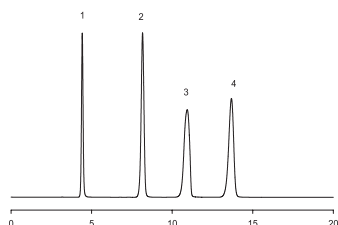


7. Applications

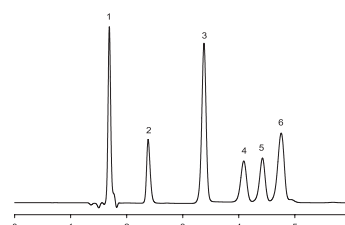
7-1. Biochemicals

Amino acids-Underderivatized



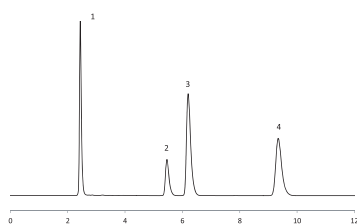
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 20 mM KH₂PO₄ aq.
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Phenylalanine 2. Phenylglycine
 3. 4-Fluorophenylalanine 4. Tryptophan

Amino acids-Underderivatized



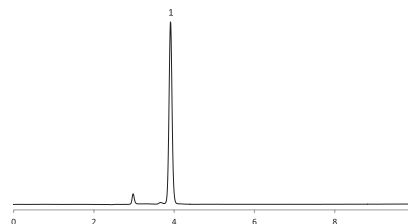
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 20 mM KH₂PO₄ aq.
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Alanine 2. Valine 3. Methionine
 4. Iso-leucine 5. Leucine 6. Nor-leucine

Amino acids



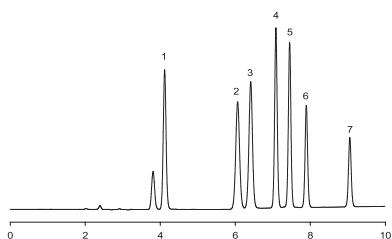
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6 mm
 Mobile Phase : 10mM HClO₄ aq. / MeOH = 60 / 40
 Flow rate : 1.0mL/min Detection : UV 210nm
 Temperature : 35 °C Injection Volume : 10 μ L
 Sample : 1. Pyridin-Phenylalanine
 2. Homo-Phenylalanine
 3. 4-Chloro-DL-Phenylalanine
 4. 4-Phenyl-DL-Phenylalanine

DL-Norvaline



Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6 mm
 Mobile Phase : 20 mM NaH₂PO₄ aq.
 Flow rate : 1.0 mL/min
 Detection : UV 210 nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. DL-Norvaline

Amino acids, Fmoc-derivatives



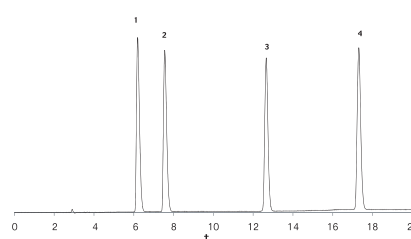
Column : Hector-T C18 5 μ m Dimension : 250 X 4.6mm
 Mobile phase : A: 0.1 M Sodium acetate aq. (pH 4.4) / THF /
 ACN = 75 / 15 / 10 B: ACN / THF = 85 / 15

Gradient :

Time	0	3	4	10
% B	30	30	40	70

Flow rate : 1.0 ml/min Detection : UV 254nm
 Temperature : 25 °C Injection Volume : 10 μ L
 Sample : 1. Fmoc-proline 2. Fmoc-serine 3. Fmoc-tryptophane
 4. Fmoc-leucine 5. Fmoc-arginine 6. Fmoc-tyrosine
 7. Fmoc-histidine

β -blockers



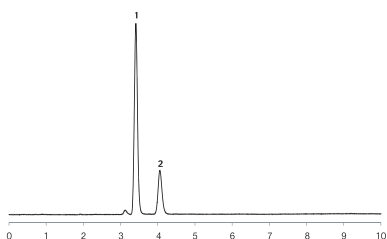
Column : Hector-M C18 5 μ m Dimension : 250 X 4.6mm
 Mobile phase : A: 0.03% TFA aq. B: 0.03% TFA in ACN

Time	0	20
% B	30	50

Flow rate : 1.0 ml/min
 Detection : UV 230nm
 Temperature : 25 °C
 Injection Volume : 5 μ L
 Sample : 1. Pindolol 2. Metoprolol 3. Propranolol 4. Carvedilol

7-1. Biochemical

Cystein & D,L-ATC

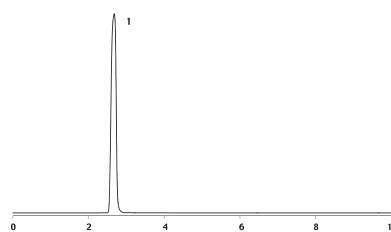


Column : Hector-M C18 5 μ m Dimension : 250 X 4.6mm
 Mobile phase : A: 10 mM KH₂PO₄, K₂HPO₄ (pH7.1) B: ACN
 Gradient :

Time	0	10	20
% B	0	3	60

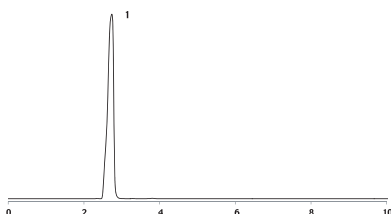
Flow rate : 1.0 ml/min Detection : UV 210nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Cystein 2. D,L-ATC

L-Histidin



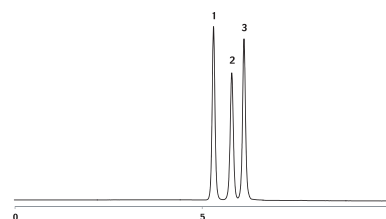
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1 % H₃PO₄ aq.
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. L-Histidin

L-Pyroglutamic acid



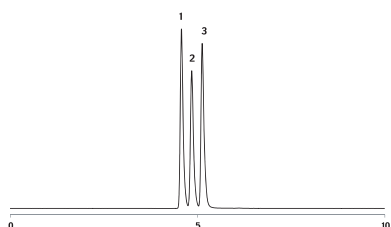
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10 mM KH₂PO₄ aq. / MeOH = 90 / 10
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. L-Pyroglutamic acid

Nucleic acid & base



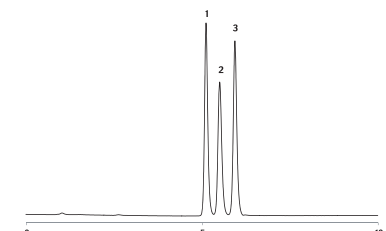
Column : Hector-M PN 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10 mM KH₂PO₄ aq. / MeOH = 85 / 15
 Flow rate : 0.5ml/min
 Detection : UV 230nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Cytidin 2. Cytosine 3. Adenonin

Nucleic acid & base



Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10 mM H₃PO₄ aq. / MeOH = 85 / 15
 Flow rate : 0.5ml/min
 Detection : UV 230nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Cytidin 2. Cytosine 3. Adenonin

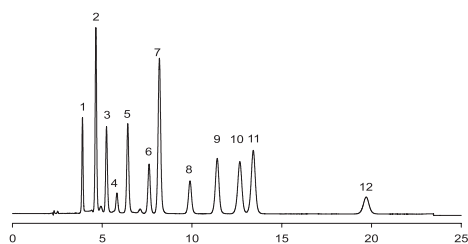
Nucleic acid & base



Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10 mM H₃PO₄ aq. / MeOH = 85 / 15
 Flow rate : 0.5ml/min
 Detection : UV 230nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Cytidin 2. Cytosine 3. Adenonin

7-1. Biochemical

Nucleosides



Column : Hector-T C18 5 μ m

Dimension : 250 X 4.6mm

Mobile phase : 30 mM NH₄H₂PO₄ aq.(pH5.3) / ACN = 98 / 2

Flow rate : 1.0ml/min

Detection : UV 254nm

Temperature : 25 °C

Injection Volume : 10 μ L

Sample : 1. β -Pseudouridine 25 μ g/ml

2. Cytidine 50 μ g/ml

3. 3-Methylcytidine methosulfate 100 μ g/ml

4. Uridine 25 μ g/ml

5. 1-Methyladenosine 25 μ g/ml

6. 2-Thiocytidine dihydrate 10 μ g/ml

7. 5-Methylcytidine 100 μ g/ml

8. 7-Methylguanosine 25 μ g/ml

9. 2'-O-Methylcytidine 20 μ g/ml

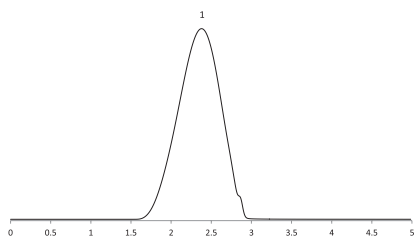
10. Inosine 25 μ g/ml

11. Guanosine 25 μ g/ml

12. 5-Methyluridine 100 μ g/ml

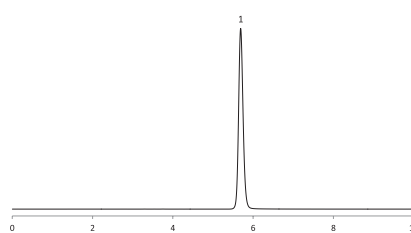
7-2. Cosmetics

Polysilicon-15



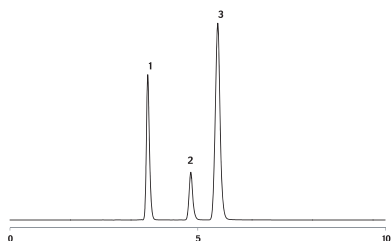
Column : Hector-W C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : THF
 Flow rate : 1.0 ml/min
 Detection : UV 310nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Polysilicon-15

Niacinamide



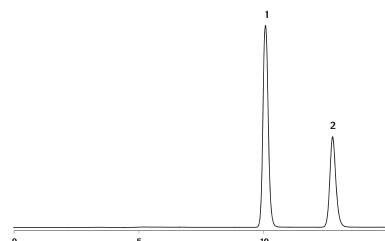
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.05 M KH₂PO₄ (pH 7.0 with Sodium hydroxide) / MeOH = 75 / 25
 Flow rate : 1ml/min
 Detection : UV 263nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Niacinamide

Arbutin & Adenosine & Niacinamide



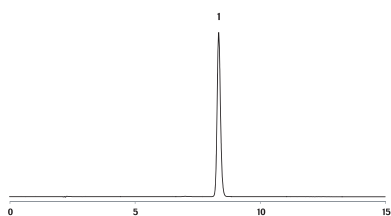
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10 mM KH₂PO₄ aq. / ACN = 92 / 8
 Flow rate : 1.0ml/min
 Detection : UV 280nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Arbutin 2. Niacinamide 3. Adenosine

Benzoic acid & Salicylic acid



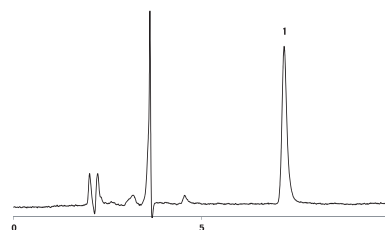
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1 % H₃PO₄ aq. / ACN = 60 / 40
 Flow rate : 0.7 ml/min
 Detection : UV 225nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Salicylic acid 2. Benzoic acid

Dipotassium glycyrrhizate(DPG-K2)



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN = 70 / 30
 Flow rate : 1.0 ml/min
 Detection : UV 230nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. DPG-K2

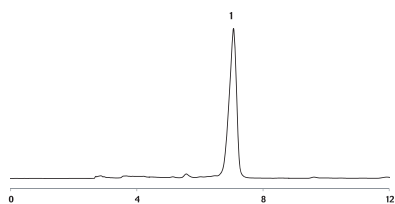
Hydroquinone



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10 mM KH₂PO₄ aq. / ACN = 98 / 2
 Flow rate : 1.0 ml/min
 Detection : UV 280nm
 Temperature : 25 °C
 Injection Volume : 20 μ L
 Sample : 1. Hydroquinone

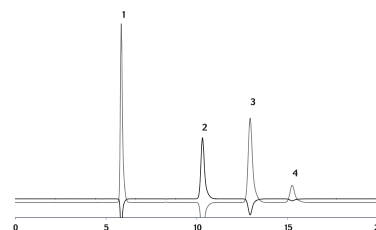
7-2. Cosmetics

Madecassic acid



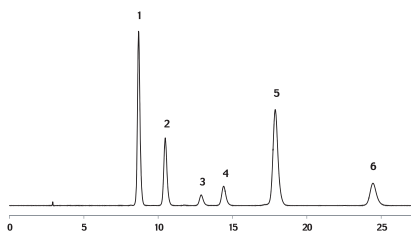
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 40 / 60
 Flow rate : 0.7 ml/min
 Detection : UV 220nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Madecassic acid

Sun screen



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : ACN / Water = 85 / 15
 Flow rate : 1.5 ml/min
 Detection : UV 305, 360nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. IMC 2. DHHB (360 nm) 3. OMC 4. OS

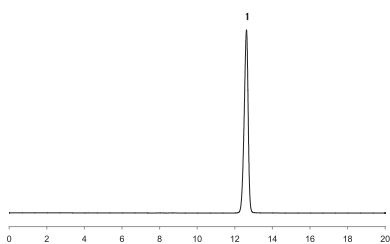
Sun screen & S1



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : ACN / MeOH / Water = 60 / 20 / 20
 Flow rate : 1.0 ml/min
 Detection : UV 325nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. IMC 2. DHHB 3. S₁ 4. S₁ 5. OMC 6. OS

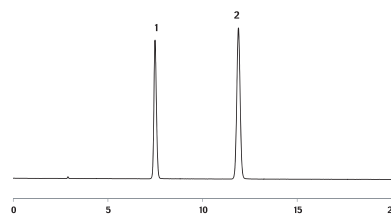
7-3. Pharmaceuticals

Aciclovir(Acyclovir)



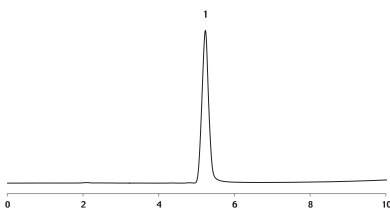
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.01M KH₂PO₄ aq. (0.1 % 1-Decansulfonic acid, pH 3.0) / ACN = 96 / 4
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 20 °C
 Injection Volume : 10 μ L
 Sample : 1. Aciclovir(Acyclovir)

Aripiprazole



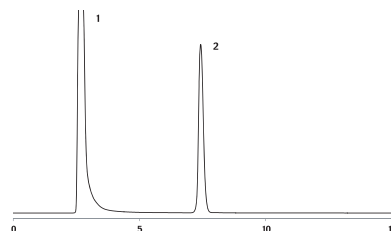
Column : Hector-M C8 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 20 mM Na₂SO₄ / ACN / MeOH / Acetic acid = 560 / 330 / 110 / 1
 Flow rate : 1.2 ml/min
 Detection : UV 254nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Aripiprazole 2. Propyl Paraben

Allantoin



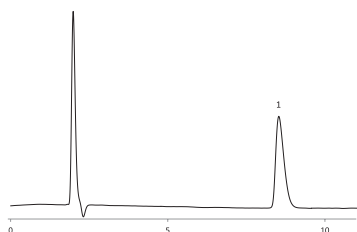
Column : Hector-M NH2 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 30 / 70
 Flow rate : 1.2 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Allantoin

Allylisopropylacetylurea



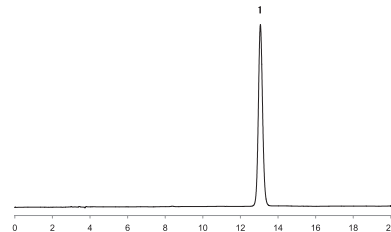
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : MeOH / Water / Acetic acid / Triethylamine = 600 / 400 / 1 / 1
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample solvent : DMSO / Mobile phase = 1 / 2
 Sample : 1. DMSO 2. Allylisopropylacetylurea

Topiramate



Column : Optimapak C18 5 μ m
 Dimension : 250 X 4.6 mm
 Mobile Phase : 0.02 M Ammonium acetate aq. (pH 4.0) / Methanol = 60 / 40
 Flow rate : 1.5 mL/min
 Detection : RID
 Temperature : 40 °C
 Injection Volume : 20 μ L
 Sample : 1. Topiramate

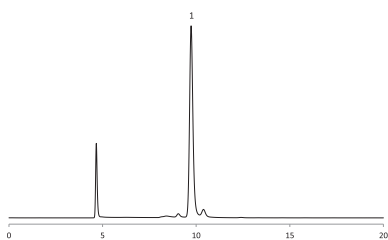
Fluconazole



Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.01 M KH₂PO₄ aq. (0.1 % 1-Decansulfonic acid, pH 3.0) / MeOH = 70 / 30
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Fluconazole

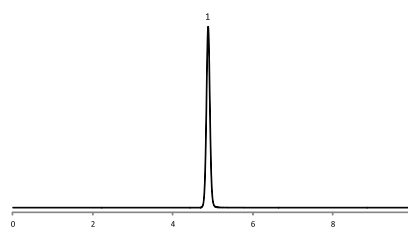
7-3. Pharmaceuticals

Naftifine HCl



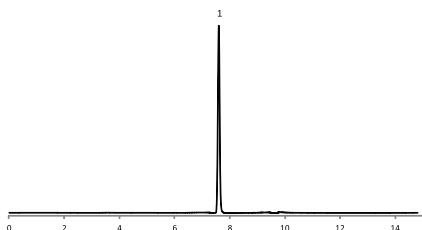
Column : Optimapak Sil 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Hexane / Ethanol = 2 / 1 (0.5 % HClO₄)
 Flow rate : 0.8 ml/min
 Detection : UV 282nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Naftifine HCl

Acetaminophen



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6 mm
 Mobile Phase : Water / Methanol = 3 / 1
 Flow rate : 1.0 mL/min
 Detection : UV 243 nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Acetaminophen

Acetaminophen

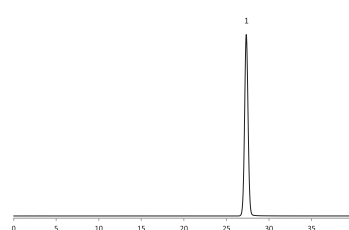


Column : Hector-M C8 3 μ m Dimension : 150 X 4.6 mm
 Mobile Phase : A: 1.7 g/L of KH₂PO₄ and 1.8 g/L of Na₂HPO₄
 B: Methanol

Gradient :	Time	0.0	3.0	7.0	7.1	10.0
	% B	1	1	81	1	1

Flow rate : 1.0 mL/min Detection : UV 230 nm
 Temperature : 35 °C Injection Volume : 5 μ L
 Sample : 1. Acetaminophen

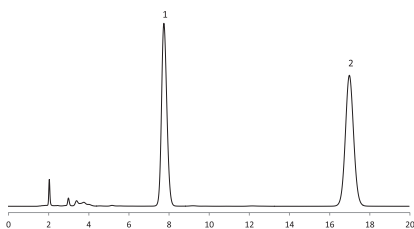
Acetanilide



Column : Optimapak C8 5 μ m
 Dimension : 250 X 4.6 mm
 Mobile Phase : A) MeOH / Water / Acetic acid = 50 / 850 / 1
 B) MeOH / Water / Acetic acid = 500 / 500 / 1
 A / B = 82 / 1 8

Flow rate : 0.9 mL/min
 Detection : UV 254 nm
 Temperature : 40 °C
 Injection Volume : 1 0 μ L
 Sample : 1. Acetanilide

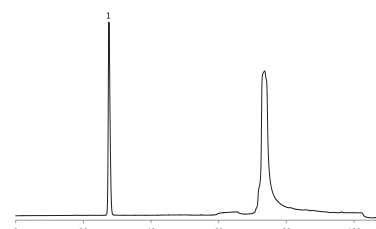
Cefpiramide Sodium for Injection



Column : Hector-M C18 10 μ m
 Dimension : 300 X 3.9 mm
 Mobile Phase : 0.01 mol/L Phosphate buffer (pH 6.8) / MeOH /
 ACN / THF = 880 / 40 / 40 / 40

Flow rate : 1.2 mL/min
 Detection : UV 254 nm
 Temperature : 45 °C
 Injection Volume : 5 μ L
 Sample : 1. Cefpiramide 2. Aminopyrine

Atorvastatin Calcium



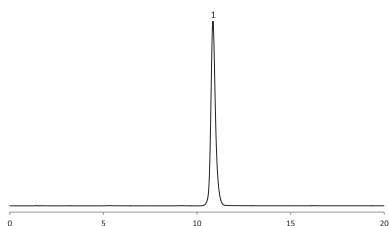
Column : Optimapak C8 5 μ m
 Dimension : 250 X 4.6 mm
 Mobile Phase : Buffer: 3.9 g/L of ammonium acetate in water(pH 5.1 with acetic acid)
 Solution A: ACN / THF / Buffer = 23 / 12 / 65
 Solution B: ACN / THF / Buffer = 61 / 12 / 27

Time	0	40	70	85	100	105	115
% B	0	0	80	100	100	0	0

Flow rate : 1.5 mL/min Detection : UV 244 nm
 Temperature : 35 °C Injection Volume : 20 μ L
 Sample : 1. Atorvastatin Calcium

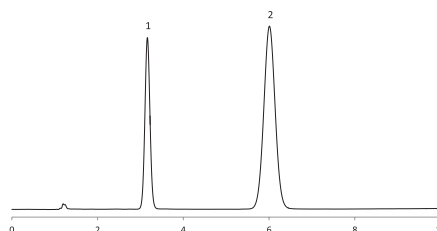
7-3. Pharmaceuticals

Atorvastatin



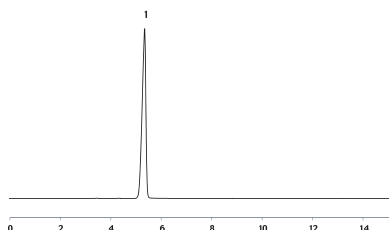
Column : Optimapak C18 5 μ m
 Dimension : 250 X 4.6 mm
 Mobile Phase : buffer) 10.5g of Citric acid monohydrate in 1 L of water (pH 4.0)
 buffer / ACN / THF = 530 / 270 / 200
 Flow rate : 1.4 mL/min
 Detection : UV 254 nm
 Temperature : 40 °C
 Injection Volume : 10 mL
 Sample : 1. Atorvastatin

Amoxicillin · Clavulanate Potassium



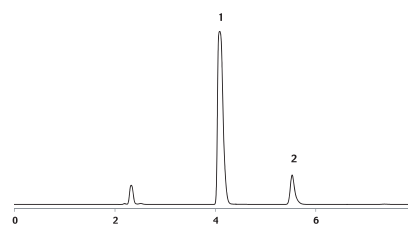
Column : HECTOR-M C18 10 μ m
 Dimension : 300 X 3.9 mm
 Mobile Phase : Phosphate buffer (pH 4.4) / MeOH = 95 / 5
 Flow rate : 2.0 mL/min
 Detection : UV 220 nm
 Temperature : 25 °C
 Injection Volume : 10 mL
 Sample : 1. Clavulanate Potassium
 2. Amoxicillin

Fluconazole



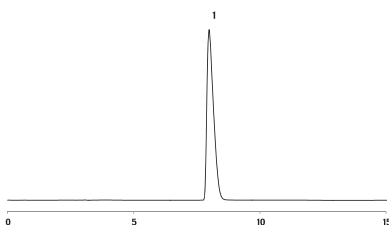
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% Ammonium acetate aq. / MeOH / ACN = 70 / 20 / 10
 Flow rate : 1.0 ml/min
 Detection : UV 322nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Fluconazole

Benzenesulfonic acid & Butylhydroquinone



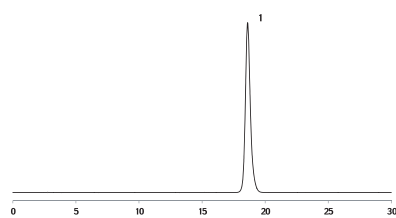
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 25mM Ammonium acetate aq. / ACN = 30 / 70
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Benzenesulfonic acid 2. Butylhydroquinone

Bortezomib



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. (pH2.0) / MeOH = 50 / 50
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Bortezomib

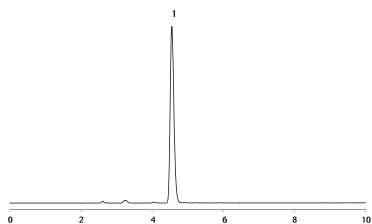
Buprenorphine HCl



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 1.0 % Ammonium acetate aq. / MeOH / Acetic acid = 10 / 60 / 0.1
 Flow rate : 1.0 ml/min
 Detection : UV 280nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Buprenorphine HCl

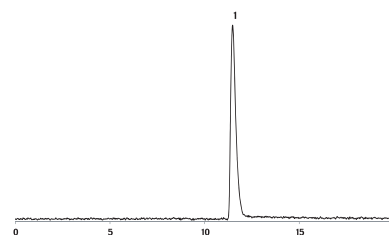
7-3. Pharmaceuticals

CarbidOPA



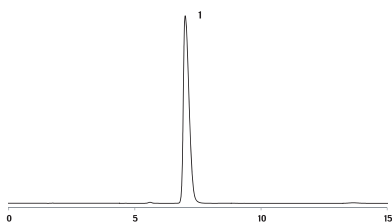
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. (pH2.0) / ACN = 70 / 30
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 20 °C
 Injection Volume : 10 μ L
 Sample : 1. CarbidOPA

Carvedilol



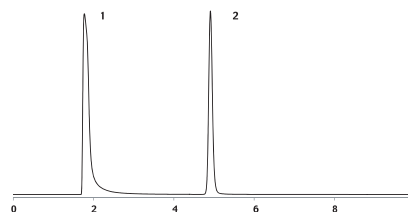
Column : Hector-M C8 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 20 mM KH₂PO₄ aq. (pH2.0) / ACN = 690 / 310
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 55 °C
 Injection Volume : 10 μ L
 Sample : 1. Carvedilol

Chlordiazepoxide HCl



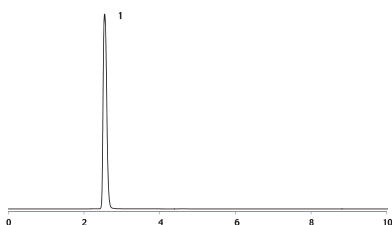
Column : Hector-M C18 5 μ m
 Dimension : 100 X 8.0mm
 Mobile phase : Buffer / THF / MeOH = 70 / 24 / 6
 (10mM Octansulfonic acid aq.)
 Flow rate : 2.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Chlordiazepoxide HCl

Cilindipine



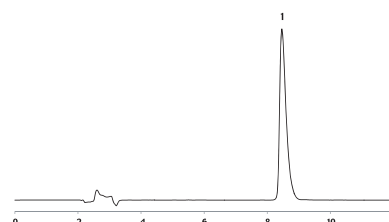
Column : Hector-M C18 5 μ m
 Dimension : 250 X 3.9mm
 Mobile phase : Water / ACN = 20 / 80
 Flow rate : 1.0 ml/min
 Detection : UV 230nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample solvent : DMSO / Mobile phase = 1 / 2
 Sample : 1. DMSO 2. Cilindipine

Citicoline



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10mM Tetrabutylammonium hydrogen sulfate
 aq. / MeOH = 95 / 5
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Citicoline

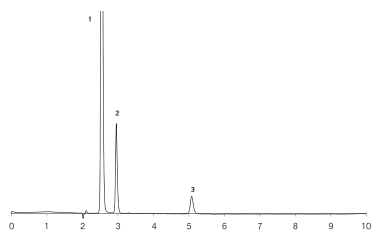
Dexamethansone Phosphate disodium



Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : H₃PO₄ aq. (pH2.3) / ACN = 70 / 30
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 40 °C
 Injection Volume : 20 μ L
 Sample : 1. Dexamethansone Phosphate disodium

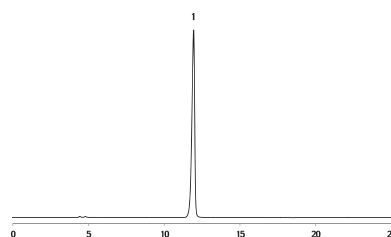
7-3. Pharmaceuticals

Dexibuprofen



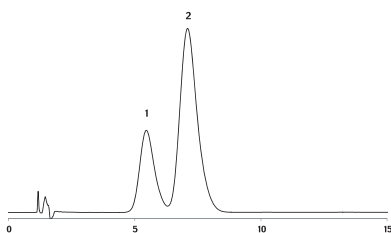
Column : Hector-M M18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1 % H₃PO₄ / ACN = 70 / 30
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 25 °C
 Injection Volume : 5 μ L
 Sample : 1. Dexibuprofen 2. Phenol 3. Caffeine

Doripenem



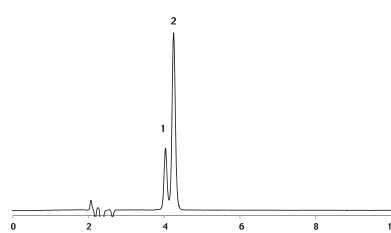
Column : Hector-A C18 3 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : 0.1% Triethylamine (pH 5.8) / ACN = 95 / 5
 Flow rate : 0.5 ml/min
 Detection : UV 215nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Doripenem

Ephedrine



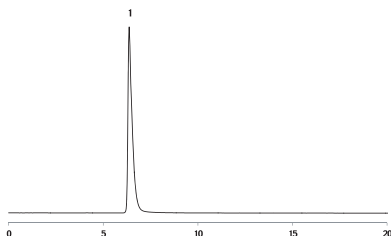
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Buffer / MeOH / H₃PO₄ = 640 / 340 / 1
 (Buffer : 5g Sodium lauryl sulfate)
 Flow rate : 1.5 ml/min
 Detection : UV 210nm
 Temperature : 45 °C
 Injection Volume : 10 μ L
 Sample : 1. Ephedrine 2. Atropine

Ephedrine



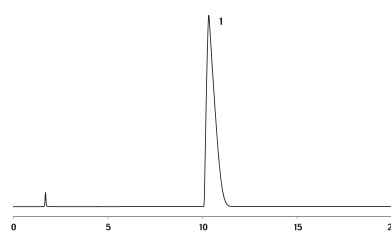
Column : Hector-M PN 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Buffer / MeOH = 350 / 650
 (Buffer : 6.8g Sodium acetate + 16.22g Sodium octane sulfonate with Acetic acid pH 4.6)
 Flow rate : 1.2 ml/min
 Detection : UV 215nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Ephedrine 2. Atropine

Fenofibrate



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : H₃PO₄ (pH2.5) aq. / ACN = 30 / 70
 Flow rate : 1.0 ml/min
 Detection : UV 285nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Fenofibrate

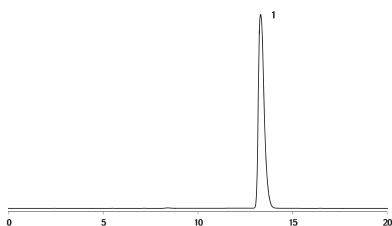
Fentanyl citrate



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 65 / 35
 Flow rate : 1.5 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Fentanyl citrate

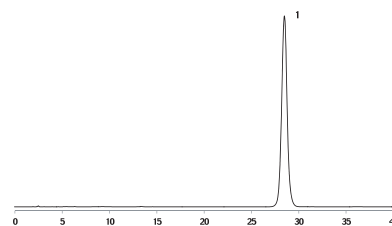
7-3. Pharmaceuticals

Fludiazepam



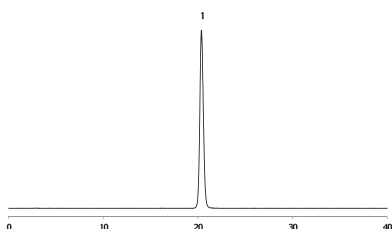
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN / Acetic acid = 60 / 40 / 0.4
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Fludiazepam

Gefitinib



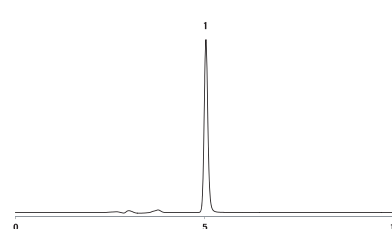
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10 mM KH₂PO₄ / ACN = 35 / 65
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Gefitinib

Gemcitabine HCl



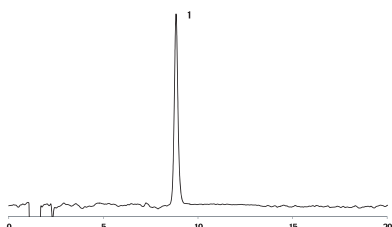
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10mM NaH₂PO₄ aq. (pH2.4)
 Flow rate : 1.0 ml/min
 Detection : UV 275nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Gemcitabine HCl

Linezolid



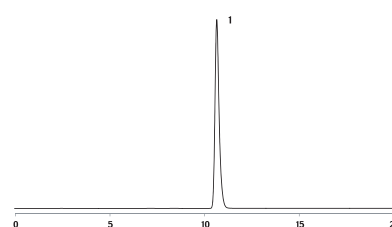
Column : Hector-T C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : 0.1 % TFA aq. / 0.1 % TFA in ACN = 66 / 34
 Flow rate : 0.5 ml/min
 Detection : UV 254nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Linezolid

Lithocholic acid



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10mM Ammonium acetate aq. / ACN / Acetic acid = 30 / 70 / 1
 Flow rate : 1.5 ml/min
 Detection : RID
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Lithocholic acid

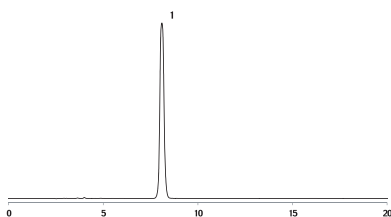
Lometazepam



Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN / Acetic acid = 60 / 40 / 0.4
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Lometazepam

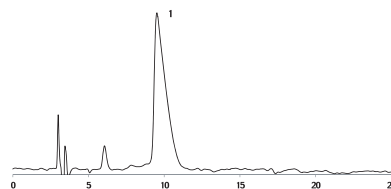
7-3. Pharmaceuticals

Loxoprofen



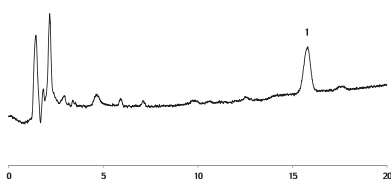
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : MeOH / Water / Acetic acid / Triethylamine
 = 600 / 400 / 1 / 1
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Loxoprofen

Lysozyme chloride



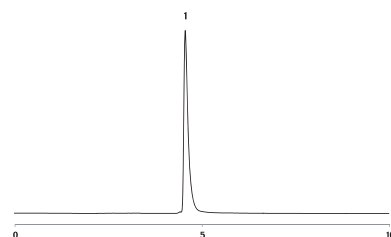
Column : Hector-W C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN / TFA = 638 / 630 / 2
 Flow rate : 1.0 ml/min
 Detection : RID
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Lysozyme chloride

Misoprostol



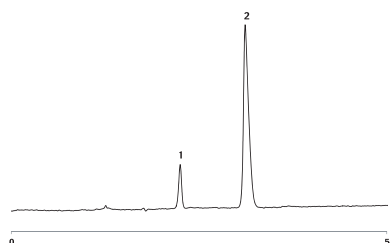
Column : Hector-M C18 3 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : Water / ACN = 52 / 48
 Flow rate : 0.2 ml/min
 Detection : UV 210nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Misoprostol

Ofloxacin



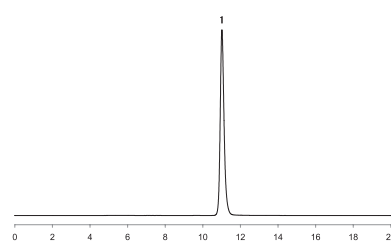
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : A : 20 mM KH₂PO₄ & K₂HPO₄
 B : Acetonitrile
 A / B = 50 / 50
 Flow rate : 1.0ml/min
 Detection : UV 240nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Ofloxacin

Phentermine



Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.03 % Diethylamine in MeOH
 Flow rate : 1.5 ml/min
 Detection : UV 254nm
 Temperature : 25 °C
 Injection Volume : 5 μ L
 Sample : 1. Caffein 2. Phentermine

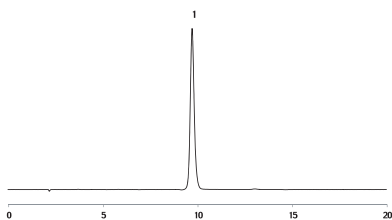
Pirfenidone



Column : Hector-M PN 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 13.8g NaH₂PO₄ + 2.5mL H₃PO₄ / 1 L aq. (pH2.4) /
 MeOH = 50 / 50
 Flow rate : 1.0 ml/min
 Detection : UV 317nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Pirfenidone

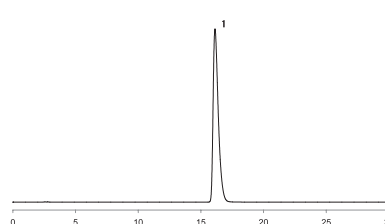
7-3. Pharmaceuticals

Proxicam



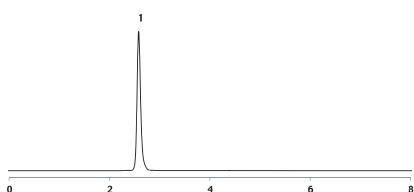
Column : Hector-M PN 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ / ACN = 40 / 60
 Flow rate : 1.0 ml/min
 Detection : UV 360nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Proxicam

Propiverine



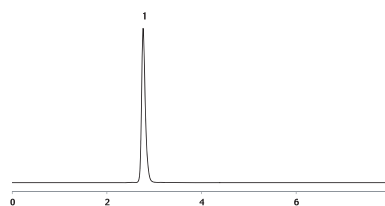
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / MeOH = 30 / 70
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Propiverine

Rantidine HCl



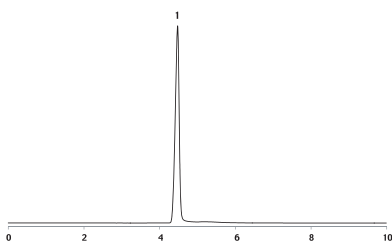
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1M Ammonium acetate aq. / MeOH = 15 / 85
 Flow rate : 1.0 ml/min
 Detection : UV 322nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Rantidine HCl

Rantidine HCl



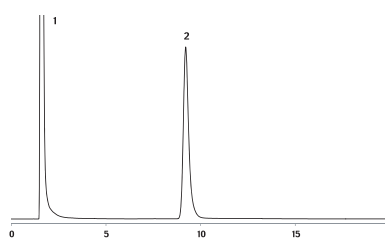
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1 M Ammonium acetate aq. / MeOH = 15 / 85
 Flow rate : 1.0 ml/min
 Detection : UV 322nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Rantidine HCl

Rasagiline



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 2g KH₂PO₄ + TEA (pH3.0) / ACN = 20 / 80
 Flow rate : 0.5 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Rasagiline

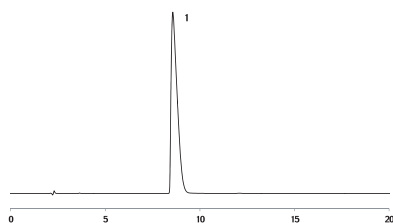
Rebamipid



Column : Hector-M C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : Buffer / MeOH / H₃PO₄ = 50 / 50 / 0.5
 (10mM Octansulfonic acid aq.)
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. DMSO(sample solvent) 2. Rebamipide

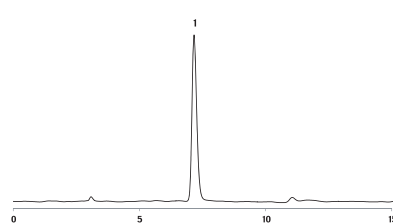
7-3. Pharmaceuticals

Solifenacin succinate



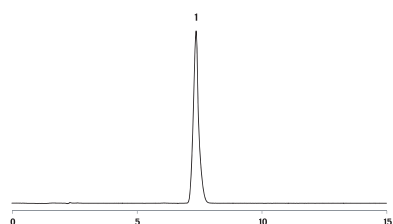
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN / TEA / TFA
 = 600 / 400 / 0.6 / 0.6
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Solifenacin succinate

Thioctic acid



Column : Hector-M PN 5 μ m
 Dimension : 260 X 4.6mm
 Mobile phase : 25mM Ammonium acetate aq. / MeOH
 = 30 / 70
 Flow rate : 1.0 ml/min
 Detection : UV 210nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Thioctic acid

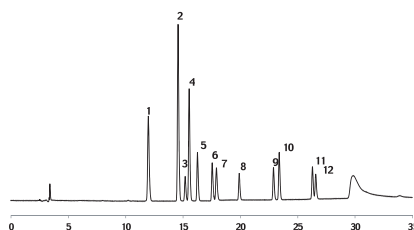
Triclosan



Column : Hector-M C18
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN = 20 / 80
 Flow rate : 1.0 ml/min
 Detection : UV 280nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Triclosan

7-4. Foods

Antiseptic



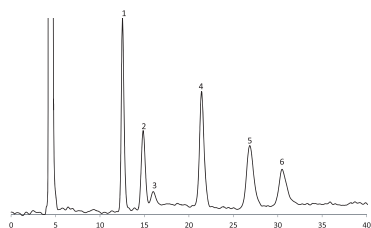
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : A: 0.1% H₃PO₄ aq. B: ACN
 Gradient :

Time	0	8	15	25	30
% B	15	25	40	60	65

Flow rate : 1.0 ml/min
 Detection : UV 220nm
 Temperature : 25 °C
 Injection Volume : 5 μ L

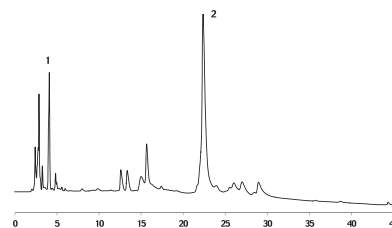
Sample : 1. Benzyl alcohol
 2. Phenoxy ethanol
 3. Sorbic acid
 4. Benzoic acid
 5. Methyl paraben
 6. Salicylic acid
 7. Dehydroacetic acid
 8. Ethyl paraben
 9. Iso-Propyl paraben
 10. Propyl paraben
 11. Iso-Butyl paraben
 12. Butyl paraben

Monosaccharides



Column: Hector-M NH2 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 75 % ACN
 Flow rate : 0.8 ml/min
 Detection : RID
 Temperature : 25 °C
 Injection Volume : 20 μ L
 Sample : 1. Fructose 2. Glucose 3. Galactose 4. Sucrose
 5. Maltose 6. Lactose

Beehoney



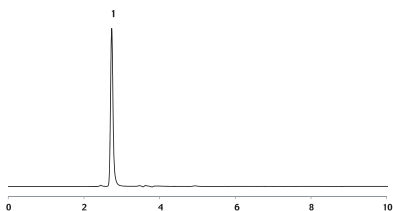
Column : Hector-M C18 5 μ m Dimension : 250 X 4.6mm
 Mobile phase : A: 0.1% TFA aq. B: ACN

Time	0	5	40	45
% B	20	20	80	80

Flow rate : 1.0 ml/min
 Detection : UV 220nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Apamine 2. Melittin

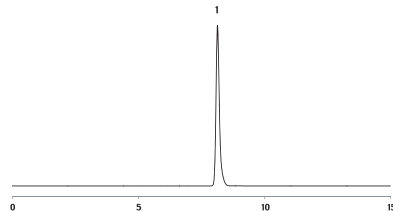
7-4. Foods

Betaine



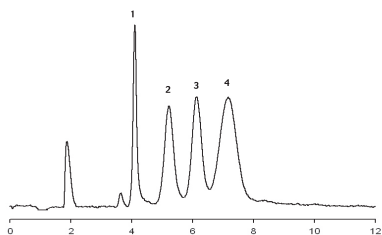
Column : Hector-M C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 70 / 30
 Flow rate : 0.5 ml/min
 Detection : UV 210nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Betaine

Bisphenol A



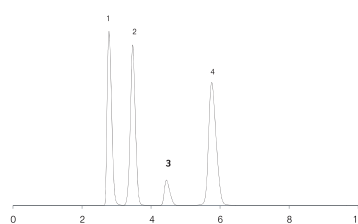
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN = 50 / 50
 Flow rate : 1.0 ml/min
 Detection : UV 270nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Bisphenol A

Carbohydrates



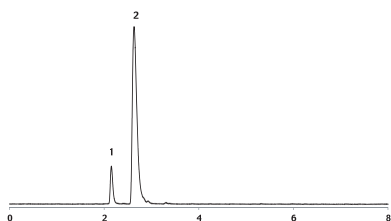
Column : Hector-M NH2 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : Water / ACN / MeOH = 20 / 70 / 10
 Flow rate : 1.0 ml/min
 Detection : ELSD, tubing temp. 90 °C, gas flow rate 2ml/min
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Ribose 2. Arabinose 3. Mannose 4. Galactose

Food Preservation



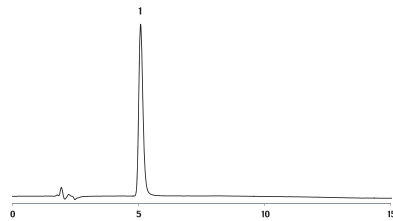
Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : MeOH / 20mM Ammonium acetate aq. = 50 / 50
 Flow rate : 1.0 ml/min
 Detection : UV 230nm
 Temperature : 25 °C
 Injection Volume : 5 μ L
 Sample : 1. Benzoic acid 2. 4-Chloro benzoic acid
 3. Caffein 4. Benzaldehyde

L-Carnitine



Column : Hector-M C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : 25mM Ammonium acetate aq. / ACN = 70 / 30
 Flow rate : 0.8 ml/min
 Detection : ELSD (80 °C, N₂ 2.0ml/min)
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Unknown 2. L-carnitine

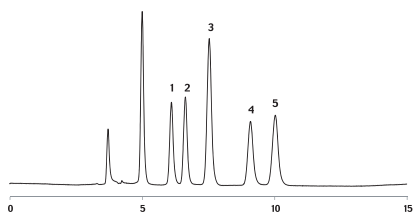
Maltitol



Column : Hector-M NH2 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN = 40 / 60
 Flow rate : 1.5 ml/min
 Detection : RID
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Maltitol

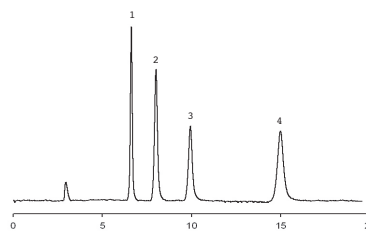
7-4. Foods

Organic acid

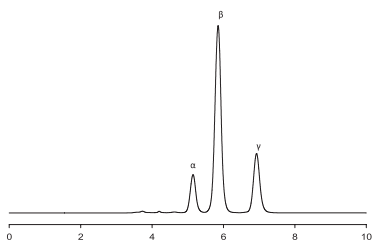


Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 20 mM KH₂PO₄ & K₂HPO₄ aq. / MeOH = 90 / 10
 Flow rate : 0.7ml/min
 Detection : UV 210nm
 Temperature : 25 °C
 Injection Volume : 5 μ L
 Sample : 1. Lactic acid 2. Acetic acid 3. Citric acid
 4. Succinic acid 5. Malic acid

Sugar alcohols

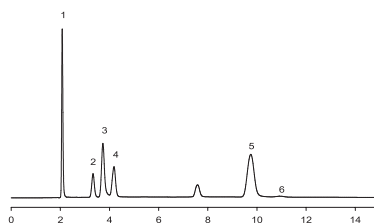


Column : Hector-M NH2 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN = 30 / 70
 Flow rate : 1.0 ml/min
 Detection : ELSD, tubing temp. 90 °C, gas flow rate 2ml/min
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. iso-erythritol 2. D(+)-arabitol
 3. galacitol 4. Matitol

DL-Tocopherol mixture, natural (α , β , γ)

Column : Hector-M Sil 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : Hexane / IPA = 98 / 2
 Flow rate : 0.5 ml/min
 Detection : UV 295nm
 Temperature : 25 °C
 Injection Volume : 10 μ L

Vitamin



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : A: 20 mM KH₂PO₄ (pH 2.5) B: MeOH

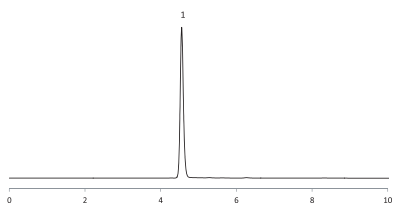
Time	1	3	5
% B	5	6	12

Flow rate : 1.0 ml/min
 Detection : UV 220nm
 Temperature : 25 °C
 Injection Volume : 5 μ L

Sample : 1. Thiamine Hydrochloride
 2. Pyridoxal Hydrochloride
 3. Niacinamide
 4. Pyridoxine Hydrochloride
 5. p-Aminobenzoic acid
 6. d-Pantothenic acid

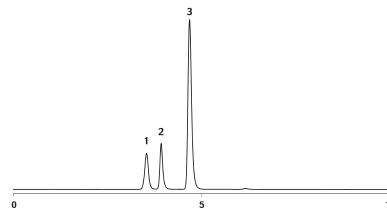
7-5. Others

3-hydroxy benzoic acid



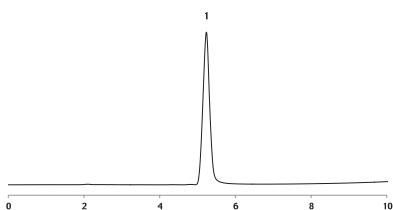
Column : Hector M PN 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1 % H₃PO₄ aq. / ACN = 60 / 40
 Flow rate : 0.7 ml/min
 Detection : UV 225nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. 3-hydroxy benzoic acid

Aniline 외 2종



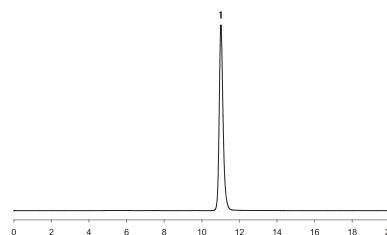
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 60 / 40
 Flow rate : 1.0 ml/min
 Detection : UV 230nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. 1-phenyl-1H pyrrole-2,5 dione 2. Aniline
 3. 4-oxo-4-(Phenylamino) but-2-enoic acid

Allantoin



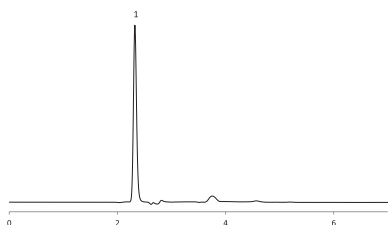
Column : Hector-M NH2 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 30 / 70
 Flow rate : 1.2 ml/min
 Detection : UV 210nm
 Temperature : 4 °C
 Injection Volume : 10 μ L
 Sample : 1. Allantoin

Pirfenidone



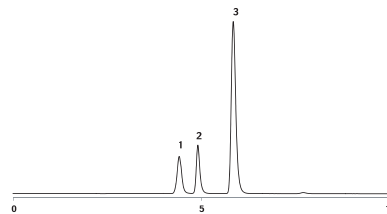
Column : Hector-M PN 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 13.8g Monobasic sodium phosphate + 2.5mL
 H₃PO₄ / 1 L aq. (pH2.4) / MeOH = 50 / 50
 Flow rate : 1.0 ml/min
 Detection : UV 317nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Pirfenidone

D-Glucuronic acid



Column : Hector-A C18 5 μ m
 Dimension : 250 X 4.6 mm
 Mobile Phase : 20 mM KH₂PO₄ / ACN = 80 / 20
 Flow rate : 1.0 mL/min
 Detection : UV 210 nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. D-Glucuronic acid

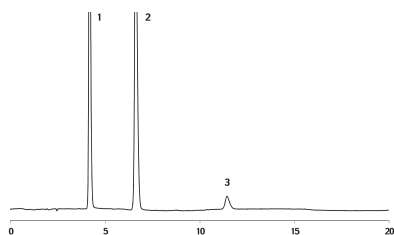
Aniline 외 2종



Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1 % H₃PO₄ aq. / ACN = 60 / 40
 Flow rate : 1.0 ml/min
 Detection : UV 230nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. 1-phenyl-1H pyrrole-2,5 dione 2. Aniline
 3. 4-oxo-4-(Phenylamino) but-2-enoic acid

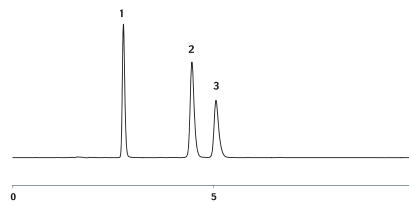
7-5. Others

Formaldehyde



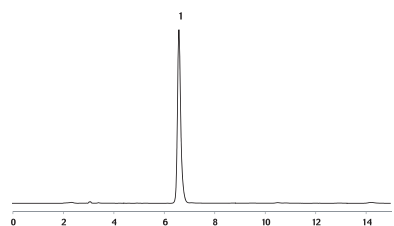
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN = 40 / 60
 Flow rate : 1.0 ml/min
 Detection : UV 354nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. unknown 2. Formaldehyd 3. Acetone

Azoxystrobine & Fenhexamide



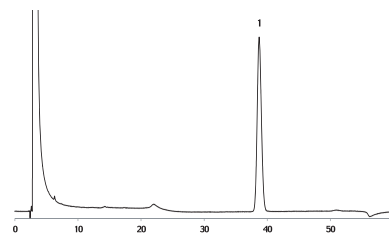
Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN = 25 / 75
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Unknown 2. Azoxystrobine 3. Fenhexamide

Baicalin



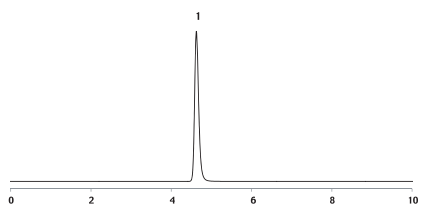
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : H₃PO₄ aq. (1 \rightarrow 145) / ACN = 720 / 280
 Flow rate : 1.0 ml/min
 Detection : UV 277nm
 Temperature : 50 °C
 Injection Volume : 10 μ L
 Sample : 1. Baicalin

Biotine (Vitamié B7)



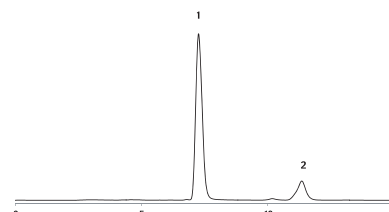
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 915 / 85
 Flow rate : 1.0 ml/min
 Detection : UV 200nm
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Biotine

Bisphenol A



Column : Hector-M C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : Water / ACN = 50 / 50
 Flow rate : 1.0 ml/min
 Detection : UV 270nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Bisphenol A

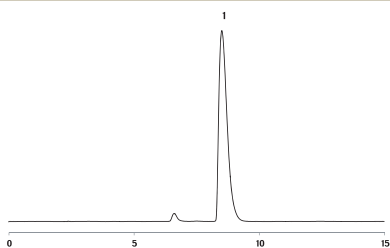
Chenodecyccholic acid



Column : Hector-T C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 50 / 50
 Flow rate : 1.0 ml/min
 Detection : UV 220nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Chenodecyccholic acid 2. Unknown

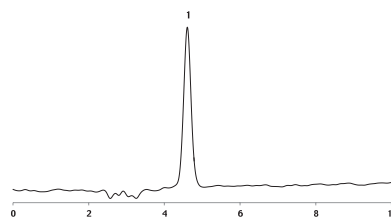
7-5. Others

Chlorobenzoic acid



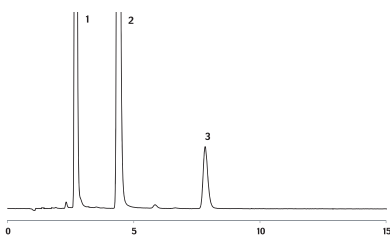
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 0.1 % Acetic acid aq. / MeOH = 70 / 30
 Flow rate : 1.0 ml/min
 Detection : UV 230nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. DPG-K2

Cholic acid



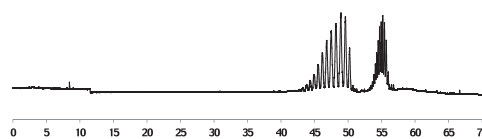
Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : 10mM Ammonium acetate aq. (pH4.0) / ACN = 30 / 70
 Flow rate : 1.0 ml/min
 Detection : RID
 Temperature : 40 °C
 Injection Volume : 10 μ L
 Sample : 1. Cholic acid

Formaldehyde



Column : Hector-M C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : Water / ACN = 40 / 60
 Flow rate : 1.0 ml/min
 Detection : UV 354nm
 Temperature : 30 °C
 Injection Volume : 10 μ L
 Sample : 1. Unknown 2. Formaldehyde 3. Acetone

LA-7

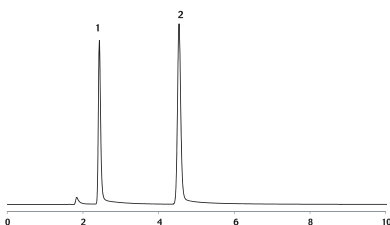


Column : Hector-M C18 5 μ m Dimension : 150 X 4.6mm
 Mobile phase : A: Ammonium acetate B: ACN C: THF

Time	0	18	35	45	50	55	60	70
% B	45	54	60	68	70	70	45	45
% C	0	0	5	5	20	20	0	0

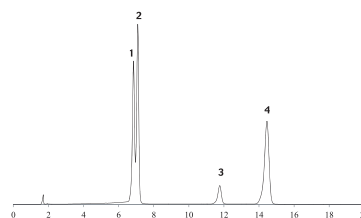
Flow rate : 0.6 ml/min
 Detection : ELSD (115 °C, N₂: 2.0ml/min)
 Temperature : 30 °C Injection Volume : 10 μ L

MI & CMIT



Column : Hector-T C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : 0.1% H₃PO₄ aq. / ACN = 75 / 25
 Flow rate : 1.0 ml/min
 Detection : UV 260nm
 Temperature : 30 °C
 Injection Volume : 1 μ L
 Sample : 1. Methylisothiazolinone(MI)
 2. MethylChloroisothiazolinone(CMIT)

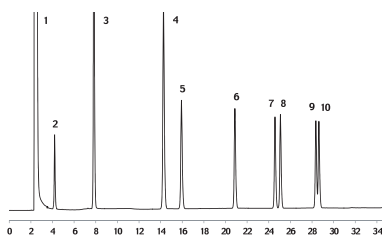
Nitrobenzaldehyde



Column : Hector-M C18 5 μ m
 Dimension : 250 X 4.6mm
 Mobile phase : Water / ACN = 20 / 80
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 25 °C
 Injection Volume : 5 μ L
 Sample : 1. 4-nitrobenzenesulfonyl chloride
 2. 4-nitrobenzaldehyde 3. 3-nitrobenzaldehyde
 4. 2-nitrobenzenesulfonyl chloride

7-5. Others

MI & CMIT & Paraben

Column : Hector-T C18 5 μ m

Dimension : 250 X 4.6mm

Mobile phase : A: 0.1% H₃PO₄ aq. B: ACN

Gradient :

Time	0	2	8	15	30
% B	10	20	25	35	65

Flow rate : 1.0 ml/min

Detection : UV 220nm

Temperature : 35 °C

Injection Volume : 10 μ L

Sample : 1. Sample solvent

2. MI

3. CMIT

4. Phenoxy ethanol

5. Methyl paraben

6. Ethyl paraben

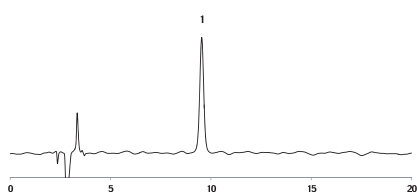
7. Iso-Propyl paraben

8. Propyl paraben

9. Iso-Butyl paraben

10. Butyl paraben

Novaluron

Column : Hector-M PN 5 μ m

Dimension : 250 X 4.6mm

Mobile phase : 0.1% H₃PO₄ aq. / ACN = 20 / 80

Flow rate : 1.0 ml/min

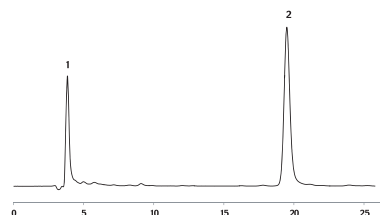
Detection : UV 254nm

Temperature : 25 °C

Injection Volume : 10 μ L

Sample : 1. Novaluron

Oleanic acid

Column : Hector-M C8 5 μ m

Dimension : 250 X 3.0mm

Mobile phase : ACN / H₃PO₄ (pH2.3) = 75 / 25

Flow rate : 1.0 ml/min

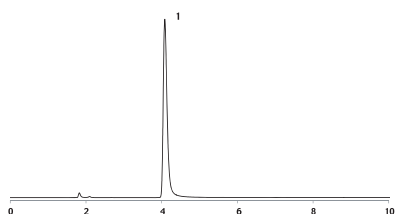
Detection : UV 206nm

Temperature : 35 °C

Injection Volume : 10 μ L

Sample : 1. Unknow 2. Oleanic acid

p-Aminophenol

Column : Hector-T C18 5 μ m

Dimension : 250 X 4.6mm

Mobile phase : 10 mM KH₂PO₄ aq. / MeOH = 90 / 10

Flow rate : 1.0 ml/min

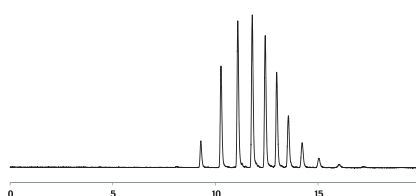
Detection : UV 210nm

Temperature : 40 °C

Injection Volume : 10 μ L

Sample : 1. p-Aminophenol

Poyl oxyethyleneglycol(PEG_400)

Column : Hector-M C18 5 μ m

Dimension : 150 X 4.6mm

Mobile phase : A: Water B: ACN

Time	0	2	10	15	20
% B	5	5	20	20	5

Flow rate : 1.0 ml/min

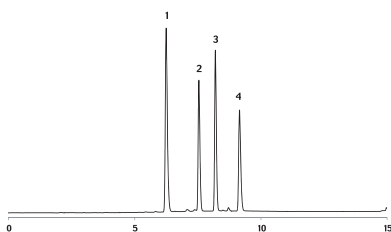
Detection : ELSD (80 °C, N₂ 1.8ml/min)

Temperature : 35 °C

Injection Volume : 10 μ L

7-5. Others

Pesticide

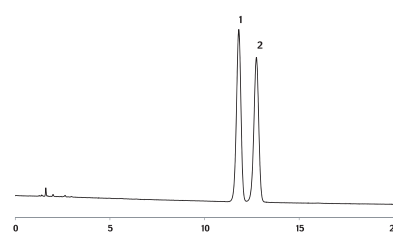


Column : Hector-T C18 5 μ m Dimension : 250 X 4.6mm
 Mobile phase : A: 0.1 % H₂PO₄ B: ACN

Time	0	5	15
% B	60	100	100

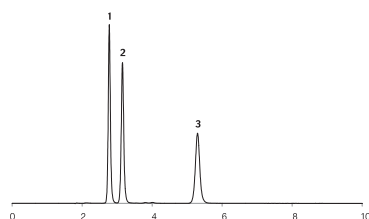
Flow rate : 0.8 ml/min Detection : UV 254nm
 Temperature : 25 °C Injection Volume : 5 μ L
 Sample : 1. Artrazine 2. Fenitrothion
 3. Parathion 4. Diazinon

Pyraclostrobin & BAS 500-3



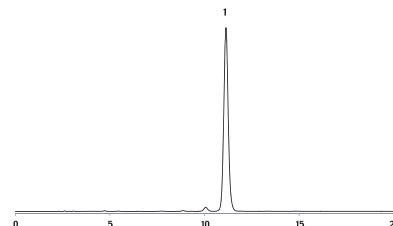
Column : Hector-M C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : 0.1% Formic acid aq. / ACN = 50 / 50
 Flow rate : 1.5 ml/min
 Detection : UV 274nm
 Temperature : 35 °C
 Injection Volume : 10 μ L
 Sample : 1. Pyraclostrobin 2. BAS 500-3

Steroid(estriol, estrone, estradiol)



Column : Hector-M Sil 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : Hexane / Ethanol = 80 / 20
 Flow rate : 1.0 ml/min
 Detection : UV 230nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. Estrone 2. Estriol 3. Estradiol

1,1,1-tris(cinnamolyxymethyl)ethane

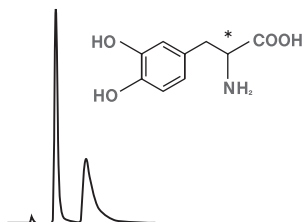


Column : Hector-M C18 5 μ m
 Dimension : 150 X 4.6mm
 Mobile phase : Water / MeOH = 10 / 90
 Flow rate : 1.0 ml/min
 Detection : UV 254nm
 Temperature : 25 °C
 Injection Volume : 10 μ L
 Sample : 1. 1,1,1-tris(cinnamolyxymethyl)ethane

7-6. Enantiomer separations-ChiroSil

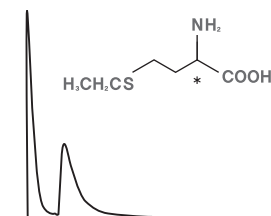
• α -Amino Acids

DL - DOPA



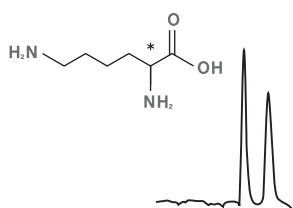
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 0.01% H₃PO₄ / MeOH = 30 / 70
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 5.5 min
 k_1 : 0.97 α : 2.30

DL - Ethionine



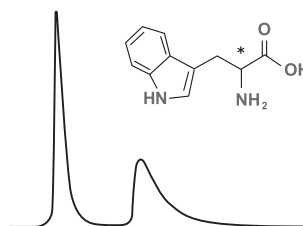
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 0.02% Acetic acid / MeOH = 25 / 75
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 6.2 min
 k_1 : 1.29 α : 2.07

DL - Lysine



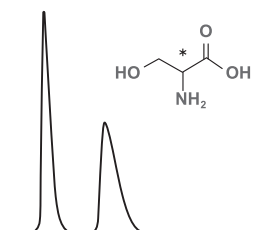
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 0.01% H₃PO₄ / MeOH = 30 / 70
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 5.3 min
 k_1 : 1.44 α : 1.48

DL - Tryptophan



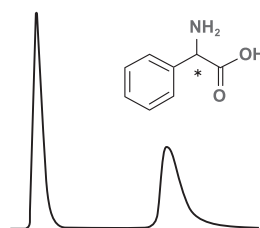
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 30 / 70
Flow Rate : 1.5 ml/min
Detection : UV 210nm
Run time : 11.0 min
 k_1 : 4.06 α : 2.15

DL - Serine



Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 5mM HClO₄ / MeOH = 16 / 84
Flow Rate : 0.8 ml/min
Detection : UV 210nm
Run time : 6.0 min
 k_1 : 1.37 α : 1.99

DL - Phenylglycine

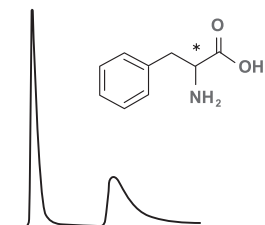


Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM H₂SO₄ and 0.1% TEA / MeOH = 30 / 70
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 13.1 min
 k_1 : 3.14 α : 2.60

7-6. Enantiomer separations-ChiroSil

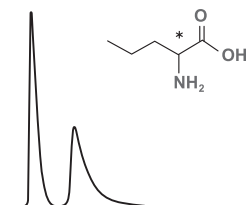
• α -Amino Acids

DL - Phenylalanine



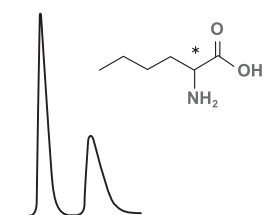
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 30 / 70
Flow Rate : 1.5 ml/min
Detection : UV 210nm
Run time : 8.9 min
 k_1 : 2.66 α : 2.57

DL - Norvaline



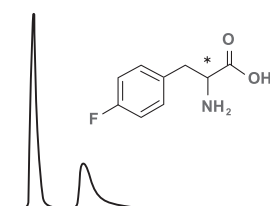
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 55 / 45
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 5.3 min
 k_1 : 1.15 α : 1.79

DL - Norleucine



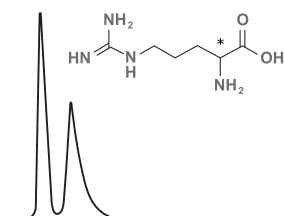
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 55 / 45
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 5.6 min
 k_1 : 1.28 α : 1.75

DL-4-Fluorophenylalanine



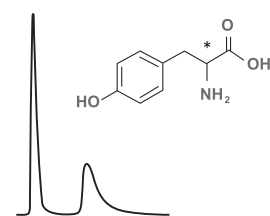
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 30 / 70
Flow Rate : 1.5 ml/min
Detection : UV 210nm
Run time : 9.6 min
 k_1 : 2.92 α : 2.56

DL - Arginine



Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM H₂SO₄ / MeOH = 16 / 84
Flow Rate : 0.8 ml/min
Detection : UV 210nm
Run time : 4.9 min
 k_1 : 1.21 α : 1.64

DL - Tyrosine

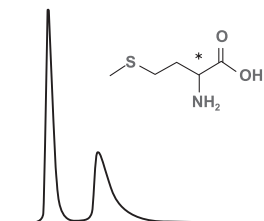


Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 30 / 70
Flow Rate : 1.5 ml/min
Detection : UV 210nm
Run time : 9.1 min
 k_1 : 2.95 α : 2.38

7-6. Enantiomer separations-ChiroSil

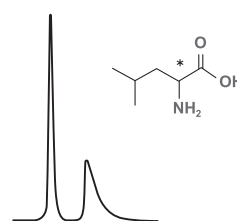
• α -Amino Acids

DL - Methionine



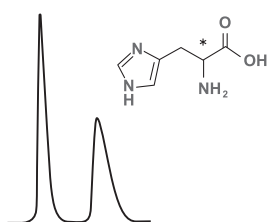
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 55 / 45
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 7.5 min
 k_1 : 1.64 α : 2.04

DL - Leucine



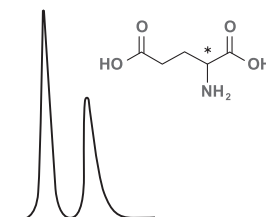
Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 55 / 45
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 5.5 min
 k_1 : 1.03 α : 2.14

DL - Histidine



Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 10mM Acetic acid / MeOH = 55 / 45
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 26.0 min
 k_1 : 10.96 α : 1.27

DL - Glutamic Acid



Column : ChiroSil RCA(+) or SCA(-)
150 X 4.6mm
Mobile Phase : 0.05% H₃PO₄ / MeOH = 35 / 65
Flow Rate : 1.0 ml/min
Detection : UV 210nm
Run time : 4.5 min
 k_1 : 0.71 α : 2.27


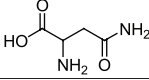
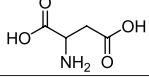
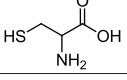
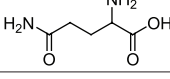


DL - Thyroxine^[8]



Column: ChiroSil Type
Mobile phase: 5mM H₂SO₄ / MeOH = 20 / 80
Flow rate: 0.5 ml/min
Detection: 210 nm UV
Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

• Other α -Amino Acids[1]

α -Amino Acids	Structure	k_1	α	R_S
Alanine		1.37	1.28	1.33
Asparagine		1.31	1.10	0.63
Aspartic acid		1.51	1.22	1.25
Cysteine		1.32	1.10	0.30
Glutamine		1.31	1.32	1.72
Threonine		0.24	1.42	1.30
Valine		0.40	1.31	1.14

Condition

Column: ChiroSil Type

Mobile phase: 10mM H₂SO₄ / MeOH = 20 / 80

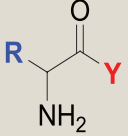
Flow rate: 0.5 ml/min

Detection: 210 nm UV

Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

• α -Amino amides and esters^[1]

		k_1	α	R_s
R	Y			
CH ₃	NH(CH ₂) ₃ CH ₃	1.60	1.41	2.34
	NHC(CH ₃) ₃	1.39	1.42	2.32
	NHCH ₂ C ₆ H ₅	2.58	1.38	2.33
	OCH ₃	1.36	1.10	0.48
CH(CH ₃) ₂	NH(CH ₂) ₃ CH ₃	0.28	1.64	1.32
	NHC(CH ₃) ₃	0.25	1.59	1.11
	NHCH ₂ C ₆ H ₅	0.46	1.48	1.50
	OCH ₂ CH ₃	0.39	1.33	0.80
CH ₂ CH(CH ₃) ₂	NH(CH ₂) ₂ CH ₃	1.07	2.48	8.15
	NH(CH ₂) ₃ CH ₃	1.03	2.71	8.30
	N(CH ₂ CH ₃) ₂	0.42	1.24	0.94
CH ₂ C ₆ H ₅	NH(CH ₂) ₂ CH ₃	1.94	2.45	6.99
	NHC(CH ₃) ₃	2.06	2.28	7.36
C ₆ H ₅	NH(CH ₂) ₂ CH ₃	1.55	2.46	7.27
	NHC(CH ₃) ₃	1.28	2.67	6.32
	N(CH ₂ CH ₃) ₂	1.40	3.15	9.77
	OCH ₃	2.10	2.09	6.85
4-CH ₃ O-C ₆ H ₅	NHCH ₃	1.73	2.39	8.63
	NH(CH ₂) ₂ CH ₃	1.59	2.43	7.27
	NHC(CH ₃) ₃	1.35	2.62	7.47

Condition

Column: ChiroSil Type

Mobile phase: 10mM H₂SO₄ / MeOH = 20 / 80

Flow rate: 0.5 ml/min

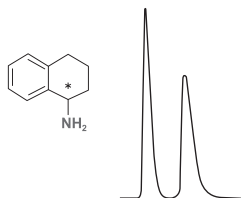
Detection: 210 nm UV

Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

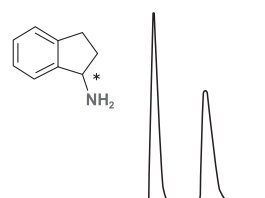
• Amines^[2] [10]

1,2,3,4-Tetrahydro-1-naphthylamine



Column : ChiroSil RCA(+) or SCA(-)
 150 X 4.6mm
 Mobile Phase : 10mM H₂SO₄ and 0.1% TEA / MeOH = 16 / 84
 Flow Rate : 1.0 ml/min
 Detection : UV 210nm
 Run time : 3.5 min
 k_1 : 0.82 α : 1.76

1-Aminoindan



Column : ChiroSil RCA(+) or SCA(-)
 150 X 4.6mm
 Mobile Phase : 10mM H₂SO₄ and 0.1% TEA / MeOH = 16 / 84
 Flow Rate : 1.0 ml/min
 Detection : UV 210nm
 Run time : 4.8 min
 k_1 : 1.44 α : 1.91

Amines	k_1	α	R _s	Condition
	2.45	1.10	0.80	A
	1.90	1.28	2.57	A
	1.38	1.84	5.23	A
	2.86	1.11	1.05	A
	1.40	1.11	1.02	A
	0.42	1.22	0.82	B
	0.41	1.11	0.38	B
	0.51	1.39	1.69	A
	5.21	3.46	12.00	A

Condition A

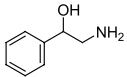
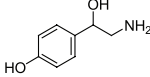
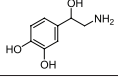
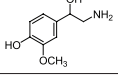
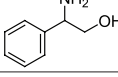
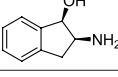
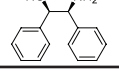
Column: ChiroSil Type
 Mobile phase: 10mM H₂SO₄ / MeOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

Condition B

Column: ChiroSil Type
 Mobile phase: 10mM H₂SO₄ / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

• Amino Alcohols^{[2] [10]}

Amino Alcohols	Structure	k_1	α	R_S	Condition
2-amino-1-phenylethanol		1.10	1.40	1.52	B
4-(2-amino-1-hydroxyethyl)phenol		0.92	1.19	1.41	B
4-(2-amino-1-hydroxyethyl)benzene -1,2-diol		0.90	1.15	1.00	B
4-(2-amino-1-hydroxyethyl)-2- methoxyphenol		1.25	1.18	1.23	B
2-amino-2-phenylethanol		1.44 (S)	1.35	2.18	A
2-amino-2,3-dihydro-1H-inden-1-ol		1.98 (1R, 2S)	1.78	0.80	A
2-amino-1,2-diphenylethanol		0.29 (1S, 2R)	1.53	1.48	C

Condition A

Column: ChiroSil Type
 Mobile phase: 10mM H₂SO₄
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

Condition B

Column: ChiroSil Type
 Mobile phase: 10mM H₂SO₄ / MeOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

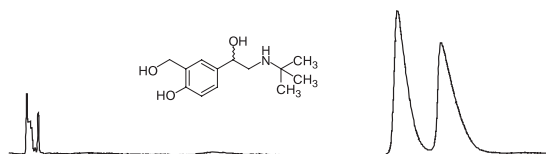
Condition C

Column: ChiroSil Type
 Mobile phase: 10mM H₂SO₄ / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

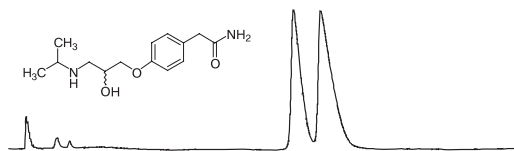
• β -Blockers^[9]

Albuterol



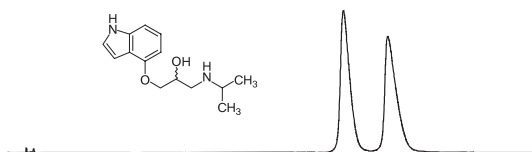
Column: ChiroSil Type
 Mobile phase: Acetic acid / TEA / MeOH / ACN
 = 0.1 / 0.1 / 50 / 50
 Flow rate: 1 ml/min
 Detection: 260 nm UV
 Temperature: 20 °C
 k_1 : 21.34 α : 1.2

Atenolol



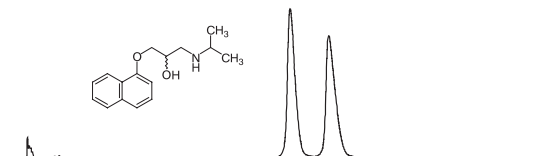
Column: ChiroSil Type
 Mobile phase: Acetic acid / TEA / MeOH / ACN
 = 0.1 / 0.1 / 50 / 50
 Flow rate: 1 ml/min
 Detection: 260 nm UV
 Temperature: 20 °C
 k_1 : 15.86 α : 1.10

Pindolol



Column: ChiroSil Type
 Mobile phase: Acetic acid / TEA / MeOH / ACN
 = 0.1 / 0.1 / 50 / 50
 Flow rate: 1 ml/min
 Detection: 260 nm UV
 Temperature: 20 °C
 k_1 : 18.99 α : 1.14

Propranolol



Column: ChiroSil Type
 Mobile phase: Acetic acid / TEA / MeOH / ACN
 = 0.1 / 0.1 / 50 / 50
 Flow rate: 1 ml/min
 Detection: 260 nm UV
 Temperature: 20 °C
 k_1 : 15.16 α : 1.15

7-6. Enantiomer separations-ChiroSil

Other β -Blockers^[19]

β -Blockers	Structure	k_1	α	R_S
Alprenolol		29.35	1.26	2.12
Oxprenolol		24.61	1.22	2.29
Acebutolol		45.60	1.29	2.90
Bambuterol		22.52	1.85	4.21
Clenbuterol		53.61	1.59	4.37
Clenpropol		48.61	1.13	1.58
Fumoterol		98.08	1.23	1.36
Mabuterol		43.07	1.64	5.79

Condition

Column: ChiroSil Type

Mobile phase: TFA / TEA / EtOH / ACN = 0.1 / 0.5 / 20 / 80

Flow rate: 1 mL/min

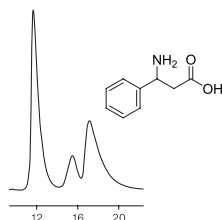
Detection: 260 nm UV

Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

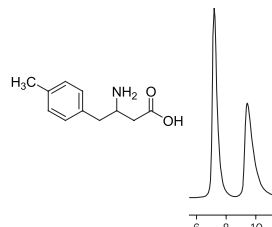
• β -Blockers Acids^[6]

3-amino-3-phenylpropanoic acid



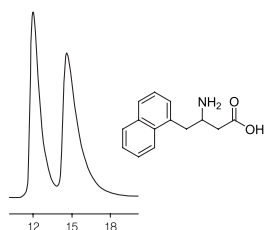
Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20°C
 k_1 : 3.60 α : 102

3-amino-4-(4-methylphenyl)butanoic acid



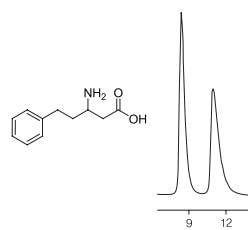
Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20°C
 k_1 : 1.26 α : 1.40

3-amino-4-(1-naphthyl)butanoic acid



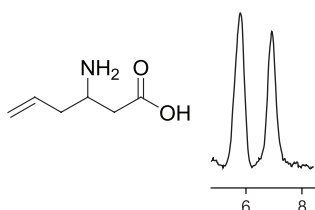
Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20°C
 k_1 : 3.72 α : 1.28

3-amino-5-phenylpentanoic acid



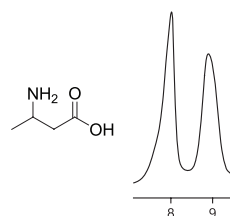
Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20°C
 k_1 : 2.30 α : 1.44

3-amino-5-hexenoic acid



Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20°C
 k_1 : 1.02 α : 1.37

3-aminobutyric acid

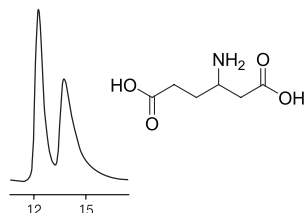


Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20°C
 k_1 : 2.16 α : 1.16

7-6. Enantiomer separations-ChiroSil

• β -Blockers Acids^[6]

3-aminoadipic acid



Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C
 k_1 : 3.83 α : 1.16

• Other β -Amino Acids^[11]

β -Blockers	Structure	k_1	α	R_S
3-amino-4-(2-furyl)butyric acid		1.33	1.33	1.66
3-amino-4-(2-naphthyl)butyric acid		2.38	1.53	2.07
3-amino-4,4-diphenylbutyric acid		0.67	1.34	1.38

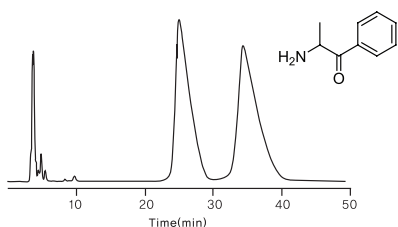
Condition

Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

• Aryl α -Amino Ketones^[15]

Cathinone



Column: ChiroSil Type
 Mobile phase: 10mM Acetic acid / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C
 k_1 : 3.83 α : 1.16

		k_1	α	R_S
Ar	R			
C ₆ H ₅	CH(CH ₃) ₂	0.11	2.12	2.13
C ₆ H ₅	CH ₂ CH(CH ₃) ₂	0.34	1.95	3.11
C ₆ H ₅	CH ₂ CH ₂ SCH ₃	0.84	1.57	2.29
C ₆ H ₅	CH ₂ C ₆ H ₅	1.03	1.55	3.55
4-CH ₃ C ₆ H ₄	CH ₃	1.22	1.55	2.80
4-CH ₃ C ₆ H ₄	CH(CH ₃) ₂	0.16	2.08	1.89
4-CH ₃ C ₆ H ₄	CH ₂ CH(CH ₃) ₂	0.31	1.99	2.88
4-CH ₃ C ₆ H ₄	CH ₂ CH ₂ SCH ₃	0.78	1.65	2.98
4-CH ₃ C ₆ H ₄	CH ₂ C ₆ H ₅	0.86	1.58	3.09
1-Naphthyl	CH(CH ₃) ₂	0.25	2.20	3.87
2-Naphthyl	CH(CH ₃) ₂	0.26	2.19	3.77

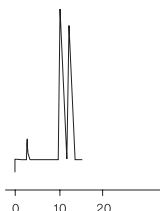
Condition

Column: ChiroSil Type
 Mobile phase: 10mM H₂SO₄ / EtOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

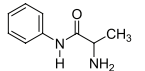
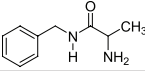
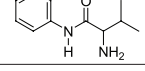
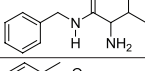
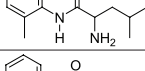
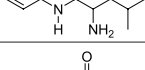
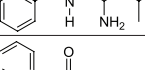
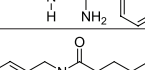
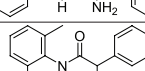
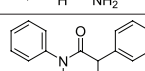
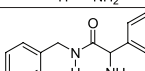

7-6. Enantiomer separations-ChiroSil

• Tocainide's Analogues

Tocainide



Column: ChiroSil Type
 Mobile phase: 5mM H₂SO₄ / MeOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

Tocainide's Analogue	Structure	k_1	α	R _S
2-amino-N-phenylpropanamide		1.82	1.73	2.52
2-amino-N-benzylpropanamide		1.38	1.44	2.10
2-amino-3-methyl-N-phenylbutanamide		0.34	2.10	2.56
2-amino-N-benzyl-3-methylbutanamide		0.30	1.42	1.00
2-amino-4-methyl-N-(2,6-dimethylphenyl)pentanamide		0.25	1.17	0.25
2-amino-4-methyl-N-phenylpentanamide		1.35	5.00	4.00
2-amino-N-benzyl-4-methylpentanamide		1.07	2.39	5.50
2-amino-N,3-diphenylpropanamide		2.29	3.72	5.33
2-amino-N-benzyl-3-phenylpropanamide		2.08	2.19	3.29
2-amino-N-(2,6-dimethylphenyl)-2-phenylacetamide		1.49	2.05	3.52
2-amino-N,2-diphenylacetamide		1.55	3.50	5.50
2-amino-N-benzyl-2-phenylacetamide		1.60	2.58	4.89

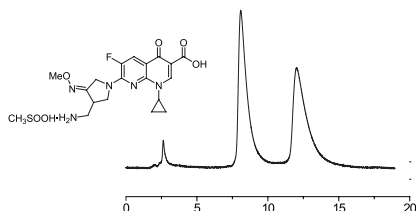
Condition

Column: ChiroSil Type
 Mobile phase: 10mM H₂SO₄ / MeOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 210 nm UV
 Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

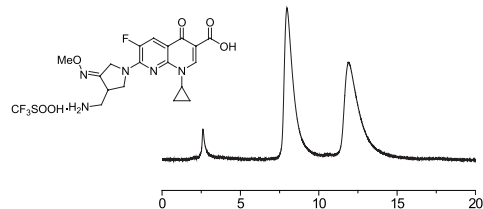
• Gemifloxacin^[7]

Gemifloxacin mesylate



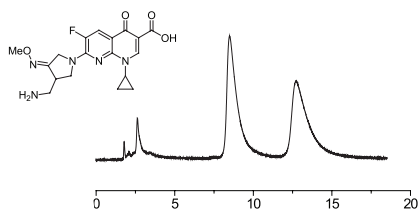
Column: ChiroSil Type
 Mobile phase: 10mM HClO₄ / MeOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 254 nm UV
 Temperature: 20 °C
 k_1 : 3.55 α : 1.62

Gemifloxacin triflate



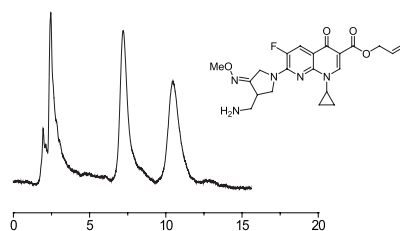
Column: ChiroSil Type
 Mobile phase: 10mM HClO₄ / MeOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 254 nm UV
 Temperature: 20 °C
 k_1 : 3.49 α : 1.63

Free form of Gemifloxacin



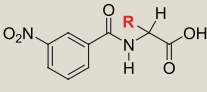
Column: ChiroSil Type
 Mobile phase: 10mM HClO₄ / MeOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 254 nm UV
 Temperature: 20 °C
 k_1 : 3.78 α : 1.63

Allyl ester of Gemifloxacin



Column: ChiroSil Type
 Mobile phase: 10mM HClO₄ / MeOH = 20 / 80
 Flow rate: 0.5 ml/min
 Detection: 254 nm UV
 Temperature: 20 °C
 k_1 : 3.05 α : 1.60

• N-benzyl- α -Amino Acids^[18]

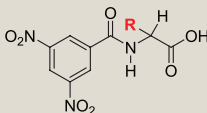
	k_1	α	R_S
R			
(CH ₃) ₂ CH	3.35	1.11	0.41
(CH ₃) ₂ CHCH ₂	3.68	1.14	0.55

Condition

Column: ChiroSil Type
 Mobile phase: Acetic acid / TEA / ACN = 0.05 / 0.25 / 100
 Flow rate: 0.5 ml/min
 Detection: 254 nm UV
 Temperature: 20 °C

7-6. Enantiomer separations-ChiroSil

• N-(3, 5-dinitrobenzoyl)- α -Amino Acid^[18]

	k_f	α	R_S
R			
CH ₃	6.81	1.20	0.76
(CH ₃) ₂ CH	3.22	1.81	2.81
(CH ₃) ₂ CHCH ₂	4.56	1.57	2.01
C ₆ H ₅	3.56	1.47	1.49
C ₆ H ₅ CH ₂	5.11	1.61	1.78
HOCH ₂	21.25	1.06	0.54
CH ₃ (OH)CH	8.85	1.23	0.74
4-OH-C ₆ H ₄ CH ₂	36.20	1.27	0.73

Condition

Column: ChiroSil Type

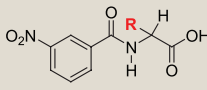
Mobile phase: Acetic acid / TEA / ACN = 0.05 / 0.25 / 100

Flow rate: 0.5 ml/min

Detection: 254 nm UV

Temperature: 20 °C

• N-(3-dinitrobenzoyl)- α -Amino Acids^[18]

	k_f	α	R_S
R			
CH ₃	5.71	1.14	0.60
(CH ₃) ₂ CH	3.06	1.46	1.40
(CH ₃) ₂ CHCH ₂	4.26	1.45	1.68
C ₆ H ₅	2.86	1.25	0.97

Condition

Column: ChiroSil Type

Mobile phase: Acetic acid / TEA / ACN = 0.05 / 0.25 / 100

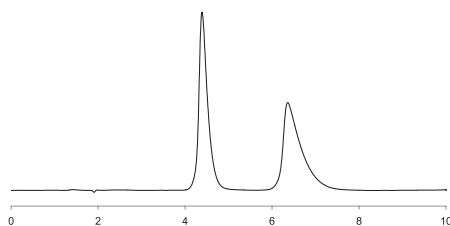
Flow rate: 0.5 ml/min

Detection: 254 nm UV

Temperature: 20 °C

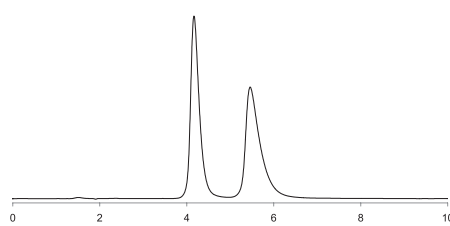
7-7. Enantiomer separations-ChiroSil ME

DL-Methionine



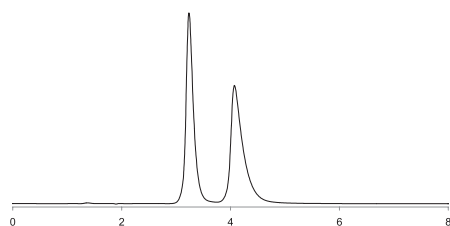
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 1.32 α : 1.79

DL-DOPA



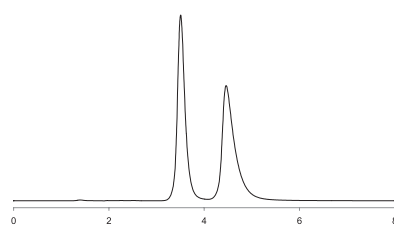
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 1.20 α : 1.57

DL-Phenylalanine



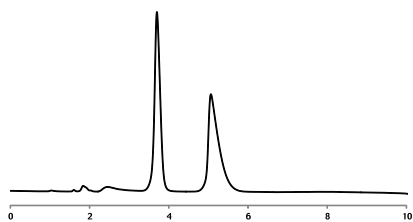
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 0.71 α : 1.62

DL-Tryptophane



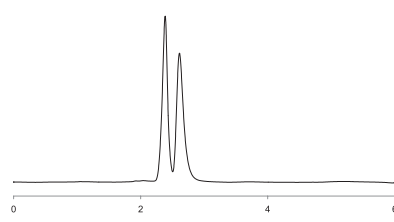
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 0.86 α : 1.59

DL-Norvaline



Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 10 mM Acetic acid / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 1.01 α : 1.73

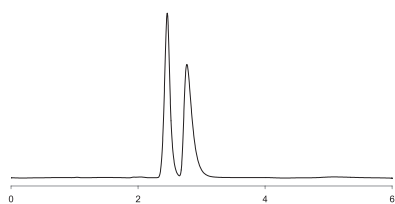
DL-Leucine



Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 10mM Acetic acid / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 0.14 α : 1.79

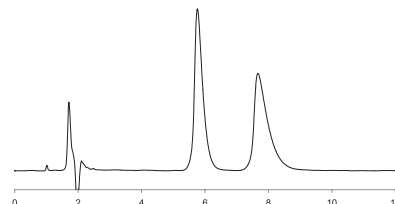
7-7. Enantiomer separations-ChiroSil ME

DL-Norleucine



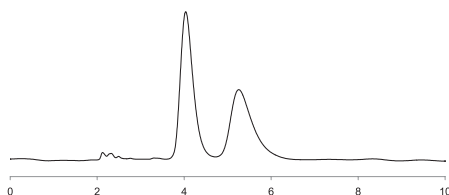
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 10mM Acetic acid / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 0.17 α : 1.86

DL-Tryosine



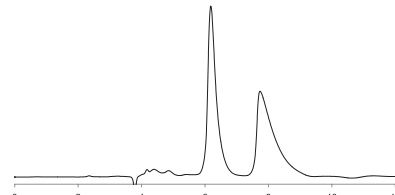
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃POP₂ / MeOH = 15 / 85
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 40°C
 k' : 1.91 α : 1.51

DL-Arginine



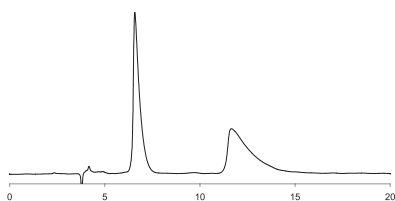
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 5mM HClO₄ / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: UV 210nm
 Temperature: 10°C
 k' : 0.66 α : 1.40

DL-Alanine



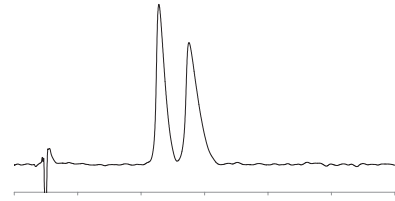
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 5mM HClO₄ / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 0.63 α : 1.65 R_s : 3.96

DL-Serine



Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 5mM HClO₄ / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 0.74 α : 2.82 R_s : 5.87

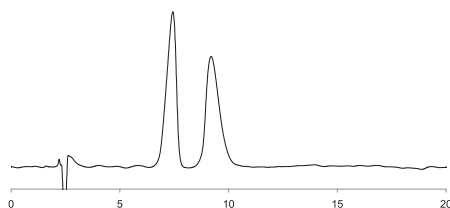
DL-Asparagine



Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 5mM H₂SO₄ / MeOH = 20 / 80
 Flow rate: 0.8 ml/min
 Detection: UV 210nm
 Temperature: 25°C
 k' : 3.63 α : 1.22

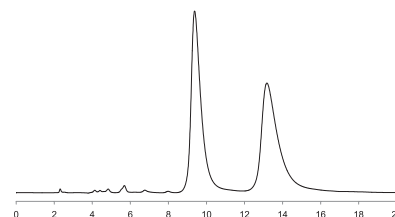
7-7. Enantiomer separations-ChiroSil ME

DL-Valine



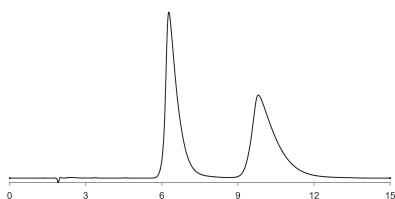
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 5mM H₂SO₄ / MeOH = 20 / 80
 Flow rate: 0.8 ml/min
 Detection: UV 210nm
 Temperature: 25°C
 k' : 2.02 α : 1.35

DL-Threonine



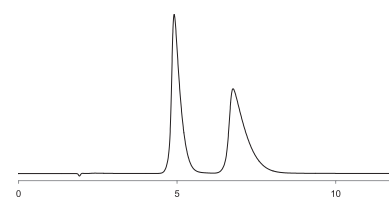
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 5mM HClO₄ / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 1.47 α : 1.68 R_s : 5.45

DL-Homophenylalanine



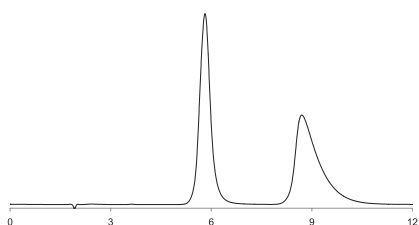
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 2.27 α : 1.81

DL-4 - Chloro - phenylalanine



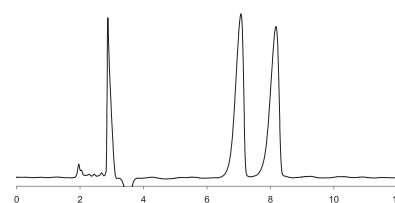
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 40 / 60
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 40°C
 k' : 0.78 α : 1.58

DL-Pyridylalanine



Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 2.03 α : 1.74

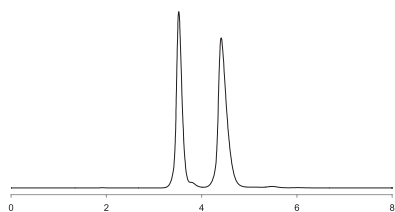
DL-Penicillamine



Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 10mM H₂SO₄ / ACN = 10 / 90
 Flow rate: 0.8 ml/min
 Detection: UV 210nm
 Temperature: 15°C

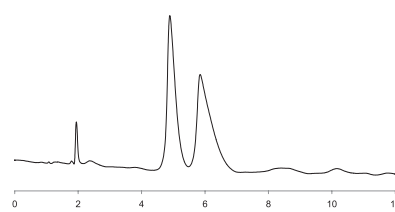
7-7. Enantiomer separations-ChiroSil ME

DL-4 - Nitro - Phenylalanine



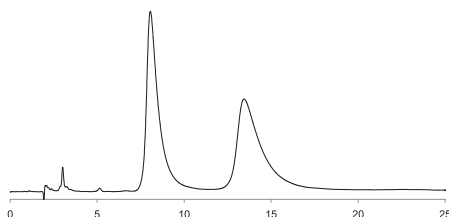
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 40 / 60
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 40°C
 k' : 1.91 α : 1.51

DL-Homo - Serine



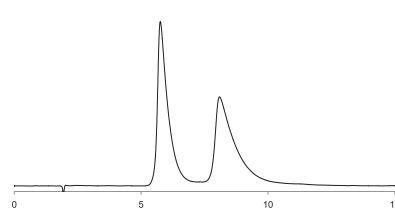
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 20°C
 k' : 1.51 α : 1.32

DL-BPA



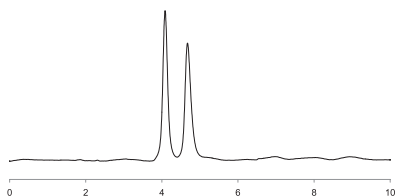
Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 0°C
 k' : 3.14 α : 1.88

DL-Thienylalnine



Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 0.01% H₃PO₄ / MeOH = 30 / 70
 Flow rate: 1.0 ml/min
 Detection: UV 210nm
 Temperature: 0°C
 k' : 1.96 α : 1.61

DL-Naphtylalnine



Column: ChiroSil ME NF RCA(+) 5 μ m
 Dimension: 150 X 4.6mm
 Mobile phase: 5mM HClO₄ / MeOH = 50 / 50
 Flow rate: 0.5 ml/min
 Detection: UV 210nm
 Temperature: 10°C
 k' : 0.08 α : 2.99