120,2121,2124,2131,2137,2138,2142,2161,2166,2167,2170
Terpinen-1-ol 2105,2106
(-)-Terpinen-4-ol 1785,2172,2558,2688
Terpinen-4-ol 2050,2434,2099,2103,2106,2120,2121,2131,2136,2142,2161,2166,2167
(+)-Terpinen-4-ol 1785,2172,2558,2688,2095,2096,2105,2170
α-Terpineol 2050,2434,2095,2099,2103,2105,2106,2112,2120,2121,2124,2131,2136,2142,2166,2167,2170,2183,2446
β-Terpineol 2105
γ-Terpineol 2105
Terpinolene 2050,2434,2096,2099,2103,2105,2106,2120,2121,2124,2131,2136,2137,2138,2142,2166,2167,2170
α-Terpinyl acetate 2103,2131,2142,2166
(±)-α-Terpinyl acetate 2095
Testosterone 195,197,198,200,201,206
Testosterone solution 1374,257,258
1-Testosterone 206
Testosterone glucuronide 258
2,2′,4,4′-Tetrabromodiphenyl ether solution 1450,1684
2,3′,4′,6-Tetrabromodiphenyl ether solution 1450,1684
1,2,4,5-Tetrachlorobenzene 1550,1551
2,2′,4,4′-Tetrachlorobiphenyl 1388,1411,1482,2028,1506,2075,1507,2076
2,2',6,6'-Tetrachlorobiphenyl 1441,1927,1442,1928
2,2′,6,6′-tetrachlorobiphenyl 1443,1929
3,3',4,4'-Tetrachlorobiphenyl 1441,1927,1442,1928
3,3′,4,4′-tetrachlorobiphenyl 1443,1929
3,3′,4,4′-Tetrachlorobiphenyl 1501
3,3′,4,5-Tetrachlorobiphenyl 1501
3,3′,4,5′-Tetrachlorobiphenyl 1501
3,3′,5,5′-Tetrachlorobiphenyl 1501
3,4,4′,5-Tetrachlorobiphenyl 1501
2,2',5,5'-Tetrachlorobiphenyl (No. 52) 1402,1999
3,3',4,4'-Tetrachlorobiphenyl (No. 77) 1402,1999
3,4,4',5-Tetrachlorobiphenyl (No.81) 1402,1999
1,2,3,4-Tetrachlorodibenzo-*p*-dioxin 1452,1577,1831,1937,1453,1578,1832,1938
1,2,3,7-Tetrachlorodibenzo-*p*-dioxin 1452,1577,1831,1937,1453,1578,1832,1938
1,2,3,8-Tetrachlorodibenzo-*p*-dioxin 1452,1577,1831,1937,1453,1578,1832,1938
1,2,7,8-Tetrachlorodibenzo-*p*-dioxin 1452,1577,1831,1937,1453,1578,1832,1938
1,4,7,8-Tetrachlorodibenzo-*p*-dioxin 1452,1577,1831,1937,1453,1578,1832,1938
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin solution 1436,1575,1812,1912,1452,1577,1831,1937,1453,1578,1832,1938
Tetrachloroethane 1569,1589,2323,2345
1,1,1,2-Tetrachloroethane 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549,1674,1676
1,1,2,2-Tetrachloroethane 1494,2058,2371,2441, 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566, 1568,1588,2322,2344,1569,1589,2323,2345,1674,1676,1725,1726,1727
Tetrachloroethene 1546,1547,1674,1676,1726,1727
Tetrachloroethylene 1493,2057,2370,2440,1494,2058,2371,2441,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073, 1505,2074,1519,1520,1521,1522,1523,1548,1549,1565,1566,1568,1588,2322,2344,1725
2,3,4,5-Tetrachlorophenol 1531
2,3,4,6-Tetrachlorophenol 1359,1386,1407,1475,1755,2005,1476,1756,2006,2363,2388,2414, 1477,1757,2007,2364,2389,2415,1531,1550,1551
2,3,5,6-Tetrachlorophenol 1531,1550,1551
Tetrachloroterephthalic acid 1355,1389,2,298
Tetrachloro-*m*-xylene 1513,1516,1532,1533,1538,1539,1604
2,4,5,6-Tetrachloro-*m*-xylene 1512,1514,1534,1535
Tetrachlorvinphos 1507,2076,1885,2064
2,3,4,6-Tetrachorophenol (acylated) 2040,2426,2042,2428
Tetraconazole 1888,2067
Tetracontane 1486,1487
Tetracosane 1486,1487,1526,1637
Tetracosane (C24) 1636
Tetracyclines 1157
Tetradecanal 2103,2166
Tetradecane 1431,1572,1486,1487,1526,1596,1597,1602,1668,1637,2120
n-Tetradecane 2131
Tetradecane (C14) 1636
Tetradecanoic acid 1873,2031,2278
n-Tetradecanol 2131
(E)-2-Tetradecenal 2103
1-Tetradecene 2120
Tetradifon 1449,1683,1830,1935,1887,2066
Tetraethylene glycol 1705,1977,2187
Tetraethyl pyrophosphate (TEPP) 1544,1545
Δ^8-Tetrahydrocannabinol 459
Δ^9-Tetrahydrocannabinol 421,459
4,5,6,7-Tetrahydro-3,6-dimethylbenzofuran 2138
Tetrahydrofuran 1504,2073,1568,1588,2322,2344,1675,1676,1725,1726,1727,1780,2210,2211,2212,2452,2213,2214,2453
cis-(+/-)-3,3a,8,8a-Tetrahydro-2H-indeno[1,2-d]oxazol-2-one 2573,45
1,2,3,4-Tetrahydro-1-naphthylamine (N-acetyl derivatives) 1786,2559
1,2,3,4-Tetrahydro-1-naphthylamine (N-TFA derivatives) 1787,2560

3a,4,5,6-Tetrahydrosuccinimido[3,4-b]acenaphthen-10-one ... 107,2613
Tetrahydrothiophene ... 1685
Tetralin ... 2205,2206,2207,2450,2208,2209,2451
Tetramethylbenzene ... 1621,1624
1,2,3,4-Tetramethylbenzene ... 1612
1,2,3,5-Tetramethylbenzene ... 1610,1612
1,2,4,5-Tetramethylbenzene ... 1593,1594
Tetratetracontane ... 1486,1487
Tetryl ... 297,1455,1695,2297,2354,2383,2466
(±)-Thalidomide ... 1158,3008,1159,3009
THBP ... 276,337,1898,2182
THC ... 2290,2462,2291,2463
(−)-Δ^8-THC solution ... 487
(−)-Δ^9-THC solution ... 487
Theobromine ... 1362,1427,148,946,149,150,1275
Theophylline ... 1362,1427,148,946,149,150
Thiabendazole ... 1347,1394,1798,1894,1797,1893
Thiacloprid ... 1358,19
Thiamethoxam ... 1358,19,319,1890,2069
Thiamine ... 1300,1301,1302,1303,1304,1309
Thiamine hydrochloride ... 122,1306,1307,1308
Thiobencarb ... 1887,2066
Thiocyclam ... 1889,2068
2-Thiocytidine dihydrate ... 686
Thiodicarb ... 1430,1641,1796,1892
Thiometon ... 1350,1401,1860,1995,1887,2066
Thionazin ... 1466,1740,1858,1989,2356,2384,2392,2406,1470,1996,2360,2410, 1471,1746,1861,1997,2361,2386,2393,2411,1542,1543,1550,1551
Thionazin (Zinophos) ... 1544,1545
Thiophene ... 1685
Thioredoxin from *Escherichia coli* ... 744
Thioridazine ... 165,578,908,909
cis-Thiothixene ... 165,578
Threonine ... 509,819
D-Threonine ... 2832,784
L-Threonine ... 508,727,2832,784,1897,2304
DL-Threonine ... 2833,785
DL-Threonine (AQC derivatives) ... 2567,2742,521
DL-Threonine (FMOC derivatives) ... 2790,605
α-Thujene ... 2137,2050,2434,2095,2099,2103,2113,2120,2121,2124,2131,2138,2142,2161,2166,2167,2170
Thymidine ... 572,687,688,689
Thymine ... 684,765
Thymol ... 2103,2137,2138,2166
Thymol methyl ester ... 2103
Thymol methyl ether ... 2166
Thyroglobulin ... 207,742,748,749,750,751,752,757,758,786,826,829
Thyroglobulin from bovine thyroid ... 1129,187,734,735,736,737,825
(T) Thyroglobulin ... 1185,808
Thyroglobulin (640 kDa) ... 493
Thyroglobulin aggregate ... 786
Thyroglobulin dimer ... 493
Thyroglobulin trimer ... 493
D-Thyroxine ... 208,2834,787
L-Thyroxine ... 208,2834,787
L-Thyroxine (T_4) solution ... 822
Tillam ... 1467,1990,2357,2407
Timolol ... 941,954
Toclofos-methyl ... 1430,1641,1796,1892,1885,2064
Tocopherol ... 1295
α-Tocopherol ... 1295,1296
(±)-α-Tocopherol ... 1322,253,1251,1252,1255,1256,1253,1254,1298,1327,1328
(+)-γ-Tocopherol ... 1322,253,1251,1252,1295,1296,1298,1327,1328
δ-Tocopherol ... 1255,1256,1295,1296,1327,1328
DL-α-Tocopherol acetate ... 1327,1328
Tocopheryl acetate ... 1295,1296
α-Tocopheryl acetate ... 1295
Tokuthion ... 1542,1543,1544,1545
Tolban ... 1467,1990,2357,2407
Tolclofos-methyl ... 1419,406
Tolfenpyrad ... 1890,2069
o-Tolidine ... 1556,1558,1673
Tolmetin ... 899
Tolperisone hydrochloride ... 1161,3010
o-Tolualdehyde ... 21,2326
m-Tolualdehyde ... 21,2326
p-Tolualdehyde ... 21,2326
m-Tolualdehyde 2,4-dinitrophenylhydrazone ... 22,2334,23,2335
m-Tolualdehyde (2,4-DNPH derivative) ... 2336,24

Toluene 36,841,554,842,1117,1118,1493,2057,2370,2440,1494,2058,2371,2441, 1497,2061,1498,2062,2373,2444,1500,1586,2321,2343,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1527,1528,1529, 1530,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1592,1593,1594,1595,1596,1597,1600,1658,1601,1667, 1602,1668,1610,1611,1612,1613,1614,1615,1616,1617,1618,1621,1624,1625,1626,1640,1676,1725,1726,1727,1780,1794,2205,2206, 2207,2450,2208,2209,2451,2300,2467

Toluene-d_8 842,1519,1520,1546,1547,1548,1549,1565,1566

2,4-Toluene diisocyanate 2338

2,6-Toluene diisocyanate 2338

p-Toluic acid 1279,370,87,1281,372,89

o-Toluidine 108,109,1484,2030,2366,2421,1550,1551,1655,1672,1673

m-Toluidine 108,109

p-Toluidine 108,109,1673

Tolyfluanide 1445,1679,1826,1931

Tolylene-2,4-diisocyanate 2340,27

Tolylene-2,6-diisocyanate 2340,27

Tolylfluanid 1347,1394,1798,1894,1797,1893,1889,2068

Tolylfluanid metabolite 1889,2068

Tonalid 2111,2184

2,4,5-TP 1355,1389,2,298

Tramadol hydrochloride 1162,3011

Trazodone 914,918

Triademefon 1506,2075

Triadimefon 1507,2076,1887,2066,2004,2413

Triadimenol 1163,3012

Triadimenol-1 1887,2066

Triadimenol-2 1887,2066

Triallate 1886,2065

Triamcinolone acetonide 167

Triazophos 1885,2064

2,4,6-Tribromophenol 1476,1756,2006,2363,2388,2414,1524,1531,1550,1551,1552,1553,1554,1555,1556,1557,1564

2,4,6-tribromophenol (surr.) 1558

Tribufos 1886,2065

Tributyl phosphate 1545,1585,2342

Tributyl phosphate (surr.) 1544

Tricaprin 1638

Tricaprin (I.S.) 1631,1633,1634

Trichlamide 1889,2068

Trichlorfon 1419,406,1542,1543,1544,1545

2,4,5-Trichloroaniline 1655,1672

2,4,6-Trichloroanisole 1488,2038,2368,2424,2040,2426,2042,2428,2043,2429

1,2,3-Trichlorobenzene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549

1,2,4-Trichlorobenzene 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074, 1524,1546,1547,1548,1549,1552,1553,1554,1555,1556,1557,1558,1564,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345

2,4′,5-Trichlorobiphenyl 1388,1411,1482,2028,1506,2075,1507,2076

2,4,6-Trichlorobiphenyl 1441,1927,1442,1928

2,4,6-trichlorobiphenyl 1443,1929

3,3′,4-Trichlorobiphenyl 1501

3,3′,5-Trichlorobiphenyl 1501

3,4,4′-Trichlorobiphenyl 1441,1927,1442,1928

3,4,4′-trichlorobiphenyl 1443,1929

3,4,4′-Trichlorobiphenyl 1501

3,4,5-Trichlorobiphenyl 1501

3,4′,5-Trichlorobiphenyl 1501

2,3',6-Trichlorobiphenyl (No. 28) 1402,1999

1,1,1-Trichloroethane 1431,1572,1493,2057,2370,2440,1494,2058,2371,2441,1497,2061,1498,2062,2373,2444, 1500,1586,2321,2343,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566, 1568,1588,2322,2344,1569,1589,2323,2345,1674,1676,1725,1726,1727,2200,2201,2202,2448,2203,2204,2449,2224

1,1,2-Trichloroethane 1494,2058,2371,2441, 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566

1,1,2-trichloroethane 1568,1588,2322,2344

1,1,2-Trichloroethane 1569,1589,2323,2345

Trichloroethene 1504,2073

Trichloroethylene 1431,1572,1494,2058,2371,2441, 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1505,2074,1519,1520,1521,1522,1523,1546,1547,1548,1549,1565,1566, 1568,1588,2322,2344,1569,1589,2323,2345,1674,1676,1725,1726,1727,2205,2206,2207,2450,2208,2209,2451,2224,2226,2456

Trichlorofluoromethane 1494,2058,2371,2441,1496,1497,2061,1498,2062,2373,2444, 1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1697,1698

Trichloronate 1350,1401,1860,1995,1542,1543,1544,1545

2,3,4-Trichlorophenol 1531

2,3,5-Trichlorophenol 1531

2,4,5-Trichlorophenol 1476,1756,2006,2363,2388,2414,1477,1757,2007,2364,2389,2415, 1531,1552,1553,1554,1555,1556,1557,1558,1564,1571,1591,2325,2347

2,4,6-Trichlorophenol 90,1359,1386,1407,1475,1755,2005,1476,1756,2006,2363,2388,2414, 1477,1757,2007,2364,2389,2415,1524,1531,1552,1553,1554,1555,1556,1557,1558,1564

2,4,6-Trichlorophenol (acylated) 2040,2426,2042,2428

1,1,1-Trichloropropane 1500,1586,2321,2343

1,2,3-Trichloropropane 1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1546,1547,1548,1549

1,1,2-Trichloro-1,2,2-trifluoroethane 1565,1566,1568,1588,2322,2344

Trichlorphan 1350,1401,1860,1995

Tricosane 1637
Tricosanoate (C23) 1636
Tricosanoic acid methyl ester 1818,1918,2250,1819,1919,2251
Tricosanoic acid methyl ester (C23:0) 1815,1915,2247,1817,1917,2249
Tricosanoic acid methyl ester (C23:0) at 2 wt % 1822,1922,2254
Tri-o-cresyl phosphate (TOCP) 1544,1545
Tricyclazone 1507,2076
Tricyclene 2050,2434,2120,2131
Tricyclic antidepressants 1164,210
Tridecane 1431,1572,1596,1597,1600,1658,1602,1668,1621,1637
n-Tridecane 1613
n-Tridecane 1614,1615,1616,1617,1618,1625,1626
n-Tridecane 2311,2312
n-tridecane 2313,2314
Tridecane (C13) 1636
Tridecanoic acid methyl ester 1818,1918,2250,1819,1919,2251
Tridecanoic acid methyl ester (C13:0) 1815,1915,2247,1817,1917,2249
Tridecanoic acid methyl ester (C13:0) at 2 wt % 1822,1922,2254
2-(E)-Tridecenal 2166
Tridemorph 1888,2067
Triethylamine 1648,2379,1649,2380,1673
Triethylene glycol 1383,1457,1705,1977,2187
O,O,O-Triethyl phosphorothioate 1470,1996,2360,2410,1550,1551
Triethyl thiophosphate 1466,1740,1858,1989,2356,2384,2392,2406,1471,1746,1861,1997,2361,2386,2393,2411
Trifloxystrobin 1887,2066
Trifluoperazine 165,578
3-(Trifluoromethyl)aniline 1672
(±)-γ-(Trifluoromethyl)benzyl alcohol 1759,2149,2541,2680
Trifluorothymidine 168,587
α,α,α-Trifluorotoluene 1528,1530
Trifluralin 1351,1403,1862,2000,1446,1680,1827,1932,1467,1990,2357,2407,1506,2075,1507,2076,1887,2066
2′,4′,5′-Trihydroxybutyrophenone 1282,292
3,3′,5-Triiodo-L-thyronine sodium salt 174
3,3′,5-Triiodo-L-thyronine (T_3) solution 822
3,3′,5′-Triiodo-L-thyronine (Reverse T_3) solution 822
Triisobutylene 1721
Trimethylamine 2225,2455
2,4,5-Trimethylaniline 1673
1,2,3-Trimethylbenzene 1431,1572,1497,2061,1593,1594, 1595,1596,1597,1610,1611,1612,1621,2300,2467
1,2,4-Trimethylbenzene 1497,2061,1498,2062,2373,2444,1502,2071, 1503,2072,1504,2073,1505,2074,1527,1528,1529,1530,1546,1547,1548,1549,1568,1588,2322,2344,1569,1589,2323,2345,1593,1594,1595, 1596,1597,1610,1611,1613,1614,1615,1616,1617,1618,1621,1624,1625,1626,2300,2467
1,3,5-Trimethylbenzene 1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1569,1589,2323,2345
2,2,3-Trimethylbutane 1592
2,4,5-Trimethylheptane 1612
3,3,4-Trimethylheptane 1610,1612
3,3,5-Trimethylheptane 1612
2,2,5-Trimethylhexane 1592
2,3,5-Trimethylhexane 1592
2,3,5-Trimethylnaphthalene 1408,2010,1409,2011
2,2,3-Trimethylpentane 1592
2,2,4-Trimethylpentane 1431,1572,1528,1529,1530,1610,1611,1612
2,3,4-Trimethylpentane 1610,1611,1612
2,4,4-Trimethyl-1-pentene/triisobutylene 1721
(±)-1-(2,4,6-Trimethylphenyl)ethanol 1694,1835,1941,2296,2693
Trimethylpyrazine 1871,2022,2395,2417
2,3,5-Trimethylpyrazine 2056,2439
Trimipramine 1167,212,1169,1170,2279,2303,2459,2468
Trimipramine solution 1368,209
Trimipramine maleate salt 1165,1171,3013
1,3,5-Trinitrobenzene 296,465,1455,1695,2297,2354,2383,2466,1456,1696,2298,1550,1551
2,4,6-Trinitrophenylmethylnitramine (Tetryl) 1456,1696,2298
Trinitrotoluene 1455,1695,2297,2354,2383,2466
2,4,6-Trinitrotoluene 296,465,1456,1696,2298
Triolein 1633
Tripelennamine 860
Tripelennamine hydrochloride 1213
Triphenylene 33,1408,2010,1409,2011
Triphenyl phosphate 1506,2075,1507,2076,1544,1545
Triprolidine 858,859,860,891
tRNA hydrolysate 789
Troger's Base 113,2615,114,2616,115,2617
Trovafloxacin 880,881
α-Trypsin 790
β-Trypsin 790
Trypsin Inhibitor 740,760

Trypsin Inhibitor from *Glycine max* (soybean) 738,761
Trypsinogen 759
Tryptamine 810
Tryptophan 190,191,192,810
D-Tryptophan 2835,793
L-Tryptophan 2835,793,1897,2304
DL-Tryptophan 2836,794
Tryptophan derivative 1897,2304
DL-Tryptophan (FMOC derivatives) 2791,606
DL-Tryptophan methyl ester (3,5-DNP derivatives) 2772,577
Two PEG molecules attached to protein identified as peak 1 777
Tyramine 143,145,810
D-Tyrosine 2837,795
L-Tyrosine 2837,795,1897,2304
DL-Tyrosine 2840,798
DL-*o*-Tyrosine 2838,796
DL-*m*-Tyrosine 2839,797
DL-Tyrosine (t-BOC derivatives) 2754,536
Tyr-Tyr-Tyr 788

— U —

Uncosane 1637
Undecanal 1490,1580,2318,2330,2050,2434,2103,2120,2166,2170
Undecane 1431,1572,1484,2030,2366,2421,1486,1487,1595,1597,1600,1658,1601,1667,1602,1668,1637
n-Undecane 2311,2312
n-undecane 2313,2314
Undecane (C11) 1636
Undecanoic acid methyl ester 1818,1918,2250,1819,1919,2251
Undecanoic acid methyl ester (C11:0) 1815,1915,2247,1817,1917,2249
Undecanoic acid methyl ester (C11:0) at 2 wt % 1822,1922,2254
Undecanone 1971,2405
1-Undecene 1612
Uniconoazole P 1887,2066
UR-144 1226
Uracil 36,841,67,207,1200,269,485,1207,273,489,492,684,734,735,736,737,749,757,758,765
Uracil 786
Uracil 825,829,1117,1118,
(U) Uracil 1185,808
Uric acid 149
Uridine 687,688,689,769
Ursodeoxycholic acid 234

— V —

Vacor 313
Valacyclovir 133,913
Valencene 2050,2434
(+)-Valencene 2170
Valeraldehyde 21,2326
Valeraldehyde-2,4-dinitrophenylhydrazone 22,2334,23,2335
Valeraldehyde-2,4-DNPH 2337
Valeraldehyde (2,4-DNPH derivative) 2336,24
Valeric acid 1808,1908,2244,1809,1909,2245,1873,2031,2278,1970,2404
D-Valine 2841,799
L-Valine 2841,799,1897,2304
DL-Valine 2792,607,2842,800
DL-Valine (AQC derivatives) 2743,522
Val-Tyr-Val 708,719
Vanadium oxides tetroxide 825
Vanillic acid 1259
Vanillin 2111,2184
Vardenafil 995,996
[deamino-Cys^{1}, D-Arg^{8}]-Vasopressin acetate salt hydrate 820
Verapamil 896
Verapamil hydrochloride 256
Verapamil hydrochloride solution 1222
(±)-Verapamil 952,953
(R)-(+)-Verbenone 1789,2173,2227,2561,2689,2860,1790,2174,2228,2562,2690,2861
(S)-(-)-Verbenone 1789,2173,2227,2561,2689,2860,1790,2174,2228,2562,2690,2861
Vernam 1467,1990,2357,2407
Vernolat 1507,2076
Vernolate 1506,2075
Vigabatrin solution 836
Vinclozolin 1445,1679,1826,1931,1887,2066,2004,2413
Vinyl chloride 1494,2058,2371,2441,1496,1497,2061,
1498,2062,2373,2444,1502,2071,1503,2072,1504,2073,1505,2074,1519,1520,1522,1546,1547,1548,1549,1565,1566,1569,1589,2323,2345
2-Vinyl-5-methylfuran 2056,2439
Virginiamycin M_1 395,1109
Viridiflorol 2095,2136,2137,2138,2167

Vitamin E 1295
Vitamin D_2 solution 1322,253
Vitamin D_3 420
Vitamin D_3 solution 1322,253
Vitamin A (acetate) 1295,1296
Vitamin A alcohol 1296
Vitamin E acetate 1295,1296
Vitamin D3 solution 1254
Vitamin E acetate 1255,1256,1253
Vitamin K_1 275,835
Vitamin K1 2,3 epoxide 275,835
Vitamins, water soluble 1301
vitexin 4"-O-glucoside (PHY82682) 1305
vitexin (PHY89290) 1305
vitexin 2"-O-rhamnoside (PHY89291) 1305
Volatile fatty acids 1808,1908,2244
Volatiles 1503,2072
Voriconazole solution 831,832

— W —

Warfarin™ 1175,220,1176,221,1177,222,2641,3014,1178,223,2642,3015,1179,224,2643,3016,
1180,225,2644,3017,1183,227,2646,3020,1182,3019,1343,3026,1344,2652,3027,1345,2653,3028
Warfarin solution 1375,259,1377,265,2651,3022
(R)-(+)-Warfarin 1376,262,2650,3021
(S)-(−)-Warfarin 1376,262,2650,3021
Water 1622,1627,1699,1750,1751
R-(-)-Wieland-Miescher Ketone 1791,2563,1792,2564,1793,2565
S-(+)-Wieland-Miescher Ketone 1791,2563,1792,2564,1793,2565
Withaferin A 1235,1310,1311,1312,1313,1314
Withanolide A 1235,1310,1311,1312,1313,1314
Withanolide B 1235,1310,1311,1312,1313,1314
Withanone 1310,1311,1312,1313,1314
Withanoside V 1310
Withanoside IV 1235,1311,1312,1313,1314
Withanoside V 1235,1311,1312,1313,1314
Withanoside IV 1310

— X —

Xanthine 149
Xanthophyll 1239,344,1241,1242,1243,1317
Xanthosine 690
Xanthotoxin 1262
Xenon 1745
XLR-11 1226
o-Xylene 98,116,1493,2057,2370,2440,1497,2061,1498,2062,2373,2444,1502,2071,1503,2072,
1504,2073,1505,2074,1527,1528,1529,1530,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1592,1593,1594,
1595,1596,1597,1600,1658,1601,1667,1602,1668,1610,1611,1612,1621,1640,1676,1725,1726,1727,1780,1794,1795,1891,2205
o-Xylene 2206
o-Xylene 2207,2450
o-Xylene 2208
o-Xylene 2209,2451,2300,2467
m-Xylene 98,116,1493,2057,2370,2440,1497,2061,1498,2062,2373,2444,1502,2071,
1503,2072,1504,2073,1505,2074,1527,1528,1529,1530,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,1569,1589,2323,2345,1592,
1593,1594,1595,1596,1597,1600,1658,1601,1667,1602,1668,1611,1612,1621,1640,1676,1725,1726,1727,1780,1794,1795,1891,2205
m-Xylene 2206
m-Xylene 2207,2450
m-Xylene 2208
m-Xylene 2209,2451,2300,2467
p-Xylene 98,102,116,842,845,1493,2057,2370,2440,1497,2061,1498,2062,2373,2444,
1502,2071,1503,2072,1504,2073,1505,2074,1527,1528,1530,1546,1547,1548,1549,1565,1566,1568,1588,2322,2344,
1569,1589,2323,2345,1592,1593,1594,1595,1596,1597,1600,1658,1601,1667,1602,1668,1611,1612,1613,1614,1615,1616,1617,1618,1621,
1624,1625,1626,1640,1676,1725,1726,1727,1780,1794,1795,1891,2205
p-Xylene 2206
p-Xylene 2207,2450
p-Xylene 2208
p-Xylene 2209,2451,2300,2467
p-Xylene-d_{10} 842
Xylitol 386
Xylose 383,384,385,386
D-(+)-Xylose 379
7-(β-Xylosyl)paclitaxel 1154
Xylylcarb 1890,2069

— Y —

Yohimbine hydrochloride 1232,1316

— Z —

Zearalenone 331
Zeaxanthin 1239,344,1317
Zuclopenthixol 132,907,1189,231

Trademarks

The following trademarks and registered trademarks are accurate to the best of our knowledge at the time of publicaton. Trademarks noted as registered are registered in the United States and possibly other jurisdictions. For the latest information on a specific product, see our website, sigma-aldrich.com, or consult individual manufacturers.

Advanced Materials Technology, Inc. — Fused-Core®
American Society for Testing and Materials — ASTM®
AZYP, LLC — LARIHC™
Buchem B.V. — Tenax®
Chattem — Allegra®
Daicel Corp. — CHIRALPAK®
CSC Brands, LP — V8 Splash®
EKA Chemicals AB — Eternity™, Kromasil®
Eli Lilly and Co. — Prozac®
GE Healthcare — HiTrap®, Mono Q®, Mono S®, Sepharose®, Superdex®
Momentive Specialty Chemicals, Inc. — Epikote®
Sepax Technologies — Antibodix®, Proteomix®, SRT®, Zenix®
SGE Analytical Science Pty Ltd. — FocusLiner™
Sigma-Aldrich Co. LLC — apHera™, Ascentis®, Astec®, BIOShell™, Carbopack™, Carbotrap®, Carboxen®, CHIRALDEX®, CHIROBIOTIC®, CYCLOBOND®, DEX™, Discovery®, ENVI™, ENVI-Carb™, Equity®, Fluorcol™, HybridSPE®, Nukol™, Omegawax®, ORBO™, P-CAP™, Petrocol®, SAC™, SLB®, SP™, SPB®, Supel™, Supelclean™, SUPELCOGEL™, SUPELCOSIL™, SUPELCOWAX®, SupelMIP®, Supel-Q™, Thermogreen®, Titan™, VOCOL®
Sigma-Aldrich Laborchemikalien GmbH — CHROMASOLV®
Sotax Corporation — Zymark®
Tosoh Corporation — TSKgel®
Union Carbide — Carbowax®
U.S. Silica Company — Florisil®
Wisconsin Alumni Research Foundation — Warfarin™
Zymark Corp. — RapidTrace®

Enabling Science to
Improve the Quality of Life

Order/Customer Service • sigma-aldrich.com/order
Custom Products/Quotations • techserv@sial.com
Technical Service • sigma-aldrich.com/techservice
Development/Custom Manufacturing Inquiries SAFC® • sigma-aldrich.com/safc
Safety-related Information • sigma-aldrich.com/safetycenter

World Headquarters
3050 Spruce St.
St. Louis, MO 63103
(314) 771-5765
sigma-aldrich.com

©2014 Sigma-Aldrich Co. LLC. All rights reserved. SIGMA, SAFC, SIGMA-ALDRICH, ALDRICH, and SUPELCO are trademarks of Sigma-Aldrich Co. LLC, registered in the US and other countries. FLUKA is a trademark of Sigma-Aldrich GmbH, registered in the US and other countries. Solutions within is a trademark of Sigma-Aldrich Co. LLC. Sigma brand products are sold through Sigma-Aldrich, Inc. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see product information on the Sigma-Aldrich website at www.sigmaaldrich.com and/or on the reverse side of the invoice or packing slip.

11834-512981
1084

SIGMA-ALDRICH®