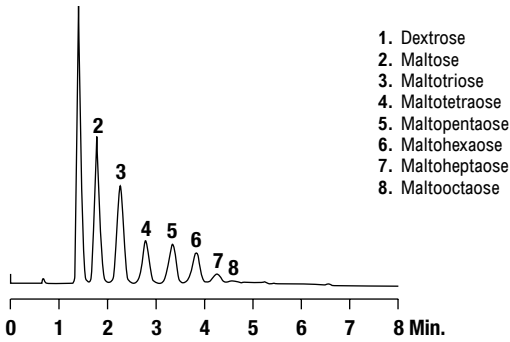


Carbohydrates

Corn Syrup Oligomers



1. Dextrose
2. Maltose
3. Maltotriose
4. Maltotetraose
5. Maltopentaose
6. Maltohexaose
7. Maltoheptaose
8. Maltooctaose

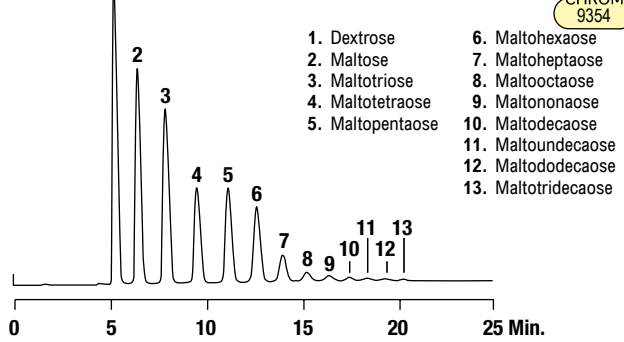
Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 53 x 7mm Rocket™ (Part No. 35104)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 4 |
| %B: | 32 | 50 |

Flow Rate: 2.0mL/min
Detector: ELSD

CHROM 9420

Corn Syrup Solids



1. Dextrose
2. Maltose
3. Maltotriose
4. Maltotetraose
5. Maltopentaose
6. Maltohexaose
7. Maltoheptaose
8. Maltooctaose
9. Maltononaose
10. Maltodecaose
11. Maltoundecaose
12. Maltododecaose
13. Maltotridecaose

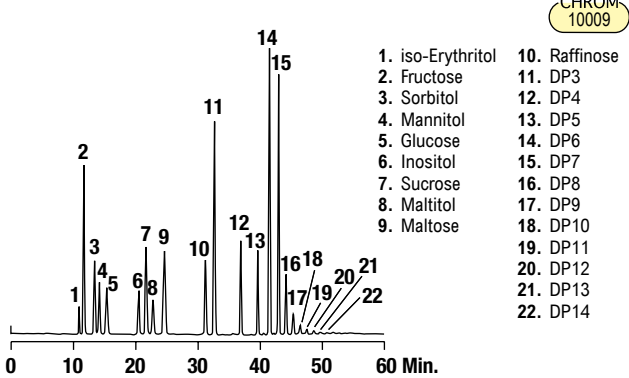
Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 15 |
| %B: | 35 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

CHROM 9354

Mono-, Di-, Tri- Saccharides



1. iso-Erythritol
2. Fructose
3. Sorbitol
4. Mannitol
5. Glucose
6. Inositol
7. Sucrose
8. Maltitol
9. Maltose
10. Raffinose
11. DP3
12. DP4
13. DP5
14. DP6
15. DP7
16. DP8
17. DP9
18. DP10
19. DP11
20. DP12
21. DP13
22. DP14

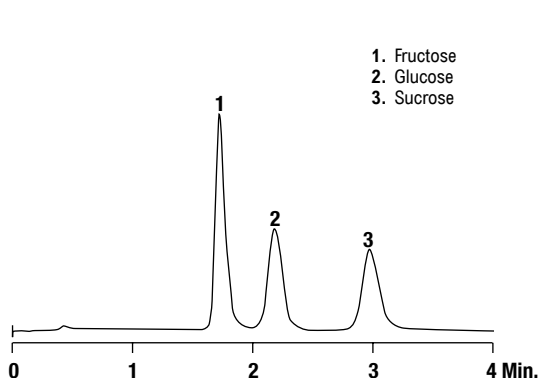
Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: 0.04% Ammonium Hydroxide in Water
Gradient:

| | | | | |
|-------|----|----|----|----|
| Time: | 0 | 25 | 40 | 60 |
| %B: | 17 | 27 | 45 | 55 |

Flow Rate: 1.0mL/min
Detector: ELSD

CHROM 10009

Sugars

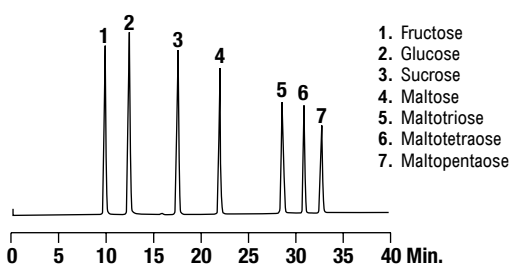


1. Fructose
2. Glucose
3. Sucrose

Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 53 x 7mm Rocket™ (Part No. 35104)
Mobile Phase: Acetonitrile:Water (75:25)
Flow Rate: 2.0mL/min
Column Temp: 30°C
Detector: ELSD

CHROM 10277

Beer Standards
Unmodified Mobile Phase



1. Fructose
2. Glucose
3. Sucrose
4. Maltose
5. Maltotriose
6. Maltotetraose
7. Maltopentaose

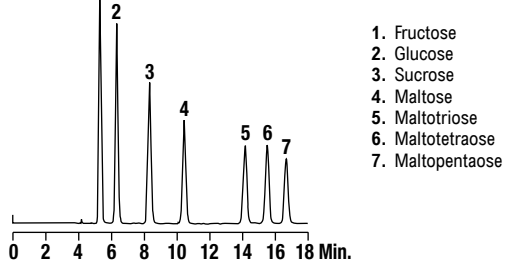
Column: Alltech® Prevail™ Carbohydrate ES, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 50 |
| %B: | 20 | 35 |

Flow Rate: 1.0mL/min
Detector: ELSD

CHROM 9350

Beer Standards
Modified Mobile Phase



1. Fructose
2. Glucose
3. Sucrose
4. Maltose
5. Maltotriose
6. Maltotetraose
7. Maltopentaose

Column: Alltech® Prevail™ Carbohydrate ES, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile:Acetone (75:25) B: Water
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 18 |
| %B: | 24 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

CHROM 9360



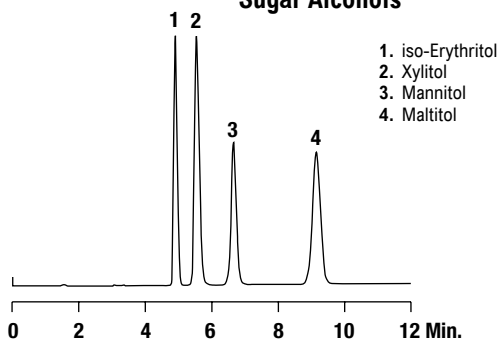
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 www.obrnutafaza.hr
 info@obrnutafaza.hr

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Carbohydrates

Sugar Alcohols

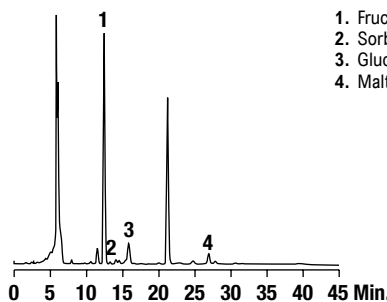


CHROM-9352

1. iso-Erythritol
2. Xylitol
3. Mannitol
4. Maltitol

Column: Alltech® Prevail™ Carbohydrate ES, 250 x 4.6mm (Part No. 35101)
Mobile Phase: Acetonitrile:Water (70:30)
Flow Rate: 1.0mL/min
Detector: ELSD

Wine Analysis - 2000 Sipaska Rosé



CHROM-9474

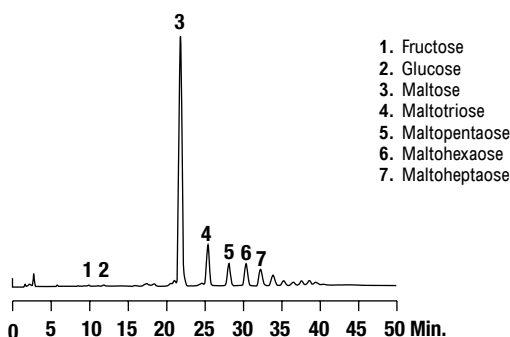
1. Fructose
2. Sorbitol
3. Glucose
4. Maltose

Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 60 |
| %B: | 17 | 35 |

Flow Rate: 1.0mL/min
Detector: ELSD

Imported Ale



CHROM-9351

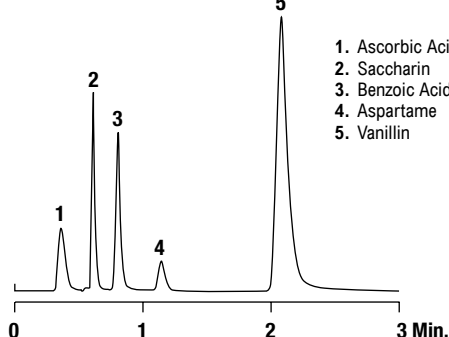
1. Fructose
2. Glucose
3. Maltose
4. Maltotriose
5. Maltopentaose
6. Maltohexaose
7. Maltoheptaose

Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 50 |
| %B: | 20 | 35 |

Flow Rate: 1.0mL/min
Detector: ELSD

Beverage Additives

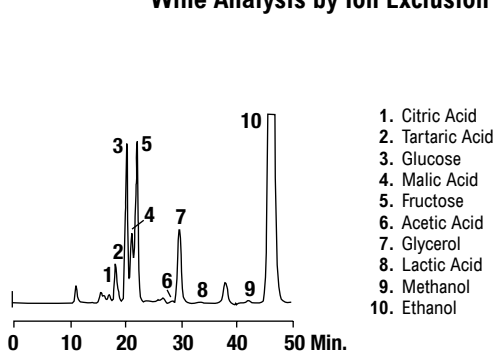


CHROM-9446

1. Ascorbic Acid
2. Saccharin
3. Benzoic Acid
4. Aspartame
5. Vanillin

Column: Alltech® Prevail™ C18, 3µm, 50 x 2.1mm (Part No. 43818)
Mobile Phase: Acetonitrile:0.05M Ammonium Acetate, pH5.4, (20:80)
Flow Rate: 0.3mL/min
Detector: UV at 230

Wine Analysis by Ion Exclusion

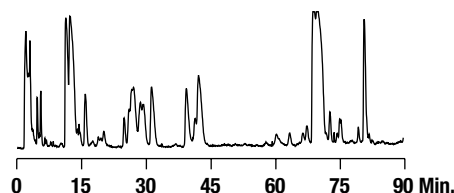


CHROM-5411

1. Citric Acid
2. Tartaric Acid
3. Glucose
4. Malic Acid
5. Fructose
6. Acetic Acid
7. Glycerol
8. Lactic Acid
9. Methanol
10. Ethanol

Column: Alltech® IOA-1000, 9mm, 300 x 7.8mm (Part No. 9646)
Mobile Phase: 0.005N Sulfuric Acid
Flow Rate: 0.3mL/min
Column Temp: 60°C
Detector: RI

Partial Digest: Complex Polysaccharide from Plant Cell Wall

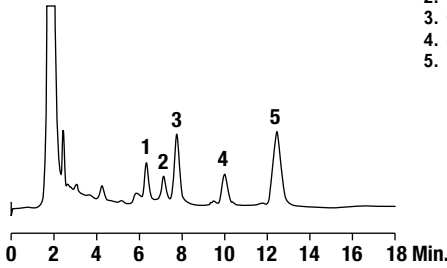


Column: Vydac® C18, 5µm, 250 x 4.6mm (Part No. 218TP54)
Gradient: 7 to 10% Methanol over 60 min., then to 25% Methanol at 90 min
Flow Rate: 1.0mL/min
Detector: ELSD

Conquistador® Tequila

CHROM 10585

- 1. Fructose
- 2. Mannitol
- 3. Glucose
- 4. Sucrose
- 5. Unknown

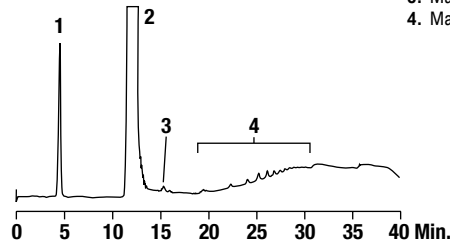


Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: Acetonitrile:Water (75:25)
Flow Rate: 1.0mL/min
Detector: ELSD

Splenda® Sweetener

CHROM 10531

- 1. Sucralose
- 2. Glucose
- 3. Maltose
- 4. Maltodextrins



Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

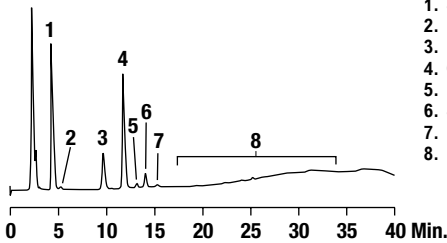
| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 5 | 10 | 15 | 25 |
| %B: | 20 | 20 | 30 | 30 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

Pepsi One® Cola

CHROM 10530

- 1. Sucralose
- 2. Unknown 1
- 3. Fructose
- 4. Glucose
- 5. Unknown 2
- 6. Sucrose
- 7. Maltose
- 8. Maltodextrins



Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

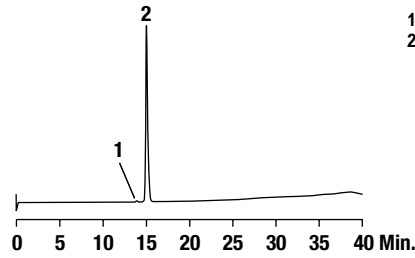
| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 5 | 10 | 15 | 25 |
| %B: | 20 | 20 | 30 | 30 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

Infant Formula

CHROM 10529

- 1. Sucrose
- 2. Lactose



Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 5 | 10 | 15 | 25 |
| %B: | 20 | 20 | 30 | 30 | 50 |

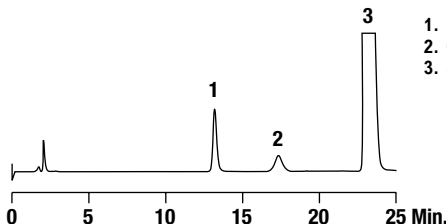
Flow Rate: 1.0mL/min
Detector: ELSD

Flavor Sample Solution

Chromatogram courtesy of Charles Stewart, Firmenich Inc.

CHROM 10579

- 1. Fructose
- 2. Glucose
- 3. Sucrose



Column: Alltech® Prevail™ Carbohydrate ES, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 30 |
| %B: | 20 | 29 |

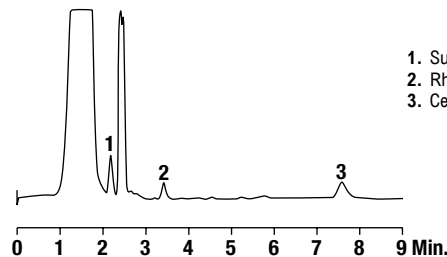
Flow Rate: 1.0mL/min
Detector: ELSD

Spiked Urine

Chromatogram courtesy of Rosemary Rose, Monash University, Dept. of Gastroenterology

CHROM 10584

- 1. Sucralose
- 2. Rhamnose
- 3. Cellobiose



Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 150 x 4.6mm (Part No. 35102)
Mobile Phase: Acetonitrile:Water (70:30)
Flow Rate: 1.0mL/min
Detector: ELSD

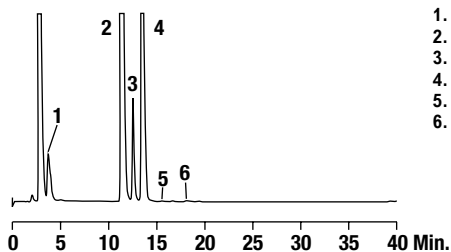
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Carbohydrates

Robitussin® Flu Syrup

CHROM-10557



1. Sucralose
2. Fructose
3. Sorbitol
4. Glucose
5. Sucrose
6. Maltose

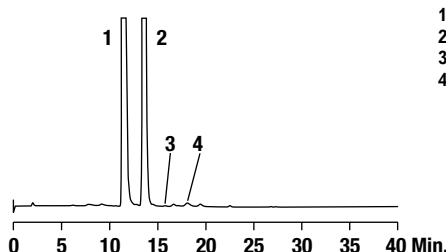
Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 5 | 10 | 15 | 25 |
| %B: | 15 | 15 | 25 | 25 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

Cough Syrup

CHROM-10556



1. Fructose
2. Glucose
3. Sucrose
4. Maltose

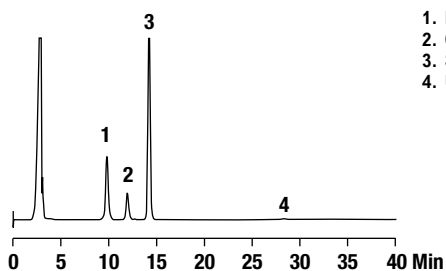
Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 5 | 10 | 15 | 25 |
| %B: | 20 | 20 | 30 | 30 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

Tobacco

CHROM-10526



1. Fructose
2. Glucose
3. Sucrose
4. Unknown

Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

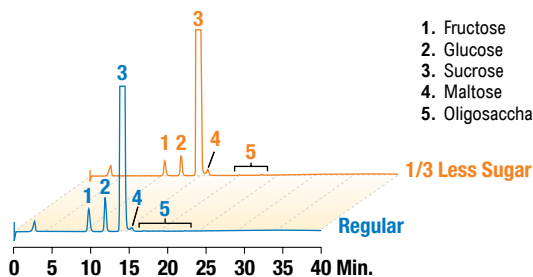
| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 5 | 10 | 15 | 25 |
| %B: | 20 | 20 | 30 | 30 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

Kellogg's Frosted Flakes® Cereal Regular vs. 1/3 less sugar

CHROM-10528

CHROM-10527



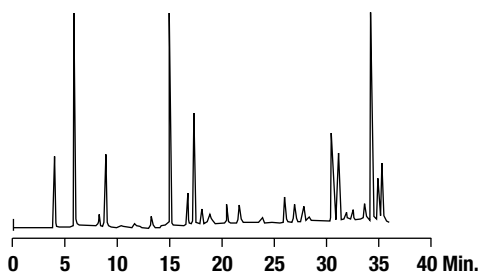
1. Fructose
2. Glucose
3. Sucrose
4. Maltose
5. Oligosaccharides

Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile B: Water
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 5 | 10 | 15 | 25 |
| %B: | 20 | 20 | 30 | 30 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

Rosenta Analysis



Column: Grom™ Sil 100 ODS-2 FE, 5µm, 250 x 4mm
Mobile Phase: A: Water B: Acetonitrile
Gradient:

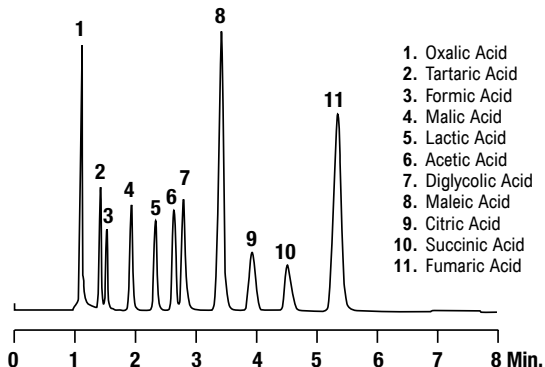
| | | |
|-------|----|-----|
| Time: | 0 | 30 |
| %B: | 25 | 100 |

Flow Rate: 0.8mL/min
Detector: UV at 254nm

Organic Acids

Organic Acid Mix

CHROM 9384

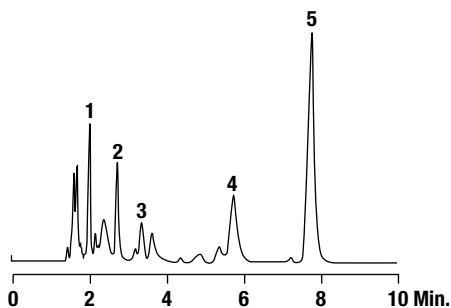


1. Oxalic Acid
2. Tartaric Acid
3. Formic Acid
4. Malic Acid
5. Lactic Acid
6. Acetic Acid
7. Diglycolic Acid
8. Maleic Acid
9. Citric Acid
10. Succinic Acid
11. Fumaric Acid

Column: Alltech® Prevail™ Organic Acid, 5µm, 150 x 4.6mm (Part No. 88640)
Mobile Phase: 0.025M KH₂PO₄, pH2.5
Flow Rate: 1.5mL/min
Detector: UV at 210nm

Rye Bread Extract

CHROM 9484

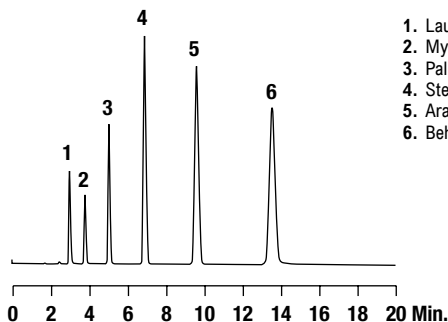


1. Tartaric Acid
2. Malic Acid
3. Lactic Acid
4. Citric Acid
5. Fumaric Acid

Column: Alltech® Prevail™ Organic Acid, 5µm, 150 x 4.6mm (Part No. 88640)
Mobile Phase: 0.025M KH₂PO₄, pH2.5
Flow Rate: 1.0mL/min
Detector: UV at 210nm

Underivatized Fatty Acids

CHROM 9539

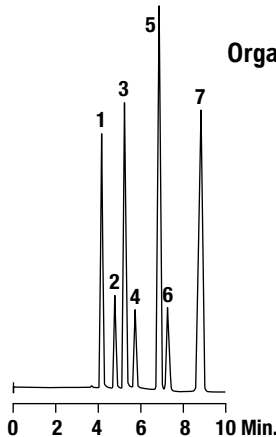


1. Lauric Acid
2. Myristic Acid
3. Palmitic Acid
4. Stearic Acid
5. Arachidic Acid
6. Behenic Acid

Column: Alltech® Prevail™ Organic Acid, 5µm, 150 x 4.6mm (Part No. 88640)
Mobile Phase: Acetonitrile:Methanol (75:25)
Flow Rate: 1.0mL/min
Detector: ELSD

Organic Acid Mix

CHROM 8244

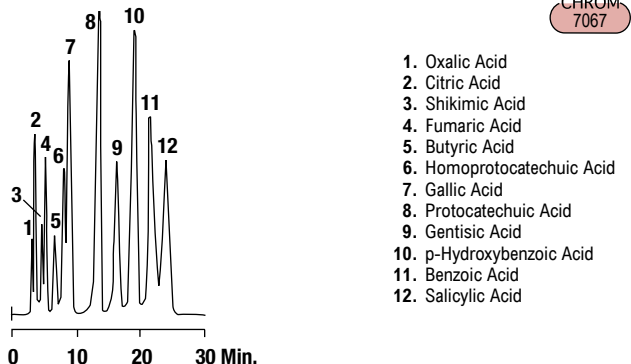


1. Tartaric Acid
2. Malic Acid
3. Lactic Acid
4. Diglycolic Acid
5. Maleic Acid
6. Succinic Acid
7. Fumaric Acid

Column: Alltech® Platinum™ EPS C8, 5µm, 150 x 4.6mm (Part No. 32420)
Mobile Phase: 0.025M KH₂PO₄, pH2.5:Methanol (97:3)
Flow Rate: 0.7mL/min
Detector: UV at 220nm

Short-Chain Aromatic Carboxylic Acids

CHROM 7067

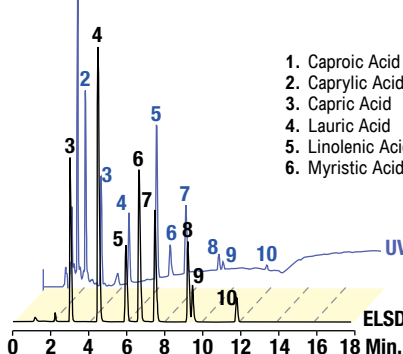


1. Oxalic Acid
2. Citric Acid
3. Shikimic Acid
4. Fumaric Acid
5. Butyric Acid
6. Homoprotocatechuic Acid
7. Gallic Acid
8. Protocatechuic Acid
9. Gentisic Acid
10. p-Hydroxybenzoic Acid
11. Benzoic Acid
12. Salicylic Acid

Column: Alltech® OA-2000, 6.5µm, 100 x 6.5mm (Part No. 9048)
Mobile Phase: 0.01N Sulfuric Acid
Column Temp: 45°C
Flow Rate: 0.8mL/min
Detector: UV at 228nm

Fatty Acids Using UV and ELSD in Tandem

CHROM 10430



1. Caproic Acid
2. Caprylic Acid
3. Capric Acid
4. Lauric Acid
5. Linolenic Acid
6. Myristic Acid
7. Linoleic Acid
8. Palmitic Acid
9. Oleic Acid
10. Stearic Acid

Column: Alltech® Alltima™ HP C18 HiLoad, 3µm, 150 x 4.6mm (Part No. 87686)
Mobile Phase: A: 0.1% Trifluoroacetic Acid in Water
 B: 0.1% Trifluoroacetic Acid in Acetonitrile
Gradient:

| | | | |
|-------|----|-----|-----|
| Time: | 0 | 10 | 20 |
| %B: | 80 | 100 | 100 |

Flow Rate: 1.0mL/min

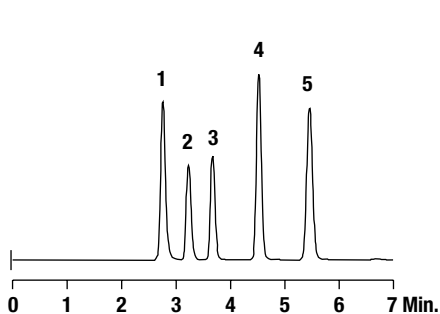
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Organic Acids

Organic Acids

CHROM-10705

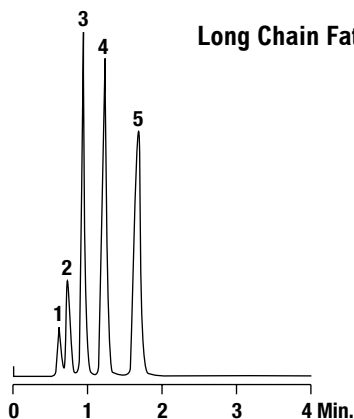


1. Tartaric Acid
2. Malic Acid
3. Lactic Acid
4. Maleic Acid
5. Fumaric Acid

Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: 0.025M KH₂PO₄, pH2.5: Methanol (97:3)
Flow Rate: 0.7mL/min
Detector: UV at 220

Long Chain Fatty Acids

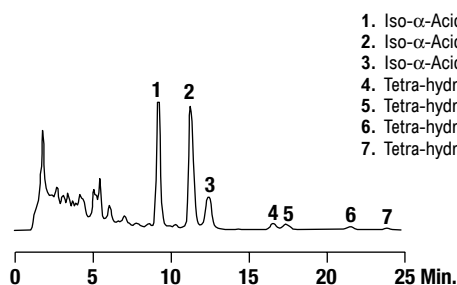
CHROM-9459



1. Capric Acid
2. Lauric Acid
3. Myristic Acid
4. Palmitic Acid
5. Stearic Acid

Column: Alltech® Prevail™ C18, 3µm, 53 x 7mm Rocket™ (Part No. 99279)
Mobile Phase: Acetonitrile: Methanol (75:25)
Flow Rate: 3.5mL/min
Detector: ELSD

Iso-α-Acids in Beer



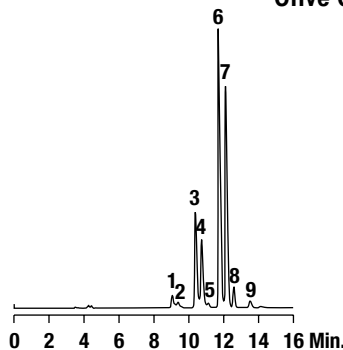
1. Iso-α-Acid
2. Iso-α-Acid 2
3. Iso-α-Acid 3
4. Tetra-hydro iso-α-Acid 1
5. Tetra-hydro iso-α-Acid 2
6. Tetra-hydro iso-α-Acid 3
7. Tetra-hydro iso-α-Acid 4

Column: Jones Genesis® C18, 4µm, 150 x 4.6mm + 10mm guard (Part No. FM15960E + FH1960-2)
Mobile Phase: Methanol: 0.1% Phosphoric Acid, 0.5mM EDTA (76:24)
Flow Rate: 1.0mL/min
Detector: UV at 260nm

Oils / Lipids

Olive Oil

CHROM-9515



1. LLO
2. LLP
3. OOL
4. POL
5. PPL
6. OOO
7. OOP
8. PPO
9. OOS

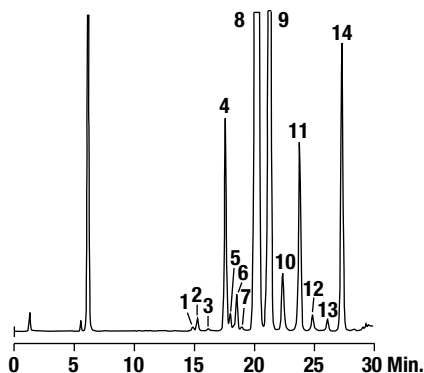
Column: Alltech® Alltima™ C18, 3µm, 150 x 4.6mm (Part No. 81387)
Mobile Phase: A: Dichloromethane B: Acetonitrile
Gradient:

| | | | | |
|-------|----|----|----|----|
| Time: | 0 | 10 | 18 | 20 |
| %B: | 70 | 55 | 70 | 70 |

Flow Rate: 1.5mL/min
Detector: ELSD

Olive Oil

CHROM-10561



1. LLO
2. OOLn
3. PLnO
4. LOO
5. PoOO
6. PLO
7. PoOP
8. OOO
9. POO+SOL
10. POP
11. SOO
12. POS+SLS
13. PPS
14. C17

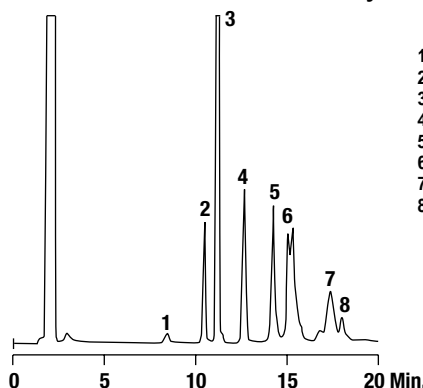
Column: Alltech® Alltima™ HP C18 Hi-Load, 3µm, 150 x 3.0mm (Part No. 87610)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

Flow Rate: 0.72mL/min
Detector: ELSD

Acid Whey

CHROM-10576



1. LACCR
2. PA
3. PE
4. PI
5. PS
6. PC
7. SM1
8. SM2

Column: Alltech® Prevail™ Silica, 3µm, 150 x 3.0mm (Part No. 99341)
Mobile Phase: A: Chloroform; B: Methanol; C: Triethylamine buffer pH3
Gradient:

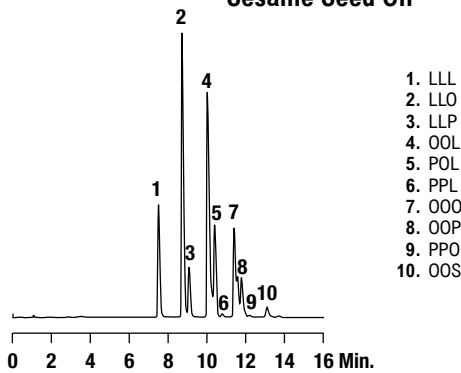
| | | | |
|-------|-----|----|-----|
| Time: | 0 | 16 | 17 |
| %B: | 12 | 60 | 12 |
| %C: | 0.5 | 12 | 0.5 |

Flow Rate: 0.5mL/min
Detector: ELSD

Oils / Lipids

Sesame Seed Oil

CHROM 9517



- 1. LLL
- 2. LLO
- 3. LLP
- 4. OOL
- 5. POL
- 6. PPL
- 7. OOO
- 8. OOP
- 9. PPO
- 10. OOS

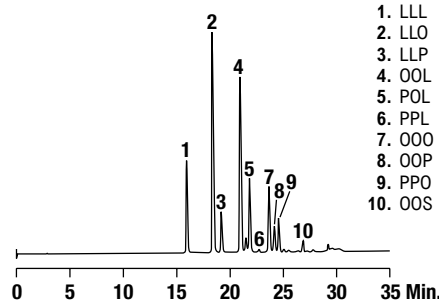
Column: Alltech® Alltima™ C18, 3µm, 150 x 4.6mm (Part No. 81387)
Mobile Phase: A: Dichloromethane B: Acetonitrile
Gradient:

| | | | | |
|-------|----|----|----|----|
| Time: | 0 | 10 | 18 | 20 |
| %B: | 70 | 55 | 70 | 70 |

Flow Rate: 1.5mL/min
Detector: ELSD

Sesame Seed Oil

CHROM 10581



- 1. LLL
- 2. LLO
- 3. LLP
- 4. OOL
- 5. POL
- 6. PPL
- 7. OOO
- 8. OOP
- 9. PPO
- 10. OOS

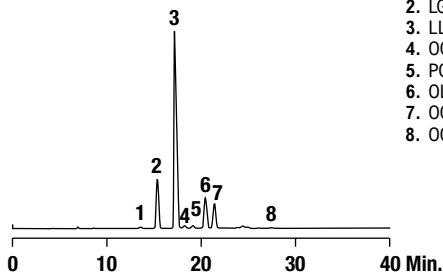
Column: Alltima™ HP C18 Hi-Load, 5µm, 250 x 4.6mm (Part No. 87698)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

Flow Rate: 1.0mL/min
Detector: ELSD

Evening Primrose Oil

CHROM 10047



- 1. LGG
- 2. LGL
- 3. LLL
- 4. OGL
- 5. PGL
- 6. OLL
- 7. OGO + PLL
- 8. OOO

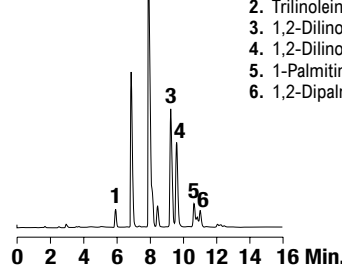
Column: Alltech® Alltima™ C18, 5µm, 250 x 4.6mm (Part No. 88056)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 40 |
| %B: | 30 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD

Walnut Oil

CHROM 9522



- 1. Trilaurin (LaLaLa)
- 2. Trilinolein (LLL)
- 3. 1,2-Dilinoleyl-3-oleyl-rac-glycerol (LLO)
- 4. 1,2-Dilinoleyl-3-palmitin-rac-glycerol (LLP)
- 5. 1-Palmitin-2-olein-3-Linolein rac-glycerol (POL)
- 6. 1,2-Dipalmytyl-3-linolein-rac glycerol (PPL)

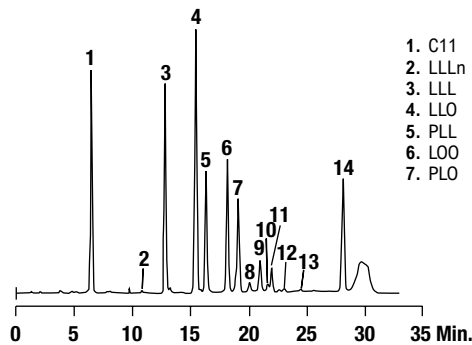
Column: Alltech® Alltima™ C18, 3µm, 150 x 4.6mm (Part No. 81387)
Mobile Phase: A: Dichloromethane B: Acetonitrile
Gradient:

| | | | | |
|-------|----|----|----|----|
| Time: | 0 | 10 | 18 | 20 |
| %B: | 70 | 55 | 70 | 70 |

Flow Rate: 1.5mL/min
Detector: ELSD

Corn Oil

CHROM 10566



- 1. C11
- 2. LLLn
- 3. LLL
- 4. LLO
- 5. PLL
- 6. LOO
- 7. PLO
- 8. PLP
- 9. OOO
- 10. SLO
- 11. POO
- 12. POP
- 13. SOO/PPP
- 14. C17

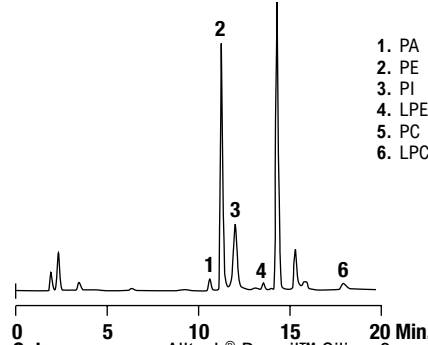
Column: Alltech® Alltima™ HP C18 Hi-Load, 3µm, 150 x 3.0mm (Part No. 87610)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

Flow Rate: 0.72mL/min
Detector: ELSD

Lecithin, 0.5mg/mL

CHROM 10562



- 1. PA
- 2. PE
- 3. PI
- 4. LPE
- 5. PC
- 6. LPC

Column: Alltech® Prevail™ Silica, 3µm, 150 x 3.0mm (Part No. 99341)
Mobile Phase: A: Chloroform B: Methanol C: Triethylamine buffer pH3
Gradient:

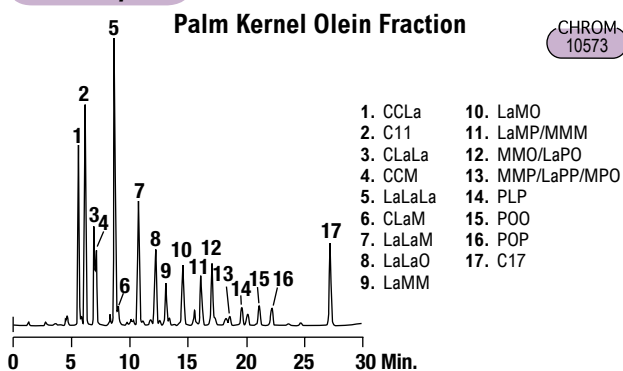
| | | | |
|-------|-----|----|-----|
| Time: | 0 | 16 | 17 |
| %B: | 12 | 60 | 12 |
| %C: | 0.5 | 12 | 0.5 |

Flow Rate: 0.5mL/min
Detector: ELSD

more applications

View our complete searchable chromatogram database at www.discoverysciences.com/chromdb/

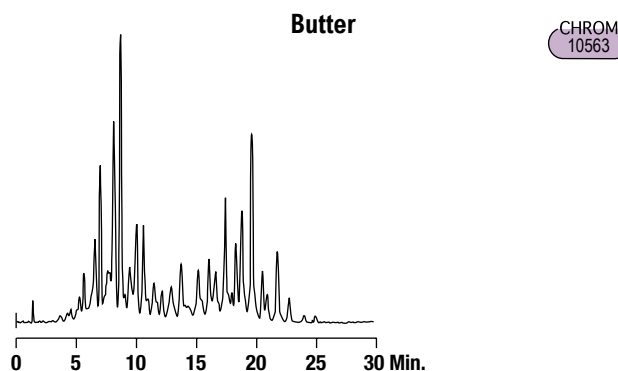
Oils / Lipids



Column: Alltech® Alltima™ HP C18 Hi-Load, 3µm, 150 x 3.0mm (Part No. 87610)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

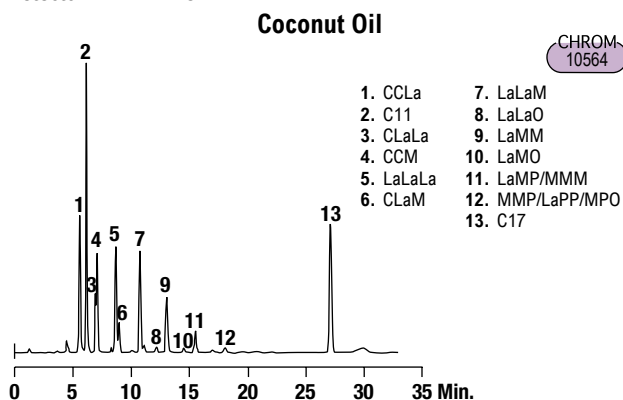
Flow Rate: 0.72mL/min
Detector: ELSD



Column: Alltech® Alltima™ HP C18 Hi-Load, 3µm, 150 x 3.0mm (Part No. 87610)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

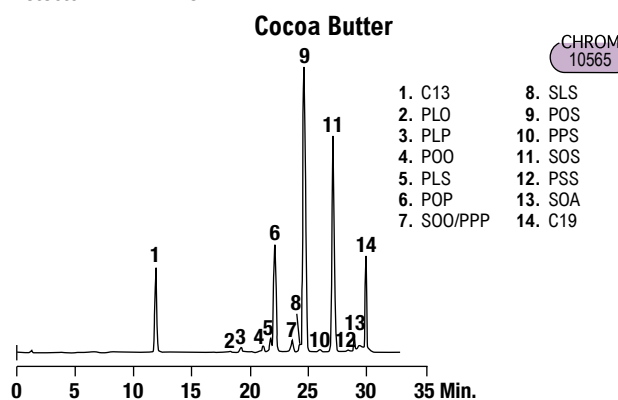
Flow Rate: 0.72mL/min
Detector: ELSD



Column: Alltech® Alltima™ HP C18 Hi-Load, 3µm, 150 x 3.0mm (Part No. 87610)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

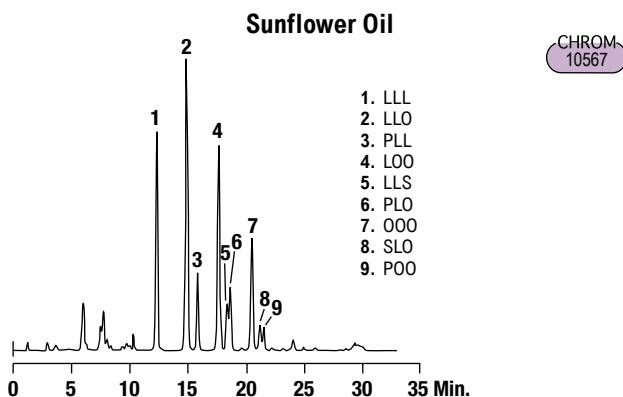
Flow Rate: 0.72mL/min
Detector: ELSD



Column: Alltech® Alltima™ HP C18 Hi-Load, 3µm, 150 x 3.0mm (Part No. 87610)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

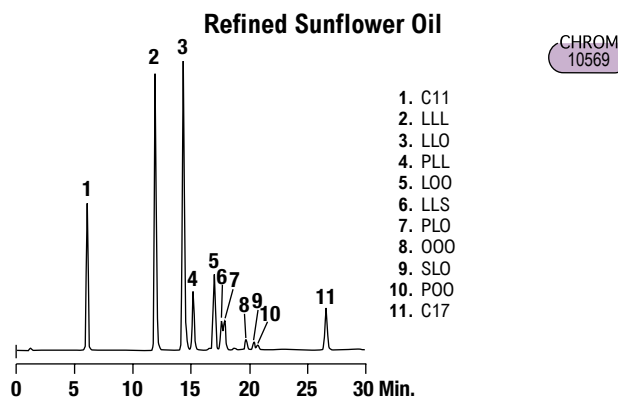
Flow Rate: 0.72mL/min
Detector: ELSD



Column: Alltech® Alltima™ HP C18 Hi-Load, 3µm, 150 x 3.0mm (Part No. 87610)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

Flow Rate: 0.72mL/min
Detector: ELSD

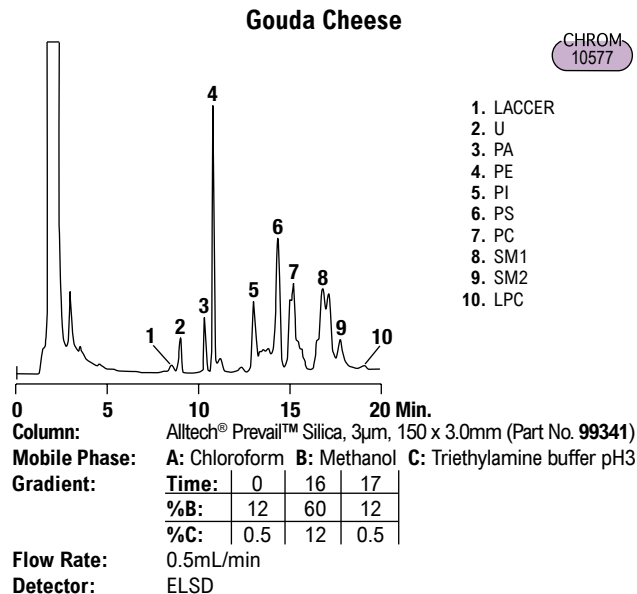
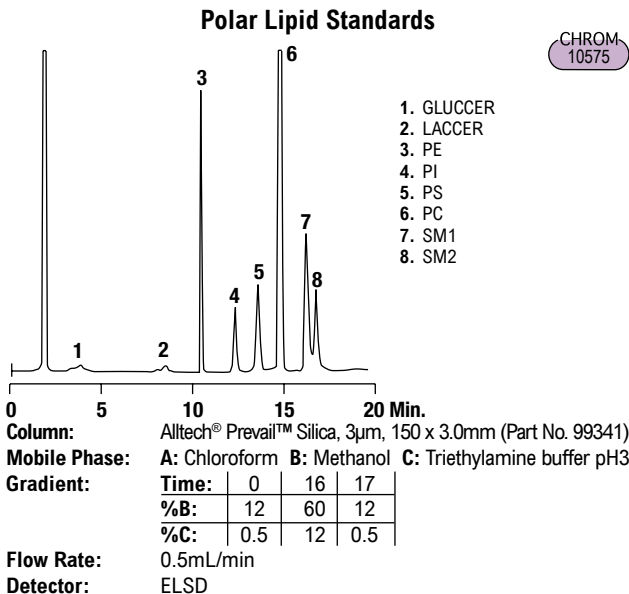
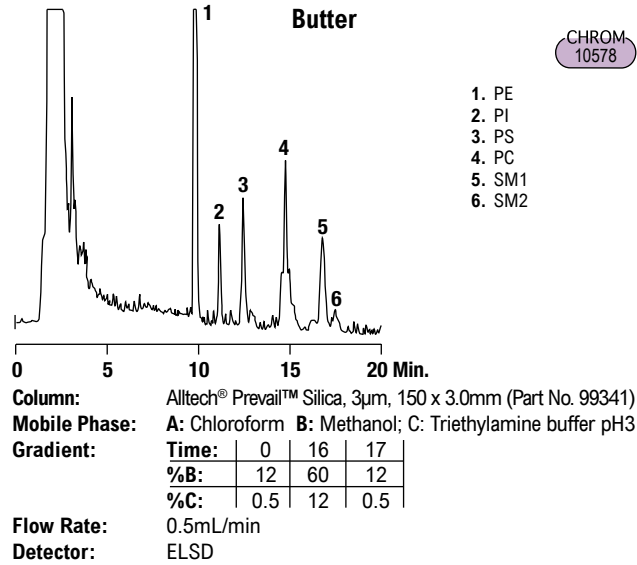
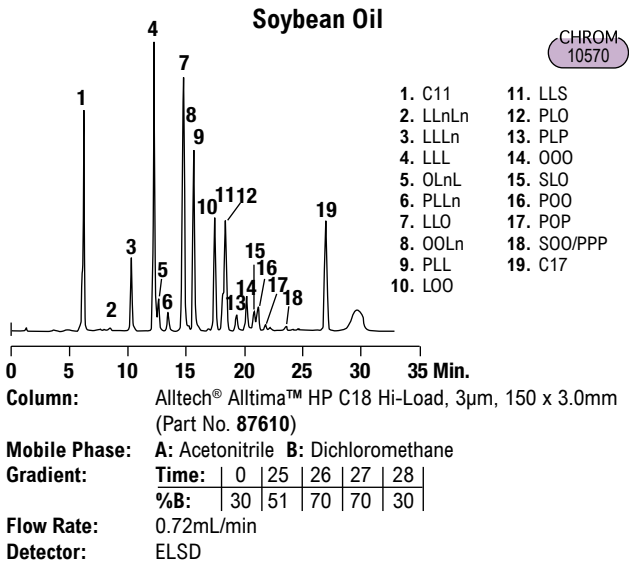
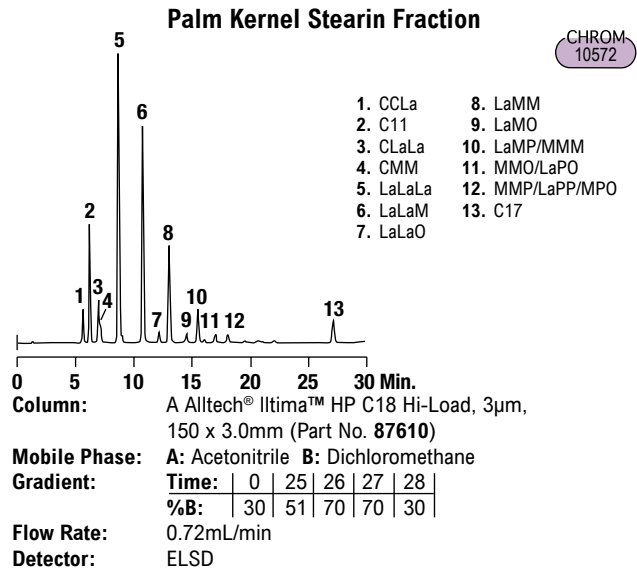
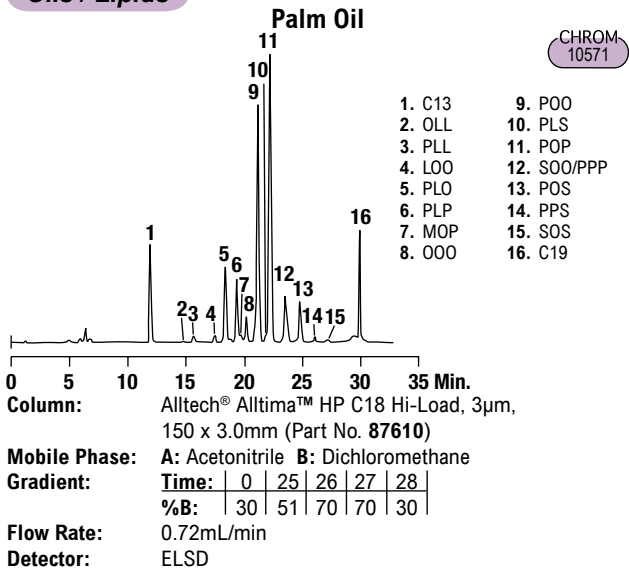


Column: Alltech® Alltima™ HP C18 Hi-Load, 3µm, 150 x 3.0mm (Part No. 87610)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

| | | | | | |
|-------|----|----|----|----|----|
| Time: | 0 | 25 | 26 | 27 | 28 |
| %B: | 30 | 51 | 70 | 70 | 30 |

Flow Rate: 0.72mL/min
Detector: ELSD

Oils / Lipids

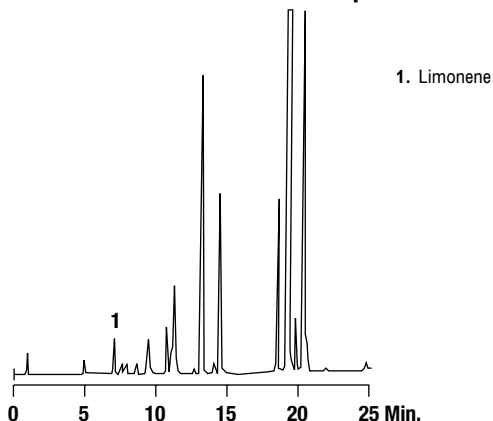


more applications

View our complete searchable chromatogram database at www.discoverysciences.com/chromdb/

Oils / Lipids

Limonene in Grapefruit Oil



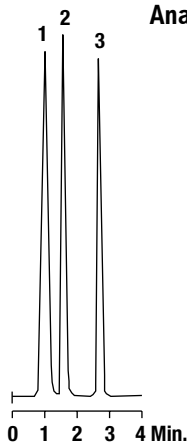
Column: Grom™ Sil 80 ODS-2 FE, 5µm, 250 x 4mm
Mobile Phase: A: Water:Methanol (50:50) B: Acetonitrile
Gradient:

| | | |
|-------|---|-----|
| Time: | 0 | 20 |
| %B: | 0 | 100 |

Flow Rate: 0.8mL/min
Detector: UV at 254nm

Additives

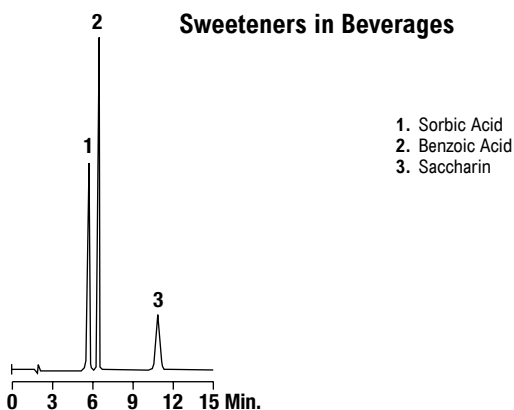
Analysis of Food Preservatives



1. *p*-Hydroxybenzoic Acid
2. Methylhydroxybenzoic Acid
3. Propylhydroxybenzoic Acid

Column: Grom™ Sil 120 ODS-3 CP, 5µm, 125 x 4mm (Part No. 5115479)
Mobile Phase: Water:Acetonitrile (50:50)
Flow Rate: 1.5mL/min
Detector: UV at 254nm

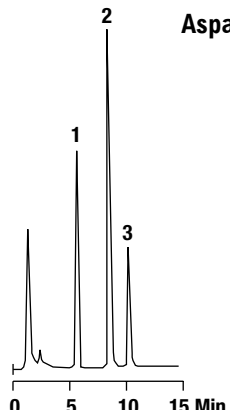
Sweeteners in Beverages



1. Sorbic Acid
2. Benzoic Acid
3. Saccharin

Column: Grom™ Sil 100 ODS-2 FE, 5µm, 125 x 3mm
Mobile Phase: 12mM Tetrabutylammonium Hydroxide, 0.2M Sodium Phosphate, pH3.6:Water:Acetonitrile (32:60:8)
Flow Rate: 0.4mL/min
Detector: UV at 230nm

Aspartame in Soft Drinks



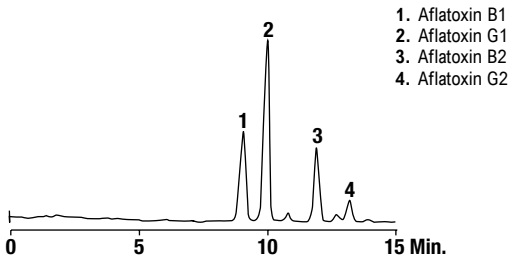
1. Benzoic Acid
2. Caffeine
3. Aspartame

Column: Grom™ Sil 120 Phenyl-1 FE, 5µm, 150 x 4mm
Mobile Phase: 50mM KH₂PO₄:Acetonitrile:Methanol (84:3:13)
Flow Rate: 1.1mL/min
Detector: UV at 214nm

Aflatoxins

Aflatoxins

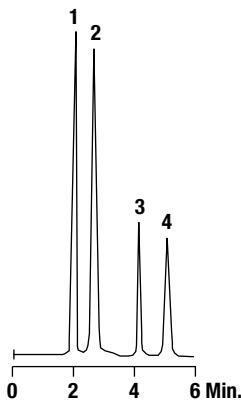
CHROM
10437



1. Aflatoxin B1
2. Aflatoxin G1
3. Aflatoxin B2
4. Aflatoxin G2

Column: Alltech® Alltima™ HP Silica, 5µm, 150 x 4.6mm (Part No. 87795)
Mobile Phase: Methylene Chloride:Methanol:Water (99.35:0.5:0.15)
Flow Rate: 0.8mL/min
Detector: ELSD

Aflatoxins

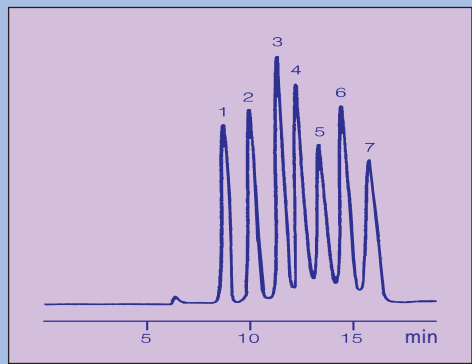


1. G_{2a}
2. B_{2a}
3. G₂
4. B₂

Column: Grom™ Sil 100 ODS-0 AB, 5µm, 125 x 4mm
Mobile Phase: Acetic Acid:Methanol:Water (2:2:8)
Flow Rate: 0.6mL/min
Detector: Fluorescence at 360nm (exc.), 425nm (em.)

V. Analysis of beverages and foods

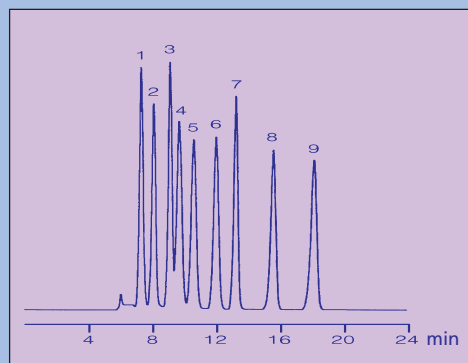
10 082 Analysis of Sugars in Beverages



- 1) Raffinose
- 2) Maltose
- 3) Glucose
- 4) Xylose
- 5) Galactose
- 6) Arabinose
- 7) Mannose

Column phase: GROM-RESIN ZP, 10 μ m
 Column size: 300 x 8 mm
 Eluent: water
 Flow rate: 0.7 ml/min
 Pressure: 1 MPa
 Temperature: 70°C
 Detection: RI
 Injection: 15 μ l

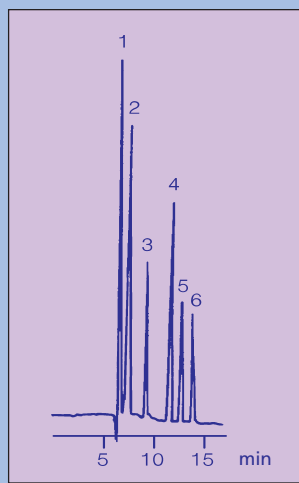
10 083 Analysis of Oligosaccharides and Alcohols in Food



- 1) Maltotriose
- 2) Maltose
- 3) Lactulose
- 4) Glucose
- 5) Xylose
- 6) Arabinose
- 7) Adonitol
- 8) Arabitol
- 9) Xylitol

Column phase: GROM-RESIN ZC, 10 μ m
 Column size: 300 x 8 mm
 Eluent: Ca₂EDTA (50 mg/L H₂O)
 Flow rate: 0.7 ml/min
 Pressure: 1 MPa
 Temperature: 85°C
 Detection: RI
 Injection: 15 μ l

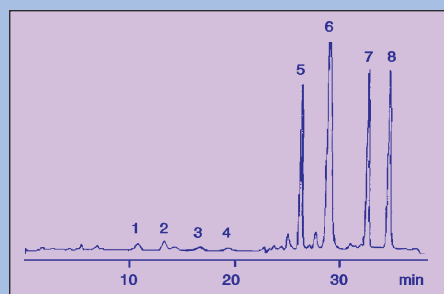
10 084 HPLC Determination of Organic Acids



- 1) Oxalic acid
- 2) Maleic acid
- 3) Malonic acid
- 4) Succinic acid
- 5) Formic acid
- 6) Acetic acid

Column phase: GROM-RESIN AC, 10 μ m
 Column size: 300 x 8 mm
 Eluent: 0.003 N sulfuric acid
 Flow rate: 0.7 ml/min
 Pressure: 7 MPa
 Temperature: RT
 Detection: conductivity
 Injection: 20 μ l

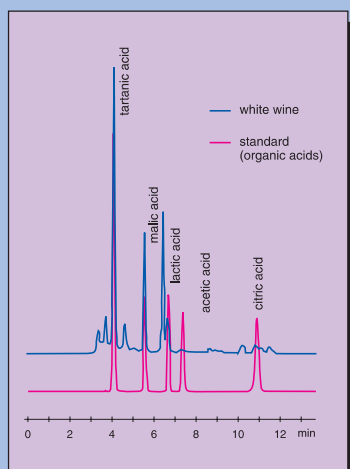
10 100 Determination of the Hop Bitter Acids in Beer by HPLC



- 1) Co-Isohumulon
- 2) N-Isohumulon
- 3) Ad-Isohumulon
- 4) Xanthohumulon
- 5) Co-Humulon
- 6) N/Ad-Humulon
- 7) Co-Lupulon
- 8) N/Ad-Lupulon

Column phase: GROM-Beer-Bitter (tailor-made)
 Column size: 125 x 4 mm
 Eluent A: MeOH
 B: 647 ml MeOH + 349 ml H₂O + 4 ml H₃PO₄
 Gradient: 100% B (0-19.5 min), 65% B (19.5-29 min), 50% B (29-36 min), 100% B (36-40 min)
 Flow rate: 1.0 ml/min
 Pressure: 9 MPa
 Temperature: 35°C
 Detection (UV): 270 / 314 nm
 Injection: 10 μ l beer

10 137 Analysis of Organic Acids in White Wine

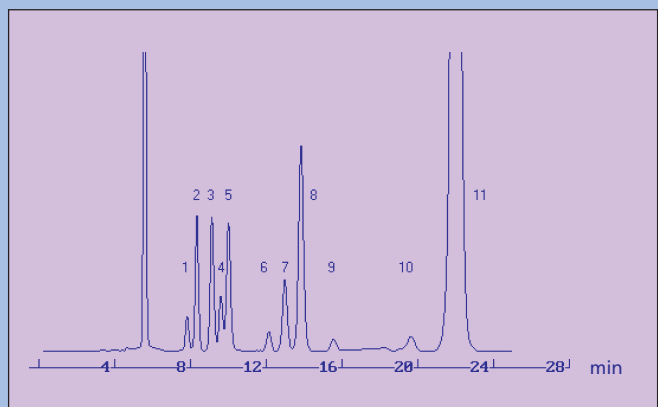
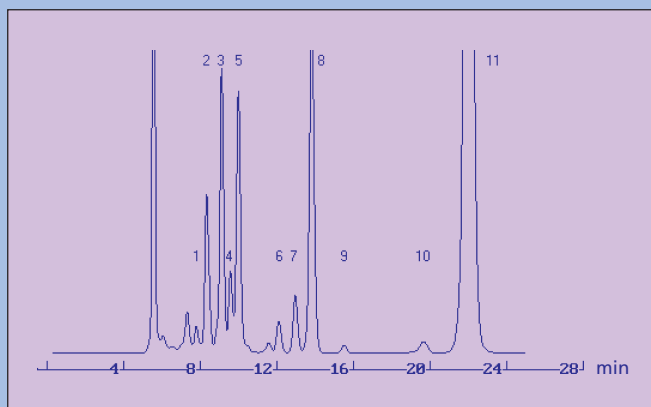
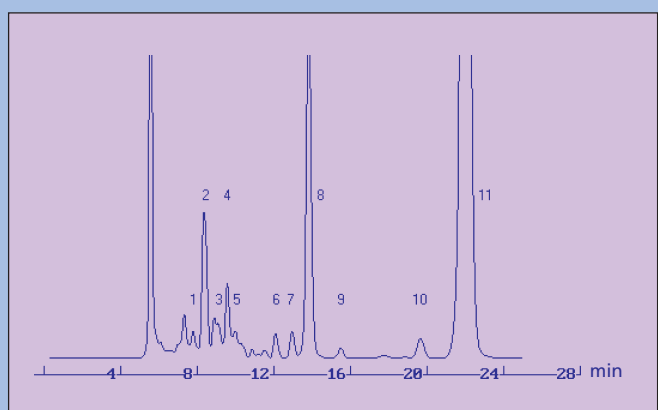
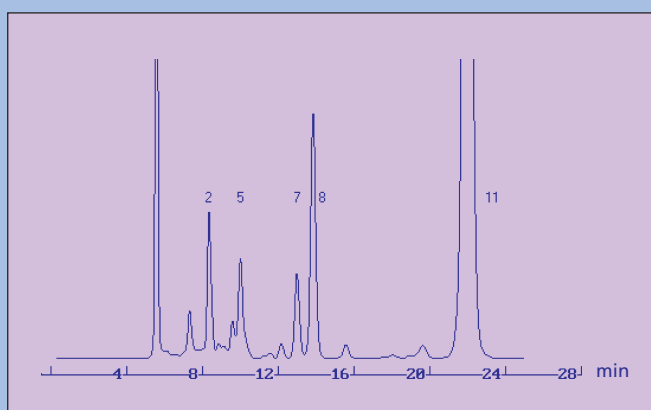


Column phase: GROM-SIL „Org. Acids“, 5 μ m
 Column size: 250 x 4 mm
 Eluent: 20 mM Na-phosphate, pH 2.8
 Flow rate: 0.5 ml/min
 Pressure: 9.5 MPa
 Temperature: RT
 Detection (UV): 220 nm
 Injection: 20 μ l (0.1 to 0.2 μ g/ml of each)



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 info@obrnutafaza.hr

Analysis of wines by HPLC

10 085 a Wine Standard

10 085 b Red Wine (sweet)

10 085 c Red Wine (dry)

10 085 d White Wine with Biological Degradation of Acids


Column phase: GROM-RESIN ZH, 10 μm + guard column
Column size: 300 x 8 mm
Eluent: 2.5 mM H_2SO_4
Flow rate: 0.6 ml/min
Pressure: 1MPa
Temperature: 60°C
Detection: RI
Sample: wine, diluted 1:10 with 10 mM H_2SO_4

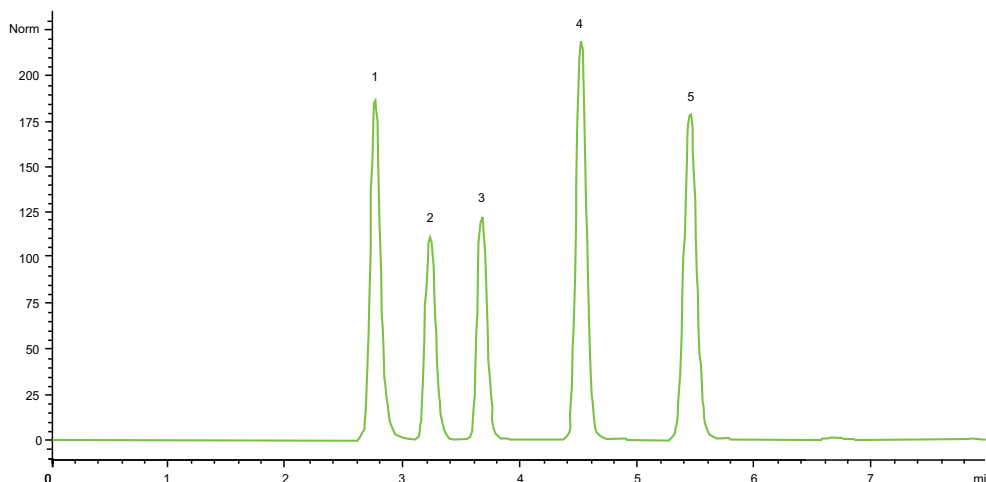
1) Citric acid 7) Lactic acid
 2) Tartaric acid 8) Glycerol
 3) Glucose 9) Acetic acid
 4) Malic acid 10) 2,3-Butanediol
 5) Fructose 11) Ethanol
 6) Succinic acid

| Analysis of | Field of application * | Column dimensions | Order number |
|---|--|-------------------|---------------------|
| Monosaccharides | Foodstuff industry, Nutrition sciences | 300 x 8 mm column | GP ZP 1 1012 S 3008 |
| Mono- and disaccharides, sugar alcohols | Fermentation control/ breweries | 300 x 8 mm column | GP ZC 1 1012 S 3008 |
| Sugars, alcohols, organic acids | Beverage industry (Viticulture / Enology) | 300 x 8 mm column | GP ZH 1 1012 S 3008 |
| Organic acids | Beverage industry | 300 x 8 mm column | GP AC 1 1012 S 3008 |
| Hop bitter acids | Beverage industry | 125 x 4 mm column | GS BI 1 0712 S 1204 |

* Further applications concerning the analysis of beverages and food see also pages 19–22

Organic Acids

On GraceSmart™ HPLC Column



1. Tartaric Acid
2. Malic Acid
3. Lactic Acid
4. Maleic Acid
5. Fumaric Acid

Test condition (as USP assay)

Test sample:

- (1) 5.5mg/ml Tartaric Acid
- (2) 11.8mg/ml Malic Acid
- (3) 15.2mg/ml Lactic Acid
- (4) 0.13mg/ml Maleic Acid
- (5) 0.18mg/ml Fumaric Acid

Column: GraceSmart™ C18, 120Å, 5µm, 4.6 x 150mm (Part #: 5138810)

Mobile Phase: 0.025M KH₂PO₄(pH2.5) : Methanol = 97:3

Flow: 0.7ml/min

Detection: UV at 220nm

Injection Volume: 1µl

| Sample | Retention Time (min) | Height |
|------------------|----------------------|--------|
| 1. Tartaric Acid | 2.766 | 185.9 |
| 2. Malic Acid | 3.238 | 111.3 |
| 3. Lactic Acid | 3.679 | 122.2 |
| 4. Maleic Acid | 4.528 | 218.7 |
| 5. Fumaric Acid | 5.459 | 178.5 |

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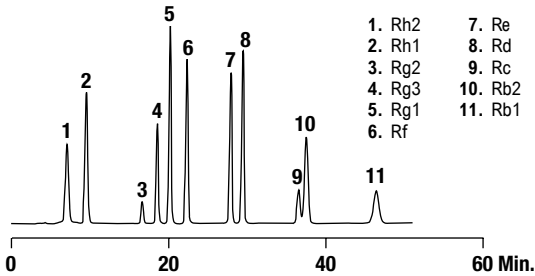
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Email: discoverysciences.AU@grace.com

Ginseng

Ginsenosides in Korean Ginseng

CHROM 10142



- 1. Rh2
- 2. Rh1
- 3. Rg2
- 4. Rg3
- 5. Rg1
- 6. Rf
- 7. Re
- 8. Rd
- 9. Rc
- 10. Rb2
- 11. Rb1

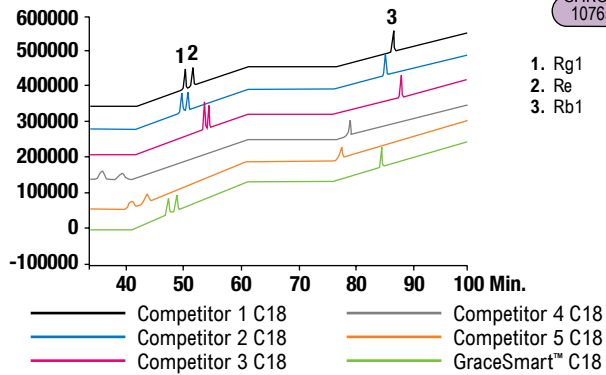
Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 250 x 4.6mm (Part No. 35101)
Mobile Phase: A: Acetonitrile:Water:Isopropyl Alcohol (80:5:15)
 B: Acetonitrile:Water:Isopropyl Alcohol (67:21:12)
Gradient:

| | | | | | | | |
|-------|----|----|----|----|----|-----|----|
| Time: | 0 | 28 | 35 | 45 | 50 | 51 | 57 |
| %B: | 25 | 85 | 80 | 75 | 90 | 100 | 25 |

Flow Rate: 0.8mL/min
Detector: ELSD

Ginseneoside

CHROM 10765



- 1. Rg1
- 2. Re
- 3. Rb1

Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: A: Water B: Acetonitrile
Gradient:

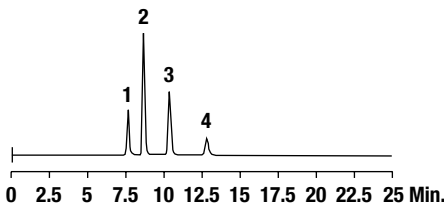
| | | | | | |
|-------|----|----|----|----|-----|
| Time: | 0 | 35 | 55 | 70 | 100 |
| %B: | 19 | 19 | 29 | 29 | 40 |

Flow Rate: 1.0mL/min
Detector: ELSD

Ginkgo Biloba

Folium Ginkgo

CHROM 10742

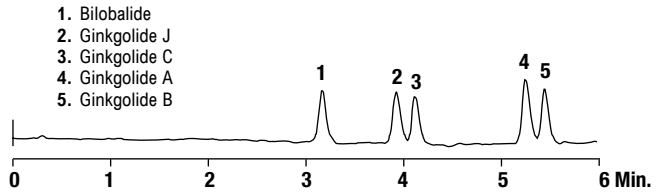


- 1. Ginkgolide C
- 2. Bilobalide
- 3. Ginkgolide A
- 4. Ginkgolide B

Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: Methanol:Tetrahydrofuran:Water (25:10:65)
Flow Rate: 1.0mL/min
Detector: ELSD

Terpene Lactones High Throughput

CHROM 10288



- 1. Bilobalide
- 2. Ginkgolide J
- 3. Ginkgolide C
- 4. Ginkgolide A
- 5. Ginkgolide B

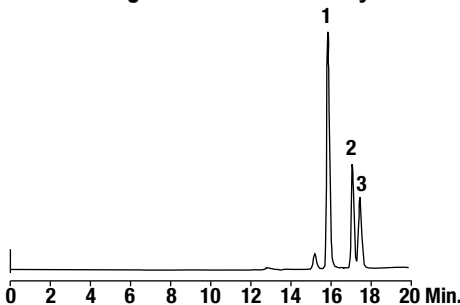
Column: Alltech® Alltima™ C18, 3µm, 53 x 7mm Rocket™ (Part No. 50605)
Mobile Phase: A: 0.1% Trifluoroacetic Acid in Water
 B: 0.1% Trifluoroacetic Acid in Methanol
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 5 |
| %B: | 10 | 45 |

Flow Rate: 5.0mL/min
Detector: ELSD

Ginkgo Biloba Flavonol Glycoside Standards

CHROM 10239



- 1. Quercetin
- 2. Kaempferol
- 3. Isorhamnetin

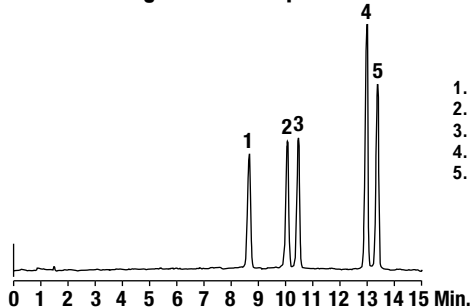
Column: Alltech® Platinum™ C18, 5µm, 250 x 4.6mm (Part No. 32064)
Mobile Phase: A: 0.05% Trifluoroacetic Acid in Water:Methanol (95:5)
 B: 0.05% Trifluoroacetic Acid in Methanol
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 20 |
| %B: | 10 | 90 |

Flow Rate: 1.0mL/min
Detector: ELSD

Ginkgo Biloba Terpene Lactone Standards

CHROM 10287



- 1. Bilobalide
- 2. Ginkgolide J
- 3. Ginkgolide C
- 4. Ginkgolide A
- 5. Ginkgolide B

Column: Alltech® Alltima™ C18, 3µm, 100 x 4.6mm (Part No. 813812)
Mobile Phase: A: 0.1% Trifluoroacetic Acid in Water
 B: 0.1% Trifluoroacetic Acid in Methanol
Gradient:

| | | |
|-------|----|----|
| Time: | 0 | 15 |
| %B: | 10 | 55 |

Flow Rate: 1.3mL/min
Detector: ELSD

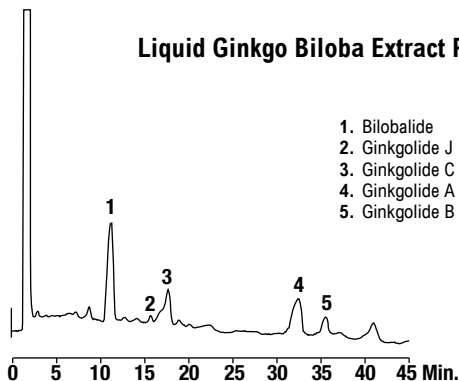
more applications

View our complete searchable chromatogram database at www.discoverysciences.com/chromdb/

hplc applications

Liquid Ginkgo Biloba Extract Prep

CHROM 10315



1. Bilobalide
2. Ginkgolide J
3. Ginkgolide C
4. Ginkgolide A
5. Ginkgolide B

Column: Alltech® Alltima™ C18, 5µm, 150 x 10mm (Part No. 81102)
Mobile Phase: A: 0.1% Trifluoroacetic Acid in Water
 B: 0.1% Trifluoroacetic Acid in Methanol
Gradient:

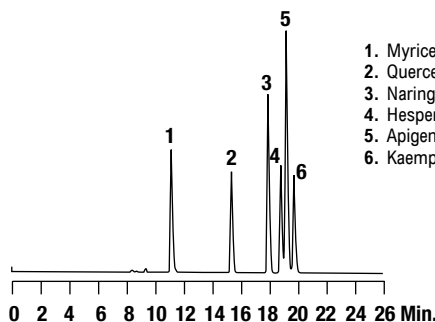
| | | |
|-------|----|----|
| Time: | 0 | 45 |
| %B: | 22 | 32 |

Flow Rate: 5.0mL/min
Detector: ELSD

Flavonoids

Polyphenolic Flavonoids

CHROM 9397



1. Myricetin
2. Quercetin
3. Naringenin
4. Hesperetin
5. Apigenin
6. Kaempferol

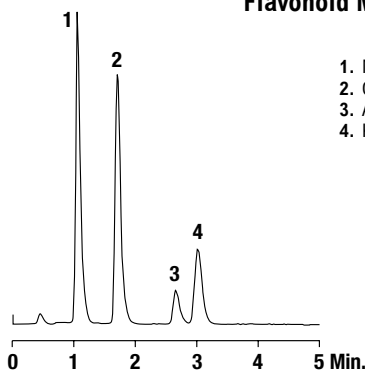
Column: Alltech® Prevail™ C18, 5µm, 150 x 4.6mm (Part No. 99208)
Mobile Phase: A: 0.025M KH₂PO₄, pH2.5 B: Acetonitrile
Gradient:

| | | | |
|-------|----|----|----|
| Time: | 0 | 15 | 25 |
| %B: | 20 | 40 | 40 |

Flow Rate: 1.0mL/min
Detector: UV at 280

Flavonoid Mix

CHROM 9271

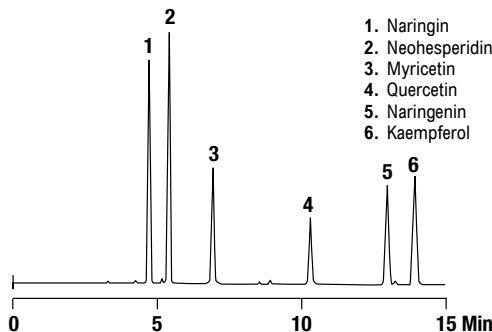


1. Myricetin
2. Quercetin
3. Apigenin
4. Kaempferol

Column: Alltech® Alltima™ C18 3µm, 53 x 7mm Rocket™ (Part No. 50605)
Mobile Phase: 0.1% Trifluoroacetic Acid in Water:
 0.1% Trifluoroacetic Acid in Acetonitrile (65:35)
Flow Rate: 2.5mL/min
Detector: ELSD

Flavonoid Mix

CHROM 8887



1. Naringin
2. Neohesperidin
3. Myricetin
4. Quercetin
5. Naringenin
6. Kaempferol

Column: Alltech® Alltima™ C18, 3µm, 100 x 4.6mm (Part No. 81382)
Mobile Phase: A: 0.05M K₂HPO₄, pH2.5 B: Acetonitrile
Gradient:

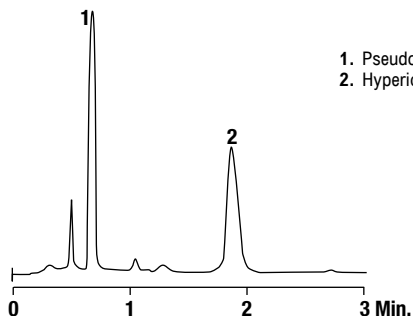
| | | |
|-------|----|----|
| Time: | 0 | 15 |
| %B: | 20 | 40 |

Flow Rate: 1.0mL/min
Detector: UV at 280nm

St. John's Wort

Hypericins

CHROM 9107



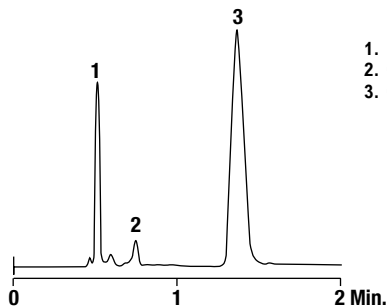
1. Pseudohypericin
2. Hypericin

Column: Alltech® Alltima™ C18, 3µm, 53 x 7mm Rocket™ (Part No. 50605)
Mobile Phase: 0.2% Phosphoric Acid:Methanol (5:95)
Flow Rate: 4.0mL/min
Detector: Vis at 585nm

Echinacea

Phenolic Acids

CHROM 9110



1. Protocatechuic Acid
2. Chlorogenic Acid
3. Caffeic Acid

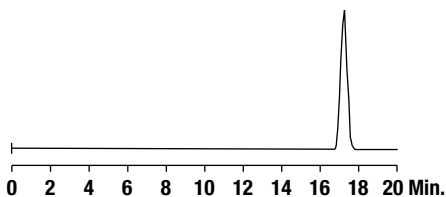
Column: Alltech® Alltima™ C18, 3µm, 53 x 7mm Rocket™ (Part No. 50605)
Mobile Phase: 0.01M K₂HPO₄, pH2.6:Acetonitrile (80:20)
Flow Rate: 3.5mL/min
Detector: UV at 330nm

Chinese Pharmacopeia

Fructus Liquidambaris

CHROM
10743

1. Liquidambaric Acid

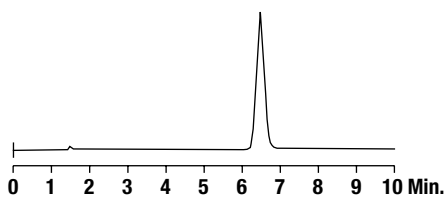


Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: Methanol:Water:Acetic Acid (87:13:0.1)
Flow Rate: 1.0mL/min
Detector: ELSD

Fructus Kochiae

CHROM
10744

1. Momordin Ic

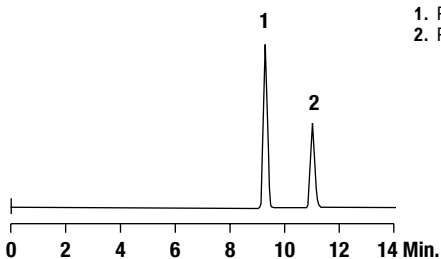


Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: Methanol:Water:Acetic Acid (85:15:0.2)
Flow Rate: 1.0mL/min
Detector: ELSD

Bulbus Fritillariae Thunbergii

CHROM
10745

1. Peimine
2. Peininine

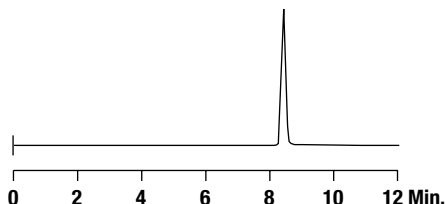


Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: Acetonitrile:Water:Diethylamine (70:30:0.3)
Flow Rate: 1.0mL/min
Detector: ELSD

Rhizoma Anemarrhenae

CHROM
10746

1. Sarsasapogenin

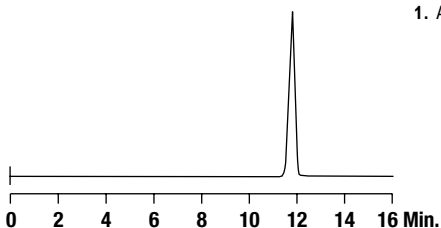


Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: Methanol:Water (95:5)
Flow Rate: 1.0mL/min
Detector: ELSD

Radix Astragali

CHROM
10747

1. Astragaloside IV



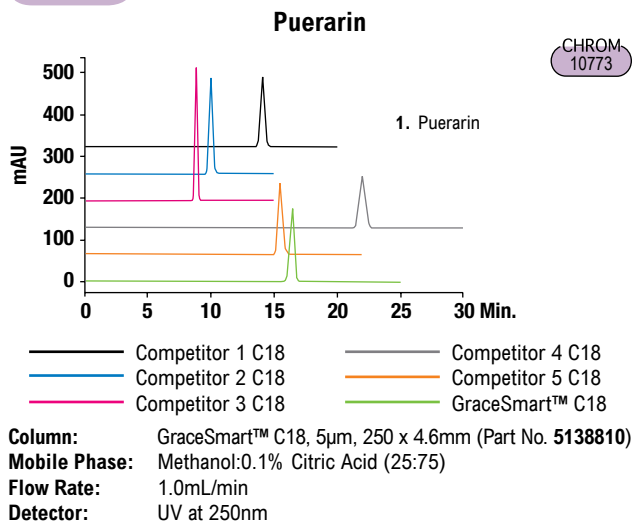
Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: Acetonitrile:Water (35:65)
Flow Rate: 1.0mL/min
Detector: ELSD

more applications

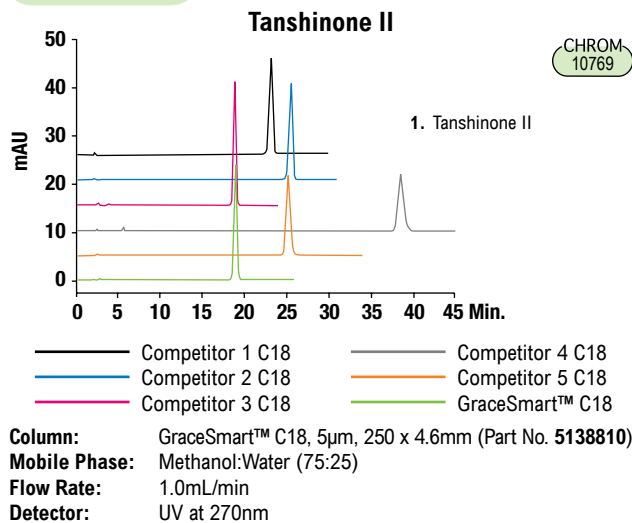
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hplc applications

Puerarin

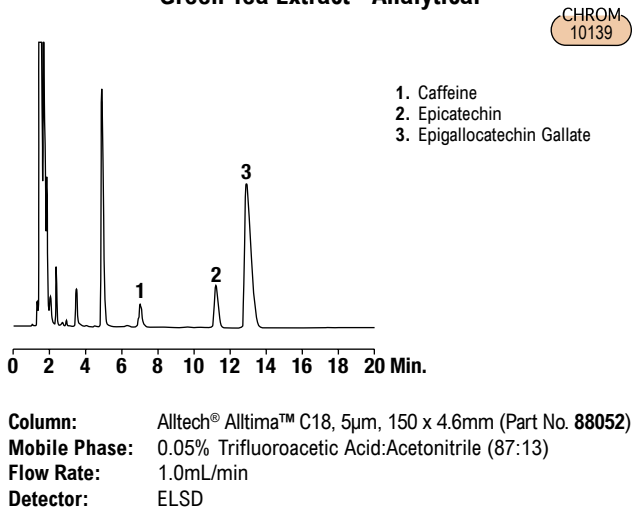


Tanshinone II

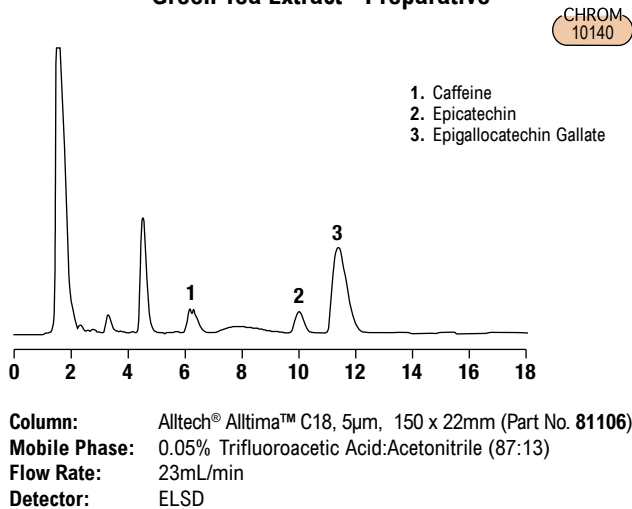


Green Tea

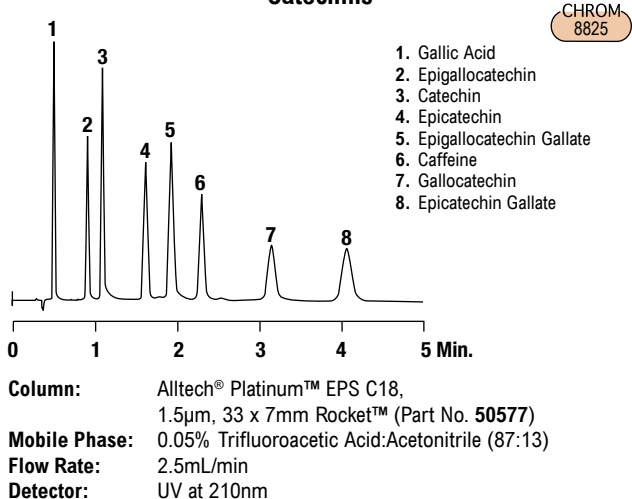
Green Tea Extract - Analytical



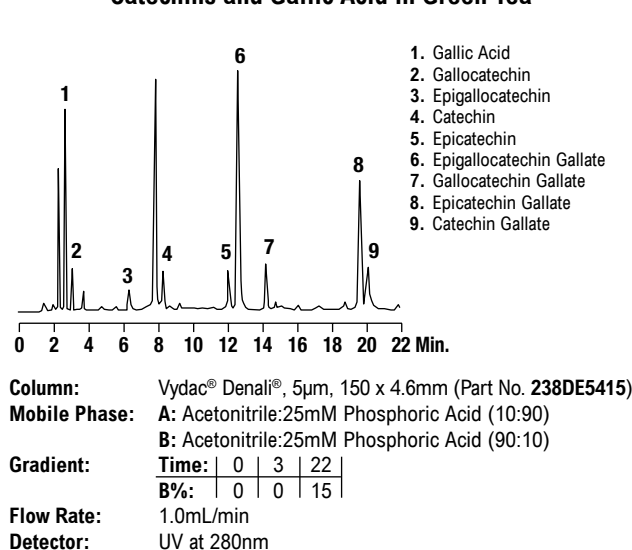
Green Tea Extract - Preparative



Catechins



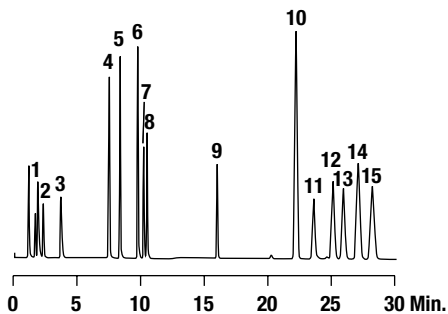
Catechins and Gallic Acid in Green Tea



Vitamins

Water- and Fat-Soluble Vitamins

CHROM 9545



1. Thiamine
2. Ascorbic Acid
3. Nicotinic Acid
4. Niacinamide
5. Pantothenic Acid
6. Riboflavin
7. Cyanocobalamin
8. Biotin
9. Vitamin A
10. Δ-Tocopherol
11. γ-Tocopherol
12. α-Tocopherol
13. Vitamin D2
14. Vitamin D3
15. Vitamin K

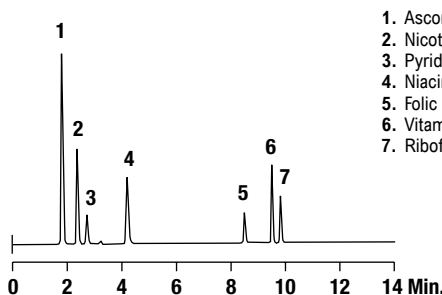
Column: Alltech® Prevail™ C18, 5µm, 150 x 4.6mm (Part No. 99208)
Mobile Phase: A: Water pH3.2 w/Formic Acid
 B: Acetonitrile:Methanol (83:17)
Gradient:

| | | | | | |
|-------|---|---|----|------|-----|
| Time: | 0 | 3 | 10 | 10.1 | 30 |
| %B: | 0 | 0 | 45 | 100 | 100 |

Flow Rate: 1.5mL/min
Detector: ELSD

Water-Soluble Vitamins

CHROM 10733



1. Ascorbic Acid
2. Nicotinic Acid
3. Pyridoxamine
4. Niacinamide
5. Folic Acid
6. Vitamin B12
7. Riboflavin

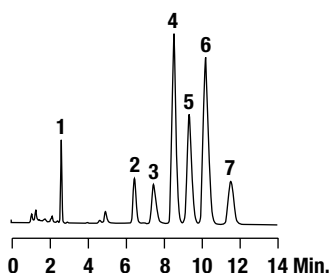
Column: GraceSmart™ C18, 5µm, 150 x 4.6mm (Part No. 5138812)
Mobile Phase: A: 0.1M Ammonium Dihydrogen Orthophosphate Buffer, pH4.5
 B: Acetonitrile
Gradient:

| | | | | |
|-------|---|---|----|----|
| Time: | 0 | 4 | 10 | 15 |
| B%: | 5 | 5 | 40 | 40 |

Flow Rate: 1.0mL/min
Detector: UV at 254nm

Fat-Soluble Vitamins and Tocopherols

CHROM 9390

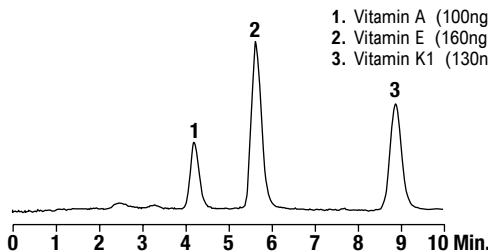


1. Vitamin A
2. Δ-Tocopherol
3. γ-Tocopherol
4. α-Tocopherol (Vitamin E)
5. Vitamin D2
6. Vitamin D3
7. Vitamin K

Column: Alltech® Prevail™ C18, 5µm, 150 x 4.6mm (Part No. 99208)
Mobile Phase: Acetonitrile:Methanol (75:25)
Flow Rate: 1.5mL/min
Detector: UV at 220nm

Fat-Soluble Vitamins

CHROM 10279

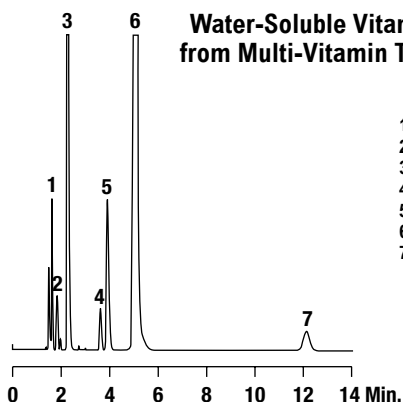


1. Vitamin A (100ng on column)
2. Vitamin E (160ng on column)
3. Vitamin K1 (130ng on column)

Column: Alltech® Alltima™ C18, 3µm, 150 x 1mm (Part No. 88384)
Mobile Phase: Methanol:Chloroform (90:10)
Flow Rate: 0.05mL/min
Detector: ELSD

Water-Soluble Vitamins from Multi-Vitamin Tablet

CHROM 9456

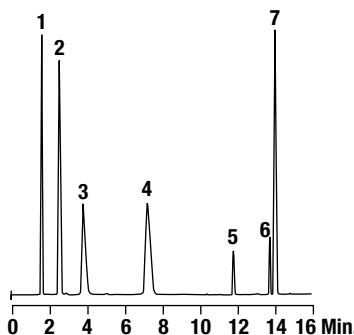


1. Thiamine
2. Ascorbic Acid
3. Unknown
4. Fumaric Acid
5. Pyridoxine
6. Niacinamide
7. Pantothenic Acid

Column: Alltech® Prevail™ C18, 5µm, 150 x 4.6mm (Part No. 99208)
Mobile Phase: 0.025M KH₂PO₄, pH3.0:Acetonitrile (97:3)
Flow Rate: 1.0mL/min
Detector: UV at 212

Water-Soluble Vitamins

CHROM 8154



1. Ascorbic Acid
2. Nicotinic Acid
3. Pyridoxamine
4. Niacinamide
5. Folic Acid
6. Riboflavin
7. Vitamin B12

Column: Alltech® Platinum™ C18, 5µm, 150 x 4.6mm (Part No. 32043)
Mobile Phase: A: 0.1M Ammonium Phosphate, pH4.5
 B: Acetonitrile
Gradient:

| | | | | |
|-------|---|---|----|----|
| Time: | 0 | 4 | 15 | 18 |
| B%: | 5 | 5 | 40 | 40 |

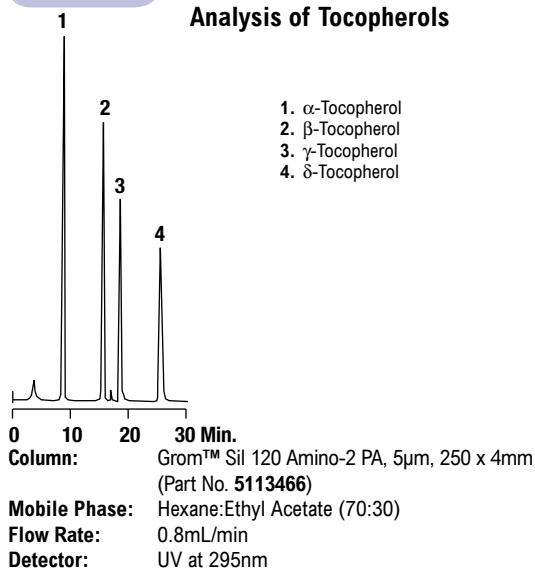
Flow Rate: 1.0mL/min
Detector: UV at 254nm

more applications

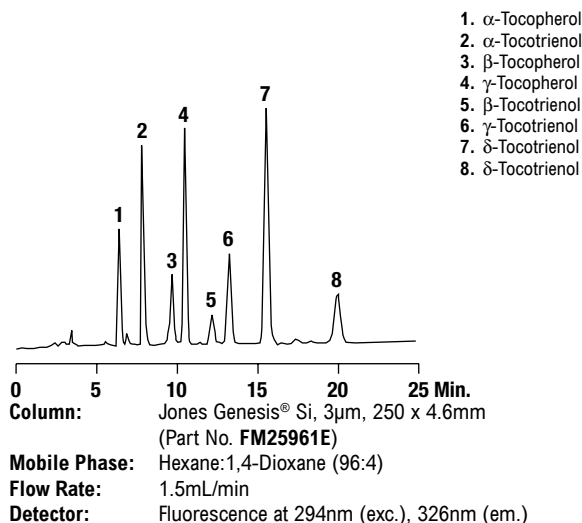
View our complete searchable chromatogram database at www.discoverysciences.com/chromdb/

Vitamins

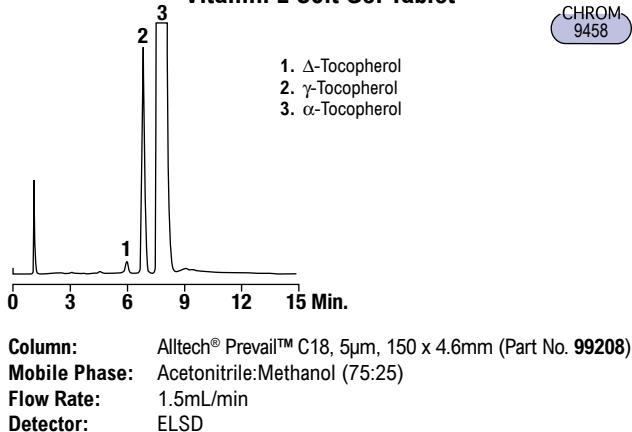
Analysis of Tocopherols



Vitamin E

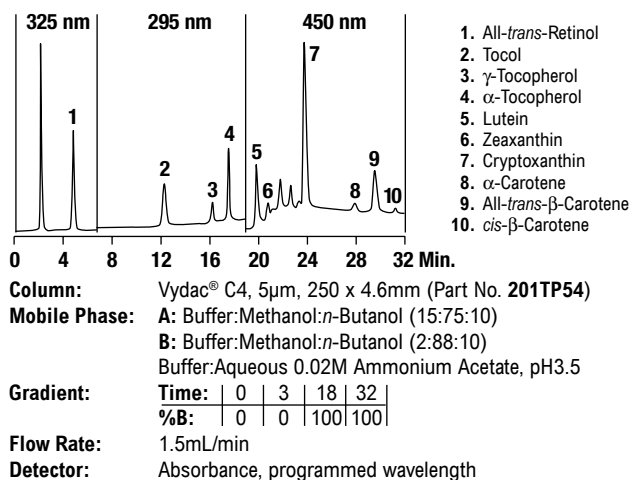


Vitamin E Soft Gel Tablet



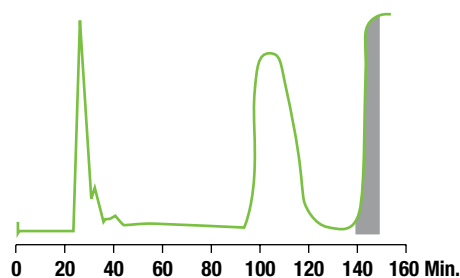
CHROM
9458

Determination of Retinol, α -Tocopherol, and β -Carotene in Serum



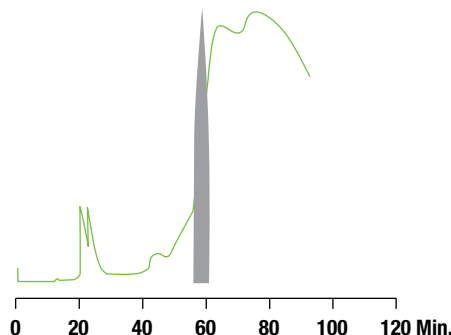
Preparative Purification of Tocopherol

First Step Separation of Tocopherol β -Isomer



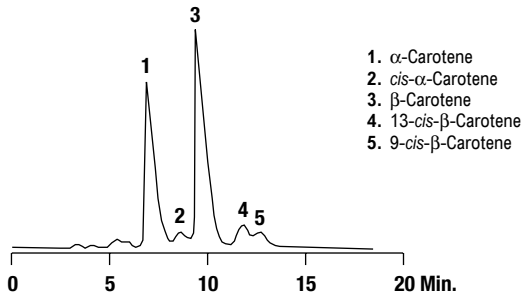
Shaded area indicates collected fraction.
Sample is 250g tocopherol isomer mixture in 1000mL hexane.
Silica: Davisil® LC60A 20-45 μ m, (Part No. 5055349)
Column: 200 x 500mm
Mobile Phase: Hexane:2.5% Tetrahydrofuran
Flow Rate: 600mL/min

Rechromatography of β -Isomer-Enriched Tocopherol



Shaded area indicates collected fractions.
Sample is pooled fraction from first step.
Silica: Davisil® LC60A 20-45 μ m, (Part No. 5055349)
Column: 50 x 500mm
Flow Rate: 50mL/min

β-Carotenes

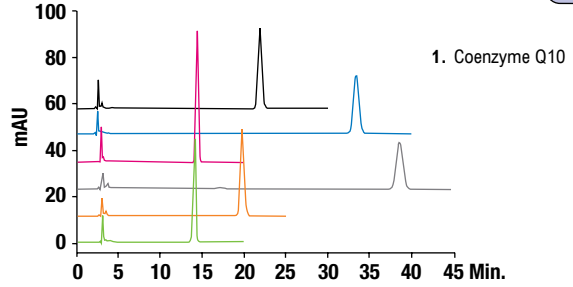


1. α-Carotene
2. cis-α-Carotene
3. β-Carotene
4. 13-cis-β-Carotene
5. 9-cis-β-Carotene

Column: Vydac® C4, 5µm, 250 x 4.6mm (Part No. 201TP54)
Mobile Phase: Methanol:Chloroform (94:6)

Coenzyme Q10

CHROM 10771



1. Coenzyme Q10

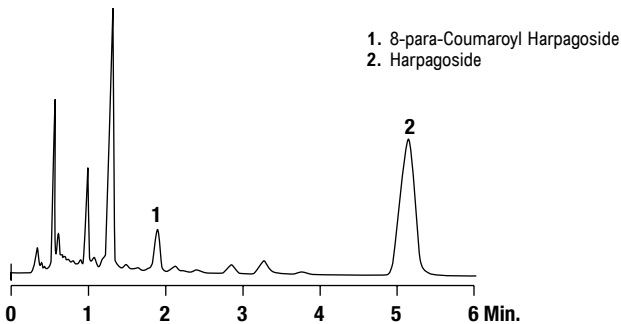
- Competitor 1 C18
- Competitor 4 C18
- Competitor 2 C18
- Competitor 5 C18
- Competitor 3 C18
- GraceSmart™ C18

Column: GraceSmart™ C18, 5µm, 250 x 4.6mm (Part No. 5138810)
Mobile Phase: Methanol:Ethanol (50:50)
Flow Rate: 1.0mL/min
Detector: UV at 275nm

Devil's Claw

Iridoid Compounds

CHROM 9191

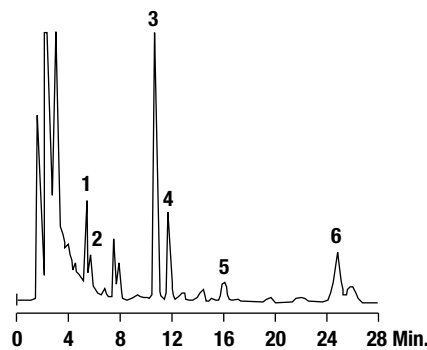


1. 8-para-Coumaroyl Harpagoside
2. Harpagoside

Column: Alltech® Alltima™ C18, 3µm, 53 x 7mm Rocket™ (Part No. 50605)
Mobile Phase: 0.05% Trifluoroacetic Acid:Methanol:Dioxane (75:23:2)
Flow Rate: 3.0mL/min
Detector: UV at 285nm

Saponins

HPLC Analysis of Saikosides



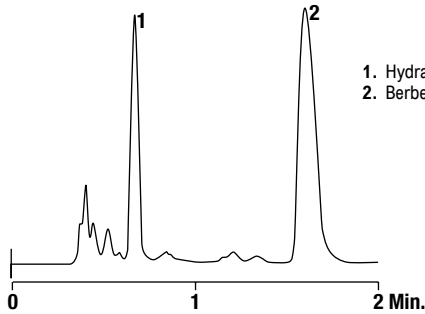
1. Saikosaponin c
2. Saikosaponin f
3. Saikosaponin a
4. Saikosaponin b2
5. Saikosaponin b1
6. Saikosaponin d

Column: Grom™ Sil 120 ODS-3 CP, 5µm, 250 x 4mm
Mobile Phase: Water:Methanol:Acetonitrile (45:15:40)
Flow Rate: 0.8mL/min
Detector: UV at 210nm

hplc applications

Goldenseal Root

Alkaloids



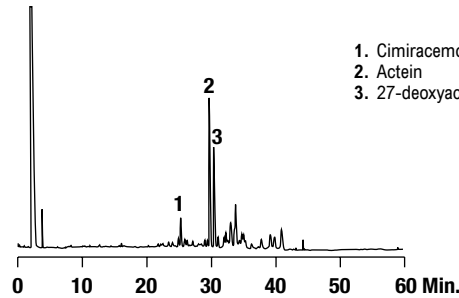
1. Hydrastine
2. Berberine

CHROM 9124

Column: Alltech® Alltima™ C18, 3µm, 53 x 7mm Rocket™ (Part No. 50605)
Mobile Phase: 0.02M KH₂PO₄, pH2.6:Methanol (52:48)
Flow Rate: 3.0mL/min
Detector: UV at 235nm

Black Cohosh

Black Cohosh Extract



1. Cimracemoside A
2. Actein
3. 27-deoxyactein

CHROM 9496

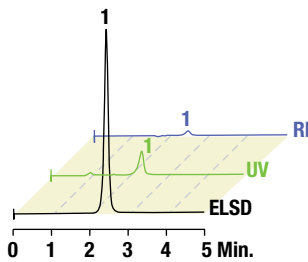
Column: Alltech® Prevail™ C18, 5µm, 250 x 4.6mm (Part No. 99210)
Mobile Phase: A: 1% Formic Acid B: Acetonitrile
Gradient:

| | | | | | |
|-------|----|-----|-----|----|----|
| Time: | 0 | 60 | 65 | 67 | 80 |
| %B: | 20 | 100 | 100 | 20 | 20 |

Flow Rate: 1.0mL/min
Detector: ELSD

Glucosamine

Glucosamine



1. Glucosamine

CHROM 10412

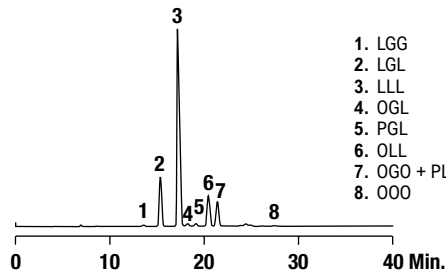
CHROM 10413

CHROM 10411

Column: Alltech® Prevail™ Carbohydrate ES, 5µm, 150 x 4.6mm (Part No. 35102)
Mobile Phase: Acetonitrile:Water (65:35)
Flow Rate: 1.0mL/min
Detector: ELSD

Evening Primrose

Triglycerides



1. LGG
2. LGL
3. LLL
4. OGL
5. PGL
6. OLL
7. OGO + PLL
8. OOO

CHROM 10047

Column: Alltech® Alltima™ C18, 5µm, 250 x 4.6mm (Part No. 88056)
Mobile Phase: A: Acetonitrile B: Dichloromethane
Gradient:

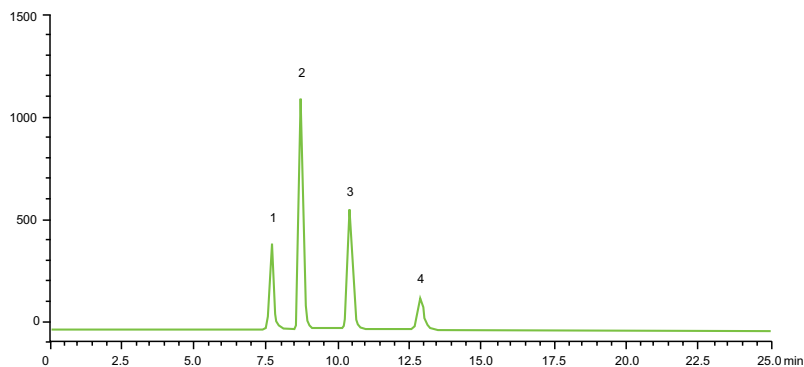
| | | |
|-------|----|----|
| Time: | 0 | 40 |
| %B: | 30 | 50 |

Flow Rate: 1.0mL/min
Detector: ELSD



Folium Ginkgo

On GraceSmart™ HPLC Column



1. Ginkgolide C
2. Bilobalide
3. Ginkgolide A
4. Ginkgolide B



Test Conditions (As Chinese Pharmacopoeia)

Test sample:

0.18mg/ml Ginkgolide A
 0.08mg/ml Ginkgolide B
 0.1mg/ml Ginkgolide C
 0.2mg/ml Bilobalide

Column: GraceSmart™ C18, 120Å, 5µm,
 4.6 x 250mm (Part #: 5138810)

Elution: Methanol: Tetrahydrofuran: Water
 =25:10:65

Flow: 1.0mL/min

Detection: 3300 ELSD, drift tube
 temperature 50°C, gas flow 1.6L/min, gain 4

Injection Volume: 10µl

| Sample | Area | Asymmetry | Theoretical Plates / Column (Bilobalide peak) |
|-----------------|----------|-----------|---|
| 1. Ginkgolide C | 4132129 | 1.10 | 14888 |
| 2. Bilobalide | 12086599 | 1.10 | 16224 |
| 3. Ginkgolide A | 7689152 | 1.12 | 16321 |
| 4. Ginkgolide B | 2559240 | 1.15 | 15869 |

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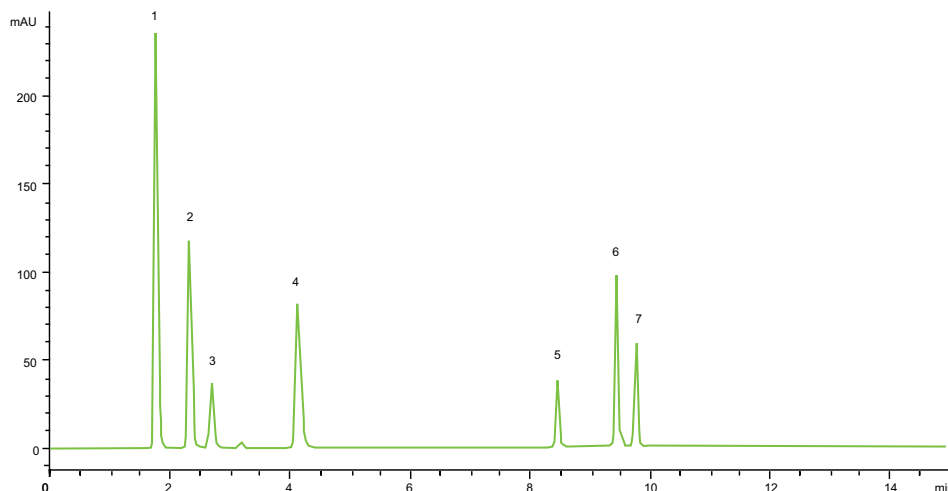
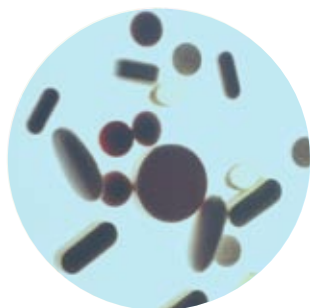
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Water-Soluble Vitamins

On GraceSmart™ HPLC Column



1. Ascorbic Acid
2. Nicotinic Acid
3. Pyridoxamine
4. Niacinamide
5. Folic Acid
6. Vitamin B12
7. Riboflavin

Test condition (as USP assay)

Column: GraceSmart™ C18, 5µm,
4.6 x 150mm (Part #: 5138812)

Mobile Phase:

A: 0.1M NH₄H₂PO₄ Buffer, pH4.5
B: Acetonitrile

Flow: 1.0mL/min

Detection: UV at 254nm

Injection Volume: 2µl

| Time (min) | %B: |
|------------|-----|
| 0 | 5 |
| 4 | 5 |
| 10 | 40 |
| 15 | 40 |

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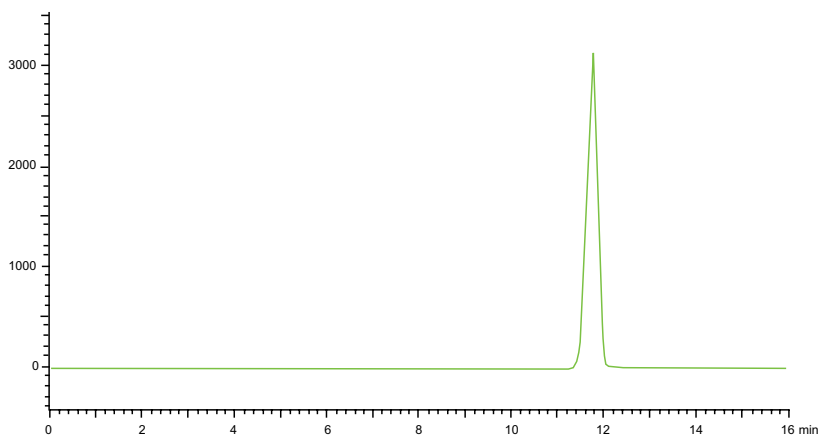
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Radix Astragali

On GraceSmart™ HPLC Column



Test Conditions (As Chinese Pharmacopoeia)

Test sample:

0.5mg/ml Astragaloside IV

Column: GraceSmart™ C18, 120Å, 5µm,
4.6 x 250mm (Part #: 5138810)

Elution: Acetonitrile:Water = 35:65

Flow: 1.0mL/min

Detection: 3300 ELSD, drift tube
temperature 50°C, gas flow 1.6L/min, gain 4

Injection Volume: 20µl

| Sample | Retention Time (min) | Area | Asymmetry | Theoretical Plates / Column (Astragaloside IV peak) |
|------------------|----------------------|----------|-----------|---|
| Astragaloside IV | 11.774 | 54964088 | 0.84 | 10778 |

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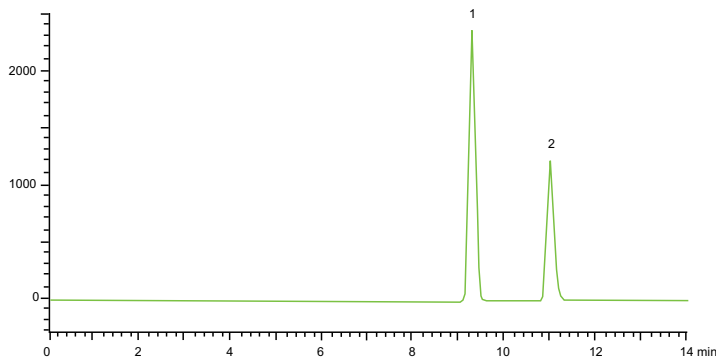
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Bulbus Fritillariae Thunbergii

On GraceSmart™ HPLC Column



Test Conditions (As Chinese Pharmacopoeia)

Test sample:

0.2 mg/ml Peimine
0.15mg/ml Peininine

Column: GraceSmart™ C18, 120Å, 5µm,
4.6 x 250mm (Part #: 5138810)

Elution: Acetonitrile: Water: Diethylamine
=70:30:0.03

Flow: 1.0mL/min

Detection: 3300 ELSD, drift tube
temperature 65°C, gas flow 2.0L/min, gain 4

Injection Volume: 20µl

| Sample | Retention Time (min) | Area | Asymmetry | Theoretical Plates / Column (Peimine peak) |
|--------------|----------------------|----------|-----------|---|
| 1. Peimine | 9.308 | 23294807 | 1.01 | 20284 |
| 2. Peininine | 11.008 | 15130154 | 1.12 | 21474 |

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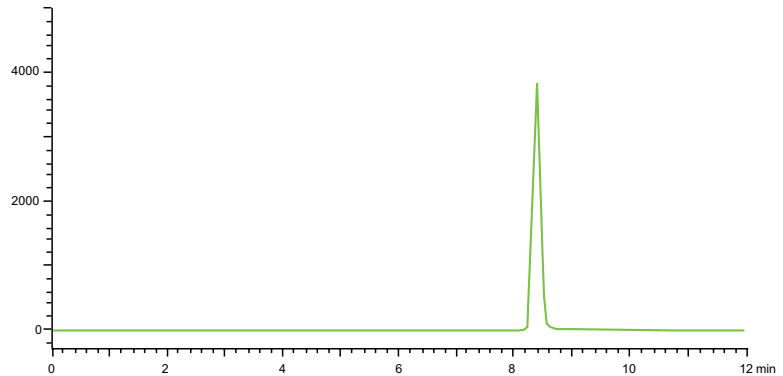
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Rhizoma Anemarrhenae

On GraceSmart™ HPLC Column



Test Conditions (As Chinese Pharmacopoeia)

Test sample:

0.3 mg/ml Sarsasapogenin

Column: GraceSmart™ C18, 120Å, 5µm,
4.6 x 250mm (Part #: 5138810)

Elution: Methanol:Water = 95:5

Flow: 1.0mL/min

Detection: 3300 ELSD, drift tube
temperature 50°C, gas flow 1.6L/min, gain 4

Injection Volume: 10µl

| Sample | Retention Time (min) | Area | Asymmetry | Theoretical Plates / Column (Sarsasapogenin peak) |
|----------------|----------------------|----------|-----------|---|
| Sarsasapogenin | 8.383 | 36497157 | 1.09 | 18276 |

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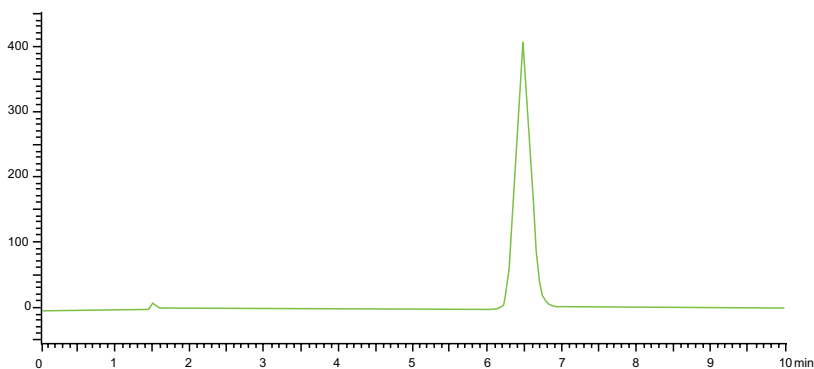
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Fructus Kochiae

On GraceSmart™ HPLC Column



Test Conditions (As Chinese Pharmacopoeia)

Test sample:
0.5 mg/ml Momordin Ic

Column: GraceSmart™ C18, 120Å, 5µm,
4.6 x 250mm (Part #: 5138810)

Elution: Methanol: Water: Acetic Acid
=85:15:0.2

Flow: 1.0mL/min

Detection: 3300 ELSD, drift tube
temperature 65°C, gas flow 2.0L/min, gain 4

Injection Volume: 20µl

| Sample | Retention Time (min) | Area | Asymmetry | Theoretical Plates / Column (Momordin Ic peak) |
|-------------|----------------------|---------|-----------|--|
| Momordin Ic | 6.475 | 6163232 | 1.08 | 5367 |

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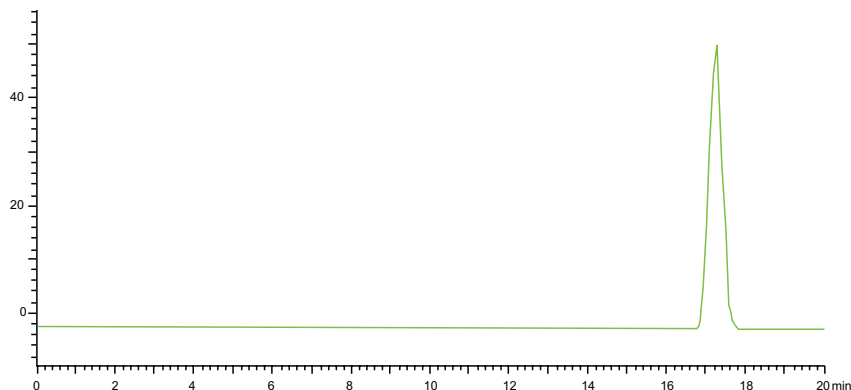
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Fructus Liquidambaris

On GraceSmart™ HPLC Column



Test Conditions (As Chinese Pharmacopoeia)

Test sample:
0.3 mg/ml Liguidanbaric acid

Column: GraceSmart™ C18, 120Å, 5µm,
4.6 x 250mm (Part #: 5138810)

Elution: Methanol: Water: Acetic Acid
=87:13:0.1

Flow: 1.0mL/min

Detection: 3300 ELSD, drift tube
temperature 65°C, gas flow 2.0L/min, gain 4

Injection Volume: 8µl

| Sample | Retention Time (min) | Area | Asymmetry | Theoretical Plates / Column (Liguidanbaric acid peak) |
|--------------------|----------------------|---------|-----------|---|
| Liguidanbaric acid | 17.266 | 1237867 | 0.992 | 11100 |

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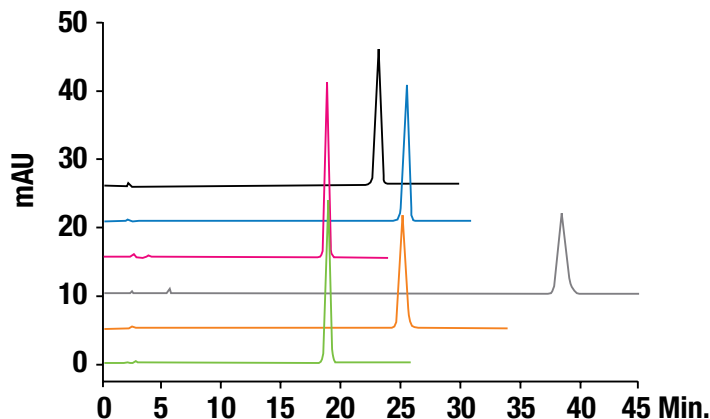
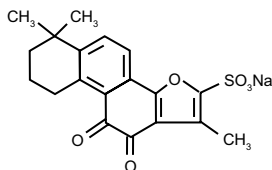
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Tanshinone II

On GraceSmart™ HPLC Column



- GraceSmart™ RP 18 Part No. 5138810
- Competitor 1 C18
- Competitor 2 C18
- Competitor 3 C18
- Competitor 4 C18
- Competitor 5 C18

Test condition
(as Chinese Pharmacopeia assay)

Test sample: 16ug/ml Tanshinone II in Methanol

Column: 4.6 x 250mm C18

Flow: 1.0ml/min

Eluent: Methanol:Water 75:25

Detection: Absorbance, 270nm

Column temp. : 30°C

Injection Volume: 5µl

| | CHP Spec | GraceSmart™ RP 18 | Comp 1 C18 | Comp 2 C18 | Comp 3 C18 | Comp 4 C18 | Comp 5 C18 |
|----------------------|----------|-------------------|------------|------------|------------|------------|------------|
| Retention Time (min) | N/A | 18.980 | 25.125 | 38.526 | 18.846 | 25.459 | 23.104 |
| Theoretical plates | ≥2000 | 15473 | 12729 | 15515 | 16571 | 18821 | 15500 |
| Tailing Factor@5% | N/A | 0.911 | 1.209 | 1.046 | 1.002 | 1.018 | 1.028 |

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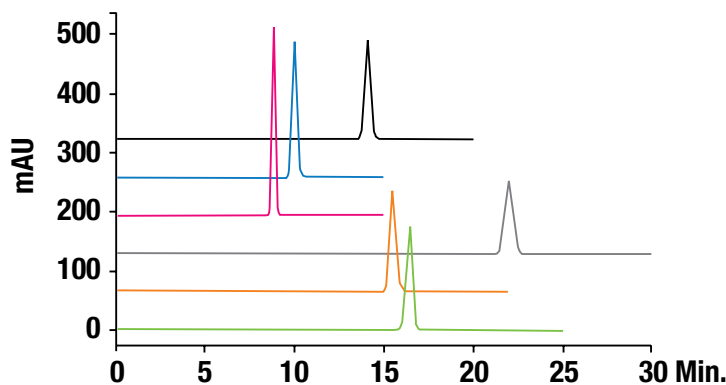
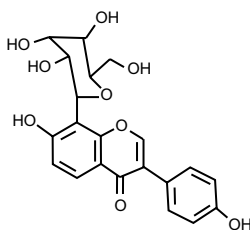
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Puerarin

On GraceSmart™ HPLC Column



- GraceSmart™ RP 18 Part No. 5138810
- Competitor 1 C18
- Competitor 2 C18
- Competitor 3 C18
- Competitor 4 C18
- Competitor 5 C18

Test condition
(as Chinese Pharmacopeia assay)

Test sample: 0.05mg/ml Puerarin in mobile phase

Column: 4.6 x 250mm C18

Flow: 1.0ml/min

Eluent: Methanol:0.1% Citric Acid 25:75

Detection: Absorbance, 250nm

Column temp. : 30°C

Injection Volume: 20µl

| | CHP Spec | GraceSmart™ RP 18 | Comp 1 C18 | Comp 2 C18 | Comp 3 C18 | Comp 4 C18 | Comp 5 C18 |
|----------------------|----------|-------------------|------------|------------|------------|------------|------------|
| Retention Time (min) | N/A | 16.411 | 15.443 | 21.948 | 8.813 | 9.965 | 14.054 |
| Theoretical plates | ≥2500 | 10683 | 9841 | 9536 | 10356 | 7188 | 7443 |
| Tailing Factor@5% | N/A | 0.946 | 1.255 | 1.044 | 1.060 | 1.136 | 1.062 |

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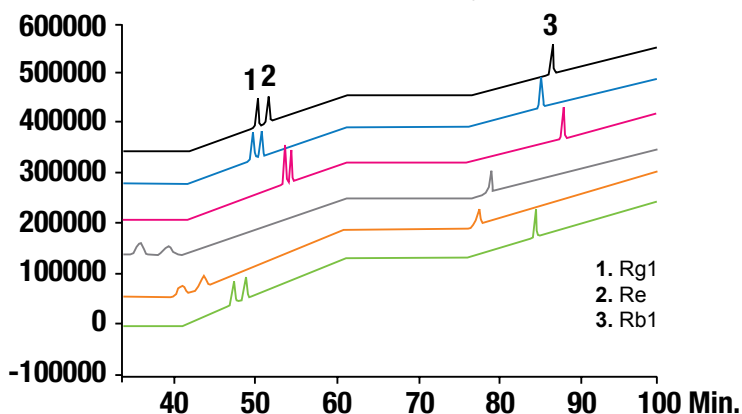
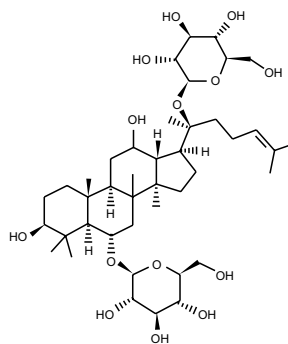
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Radix Et Rhizoma Ginseng

On GraceSmart™ HPLC Column



- GraceSmart™ RP 18 Part No. 5138810
- Competitor 1 C18
- Competitor 2 C18
- Competitor 3 C18
- Competitor 4 C18
- Competitor 5 C18

Test condition
(as Chinese Pharmacopeia assay)

Test sample: 0.2mg/ml Rg1, 0.2mg/ml Re, 0.2mg/ml Rb1 in mobile phase

Column: 4.6 x 250mm C18

Flow: 1.0ml/min

Eluent: Gradient

| Time | A% | B% |
|-----------|---------|---------|
| 0-35min | 19 | 81 |
| 35-55min | 19 — 29 | 81 — 71 |
| 55-70min | 29 | 71 |
| 70-100min | 29 — 40 | 71 — 60 |

Detection: Absorbance, 203nm

Column temp. : 30°C

Injection Volume: 20µl

| | CHP Spec | GraceSmart™ RP 18 | Comp 1 C18 | Comp 2 C18 | Comp 3 C18 | Comp 4 C18 | Comp 5 C18 |
|----------------------|----------|-------------------|------------|------------|------------|------------|------------|
| Retention Time (min) | N/A | 50.212 | 49.551 | 53.551 | 35.702 | 40.856 | 47.300 |
| Theoretical plates | ≥6000 | 17486 | 9779 | 9054 | 19779 | 12534 | 18925 |
| Tailing Factor@5% | N/A | 0.865 | 1.003 | 0.981 | 0.934 | 0.924 | 0.954 |

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