High Performance Liquid Chromatography

PRODUCTS CATALOG

SHINWA CHEMICAL INDUSTRIES LTD.

High performance liquid chromatography is a necessary method in the analytical separation. To perform high quality analysis, the new analytical method and devices including detector have been investigated by the effort of many chromatographer. The high performance analysis came to be achieved as a result.

SHINWA CHEMICAL INDUSTRIES LTD. offer the customer the column with excellent separation and reproducibility anytime and anywhere; ULTRON columns have made an effort doing a severe quality control through the production process.

The series of ULTRON are high quality controlled HPLC columns.

In order to satisfy your analytical requirement, we have many columns.

1) **ULTRON ES** series are columns for enantiomer separation in the field of medicine and so on.
2) **ULTRON VX** series are columns based on silica material for reversed- and normal-phase chromatography.
3) **ULTRON PS** series are polymer based columns for the analysis of food and so on.

The **STR** columns are packed with perfect spherical and pure silica synthesized finely. The **STR** series show excellent column performance and reproducibility in the separation for various samples.

Separation Mode	Column	Application
Chiral Separation Chromatography	**ULTRON ES-OVM**	**Optical Isomers of Medicines, Pesticides**
	ULTRON ES-PEPSIN	
	ULTRON ES-BSA	
	ULTRON ES-CD	
	ULTRON ES-PhCD	
Ion Exclusion Chromatography	**ULTRON PS-80H**	**Organic Acids and Alcohols**
Ligand Exchange Chromatography	**ULTRON PS-80N**	**Monosaccharides, Disaccharides, Alditol**
	ULTRON PS-80C	
	ULTRON PS-80P	
	ULTRON CI	**Inositol**
	ULTRON CL	**Glucuronic Acid**
Normal-phase Chromatography	**ULTRON VX-SIL**	**Phosphorus Liquid**
Reversed-phase Chromatography	**ULTRON VX-ODS**	**Pharmaceutical Compounds, General Organic Substances, Food Additives, Pesticides, Fatty Acids and Catecholamines**
	ULTRON VX-Octyl	
	STR ODS-II	
	STR ODS-M	

HPLC Column For Enantiomer Separation

The **ULTRON ES** series are columns for enantiomer separation.
Columns which are packed with protein immobilized silica (**ULTRON ES-OVM**, **ULTRON ES-PEPSIN**, **ULTRON ES-BSA**) and chemically bonded cyclodextrin (**ULTRON ES-CD**, **ULTRON ES-PhCD**).

ULTRON ES-OVM

■ Characteristics

① Ultron ES-OVM is a chiral separation column immobilized with ovomucoid which is strong protein for denaturation. (US PATENT 6027648 Eisai Co., LTD.)
② A wide range of chiral recognition.
③ No sample preparation for optical separation.
④ Aqueous mobile phase can be used in the separation .
⑤ A trace analysis can be performed (ng level) .

■ Applications

・Pharmaceutical Compounds, Pesticides and Organic Compounds

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
ULTRON ES-OVM (Narrow Bore)	5	150✕2.0
ULTRON ES-OVM (for Analytical)		150✕4.6
ULTRON ES-OVM (for Analytical)		150✕6.0
ULTRON ES-OVM.G (Guard Column)		10✕4.0
ULTRON ES-OVM (for Analytical)	10	250✕4.6
ULTRON ES-OVM Prep (for Preparative)		250✕20.0
ULTRON ES-OVM Prep.G (Guard Column for Preparative)		15✕8.0
ULTRON ES-OVM (Two Guard Cartridges)	5	5✕2.0
ULTRON ES-OVM (Two Guard Cartridges)		10✕4.6
Holder for Guard Cartridge (with Adaptor)	For 5✕2.0 mm column	
Holder for Guard Cartridge (with Adaptor)	For 10✕4.6 mm column	

ULTRON ES-PEPSIN

■ Characteristics

① ULTRON ES-PEPSIN is an enantiomer separation column immobilized with pepsin which is the polypeptide dialytic enzyme of the pig stomach mucous membrane origin.
② ULTRON ES-PEPSIN is effective for the enantiomer separation of amino alcohols such as β-blocker medicines.
③ The sample preparation for optical isomer separation is not necessary.
④ Aqueous mobile phase can be used in the separation.
⑤ A trace analysis can be performed (ng level).

■ Applications

・Pharmaceutical Compounds, Pesticides and Organic Compounds

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
ULTRON ES-PEPSIN (for Analytical)	5	150✕4.6
ULTRON ES-PEPSIN.G (Guard Column)		10✕4.0

ULTRON ES-BSA

■ Characteristics

① ULTRON ES-BSA is bovine serum albumin immobilized column for enantiomer separation.
② ULTRON ES-BSA is performed an excellent enantiomer separation for acidic compounds such as arylpropionic acid drugs.
③ The sample preparation for optical isomer separation is not necessary.
④ Aqueous mobile phase can be used in the separation.
⑤ A trace analysis can be performed (ng level) .

■ Applications

・Pharmaceutical compounds, Pesticides and Organic compounds

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
ULTRON ES-BSA (for Analytical)	7	150✕4.6
ULTRON ES-BSA.G (Guard Column)		10✕4.0

ULTRON ES-CD

ULTRON ES-PhCD

ULTRON ES-CD and ULTRON ES-PhCD are enantiomeric separation columns chemically bonded with β-cyclodextrin (**CD**) and phenylcarbamated β-cyclodextrin (**PhCD**), respectively.

■ Characteristics

① ULTRON ES-CD and ULTRON ES-PhCD are effective for the enantiomeric separation of hydrophobic cyclic compounds.
② Mobile phase of both reverse-phase and normal-phase modes can be used for the separation.
③ A wide range of enantiomeric compounds can be separated with ULTRON ES-CD or ULTRON ES-PhCD.
④ The columns show excellent stability and durability.

■ Applications

・Pharmaceutical compounds, Pesticides and Organic compounds

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
ULTRON ES-CD (Narrow Bore)	5	150✕2.0
ULTRON ES-CD (for Analytical)		150✕6.0
ULTRON ES-CD.G (Guard Column)		10✕4.0
ULTRON ES-CD (Two Guard Cartridges)		5✕2.0
ULTRON ES-CD (Two Guard Cartridges)		10✕4.6
Holder for Guard Cartridge (with Adaptor)	For 5✕2.0 mm column	
Holder for Guard Cartridge (with Adaptor)	For 10✕4.6 mm column	
ULTRON ES-PhCD (Narrow Bore)	5	150✕2.0
ULTRON ES-PhCD (for Analytical)		150✕6.0
ULTRON ES-PhCD.G (Guard Column)		10✕4.0
ULTRON ES-PhCD (Two Guard Cartridges)		5✕2.0
ULTRON ES-PhCD (Two Guard Cartridges)		10✕4.6
Holder for Guard Cartridge (with Adaptor)	For 5✕2.0 mm column	
Holder for Guard Cartridge (with Adaptor)	For 10✕4.6 mm column	

HPLC Column For Organic Acid Analysis

ULTRON PS-80H

ULTRON PS-80H is HPLC column packed with sulfonic acid type polystyrene cation exchange resin for the organic acid analysis.

■ Characteristics

① ULTRON PS-80H is high speed and a high separation column by the ion suppression of the sample.
② ULTRON PS-80H shows excellent reproducibility of the retention.
③ ULTRON PS-80H is durable because of the use of mechanical strong polymer gel.

■ Applications

• Aliphatic, Aromatic organic acid
• Alcohols, Aldehydes, Diols
• Monitoring of the fermentation

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
ULTRON PS-80H	10	300✕8.0
		250✕2.0
ULTRON PS-80H.G (Guard Column)		50✕8.0

The maximum operation pressure : 4.0 MPa
The maximum operation temperature : 90℃
Range of pH in use : pH 2 - 6

HPLC Column For Sugar And Sugar Alcohol Analysis

ULTRON PS-80N
ULTRON PS-80C
ULTRON PS-80P

The ULTRON PS series are HPLC columns packed with sulfonic acid type polystyrene cation exchange resin for the sugar and the sugar alcohol analysis.
There are three types of **PS-80N (Na type) , PS-80C (Ca type)** and **PS-80P (Pb type).**

■ Characteristics

① ULTRON PS series columns are effective for quantity analysis because saccharide is not adsorbed on the matrix.
② ULTRON PS series columns use in aqueous mobile phase.
③ ULTRON PS series columns are durable because of the use of mechanical strong polymer gel.

■ Applications

• Oligosaccharides, Disaccharides, Monosaccharides
• Suger alcohols
• Monitor of ferment hydrolysis of polysaccharide

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
ULTRON PS-80N	10	300✕8.0
ULTRON PS-80N.L		500✕8.0
ULTRON PS-80N.G (Guard Column)		50✕8.0
ULTRON PS-80C		300✕8.0
ULTRON PS-80C.G (Guard Column)		50✕8.0
ULTRON PS-80P		300✕8.0
ULTRON PS-80P.G (Guard Column)		50✕8.0

The maximum operation pressure : 4.0 MPa (PS-80N, -80C, -80P)
6.0 MPa (PS-80N.L)
The maximum operation temperature : 80℃ (PS-80N, -80N.L)
90℃ (PS-80C, -80P)
Range of pH in use : pH 6 - 12 (PS-80N, -80N.L),
pH 6 - 7.5 (PS-80C, -80P)

HPLC Column For Inositol In Health Drink

ULTRON CI

ULTRON CI is a strong cation exchange polymer packed HPLC column for inositol.

■ Characteristics

① ULTRON CI perform excellent qualitative analysis for inositol in health drink.
② ULTRON CI shows good reproducibilyty in retention.
③ The polymer beads of ULTRON CI have mechanical strength.
The maximum operation pressure is 8.0 MPa.
The maximum operation temperature is 90 ℃ .

Column	Column Size Length ✕ Inner Diameter (mm)
ULTRON CI	200✕4.6

HPLC Column For Glucuronic Acid In Heath Drink

ULTRON CL

ULTRON CL is a strong anion exchange polymer packed HPLC column for glucuronic acid.

■ Characteristics

① ULTRON CL perform excellent qualitative analysis for glucuronic acid in health drink.
② ULTRON CL shows good reproducibility in retention.
③ The polymer beads of ULTRON CI have mechanical strength.
The maximum operation pressure is 8.0 MPa.
The maximum operation temperature is 80 ℃.

Column	Column Size Length ✕ Inner diameter (mm)
ULTRON CL	150✕4.0

HPLC Column For Normal Phase (SIL)

ULTRON VX-SIL

ULTRON VX-SIL is used high purity silica gel of SiO2 99.99% or more. Therefore, the sample adsorption with the metal oxide is decreased as much as possible.

The use of the spherical silica particles lead to reduce the column pressure drop and long life.

Particle Size	Pore Size	Specific Surface
5 μm	12 nm	300 m^2/g

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
VX-SIL (for Analytical)	5	150✕4.6
		250✕4.6
		150✕6.0
VX-SIL (for Preparative)	5	250✕20.0
VX-SIL (Narrow Bore)	5	150✕2.0
		250✕2.0
		150✕1.0
		250✕1.0
VX-SIL (for Analytical)	10	150✕4.6
		250✕4.6
		150✕6.0
VX-SIL (for Preparative)	10	250✕20.0
		250✕30.0
		250✕50.0
VX-SIL (for Preparative)	15	250✕4.6
VX-SIL (for Preparative)	15	250✕20.0
		250✕30.0
		250✕50.0

ULTRON VX-SIL.G (Guard Column)

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
VX-SIL.G (for Analytical)	5	10✕4.0
VX-SIL.G (for Preparative)		15✕8.0
VX-SIL.G (for Analytical)	10	10✕4.0
VX-SIL.G (for Preparative)		15✕8.0
VX-SIL.G (for Analytical)	15	10✕4.0
VX-SIL.G (for Preparative)		15✕8.0
VX-SIL (Two Guard Cartridges)	5	5✕2.0
VX-SIL (Two Guard Cartridges)		10✕4.6
Holder for Guard Cartridge (with Adaptor)	For 5✕2.0 mm column	
Holder for Guard Cartridge (with Adaptor)	For 10✕4.6 mm column	

ULTRON VX-ODS

ULTRON VX-ODS is reversed-phase column having monomeric octadecyl group. The bare silica of **ULTRON VX-ODS** is the same of ULTRON VX-SIL. Our excellent end-capping technology (secondary silylation) lead to the reduction of the influence of the residual silanol groups. We have three types (5, 10, and 15 μm) of the particle diameter. We also various column from 1 mm (narrow bore) to 50 mm (for preparative separations) in the inner diameter. Please select the column size according to the purpose.

Particle Size	Pore Size	Surface Area	Carbon Content
5 μm	12 nm	300 m^2/g	16 %

Reproducibility between column lots

ULTRON VX-ODS columns are cheked by the severe quality control every each manufacturing process. The product passed many check point in the manufacturing process is **ULTRON VX-ODS**. The k' and α value obtained with ULTRON VX-ODS shows the narrow difference between the batch and column lots. ULTRON VX-ODS shows excellent reproducibility and stability, in other test between column lots.

Stereoselectivity, distribution equilibrium

ULTRON VX-ODS which has monolayer of octadecyl group shows excellent stereoselectivity for the sample molecule. The distribution equilibrium is performed quickly under the gradient elution or at the exchange of the mobile phase used.

Pressure resistance

By the use of spherical silica gel, **ULTRON VX-ODS** shows the excellent the resisting pressure and even at fast flow rate of mobile phase, a stable separation is obtained.

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
VX-ODS (for Analytical)	5	150✕4.6
		250✕4.6
		150✕6.0
VX-ODS (for Preparative)	5	250✕20.0
VX-ODS (Narrow Bore)	5	150✕2.0
		250✕2.0
		150✕1.0
		250✕1.0
VX-ODS (for Analytical)	10	150✕4.6
		250✕4.6
		150✕6.0
VX-ODS (for Preparative)	10	250✕20.0
		250✕30.0
		250✕50.0
VX-ODS (for Analytical)	15	250✕4.6
VX-ODS (for Preparative)	15	250✕20.0
		250✕30.0
		250✕50.0

HPLC Column For Normal Phase (ODS)

ULTRON VX-ODS.G (Guard Column)

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
VX-ODS.G (for Analytical)	5	10✕4.0
VX-ODS.G (for Preparative)		15✕8.0
VX-ODS.G (for Analytical)	10	10✕4.0
VX-ODS.G (for Preparative)		15✕8.0
VX-ODS.G (for Analytical)	15	10✕4.0
VX-ODS.G (for Preparative)		15✕8.0
VX-ODS (Two Guard Cartridges)	5	5✕2.0
VX-ODS (Two Guard Cartridges)		10✕4.6
Holder for Guard Cartridge (with Adaptor)	For 5✕2.0 mm column	
Holder for Guard Cartridge (with Adaptor)	For 10✕4.6 mm column	

HPLC Column For Reversed Phase (Octyl)

ULTRON VX-Octyl

The earth environment is very important problem. We have to defend our earth from the atmospheric pollution, the contamination of the water, the soil pollution and the industrial waste pollution. The reduction of large amount of orgnic solvents is also needed in the HPLC analysis which can be performed for many samples in the various field. In order to overcome many problems mentioned above, octyl column modified with short alkyl chain than that of ODS column may be necessary and become popular. **ULTRON VX-Octyl** have a necessary characteristics to satisfy for such requirements.

A highly refined synthetic technology of ULTRON VX-ODS was applied to **ULTRON VX-Octyl**.

■ Characteristics

The column life has been greatly improved.

ULTRON VX-Octyl is very few in the difference between columns lots and shows excellent reproducibility.

ULTRON VX-Octyl save the analysis time compared with ODS and shows excellent separation.

The use of organic solvent is decreased.

Because distribution equilibrium can be achieved quickly and the adsorbed material can be eluted easily compared with ODS, The best separation can be obtained by the gradient elution.

■ Applications

・Pharmaceutical compounds, Pesticides, Chemical compounds, Food, Environmental compounds and others

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
ULTRON VX-Octyl (for Analytical)	5	150✕4.6
		250✕4.6
ULTRON VX-Octyl (for Preparative)		250✕20.0
ULTRON VX-Octyl.G (Guard Column)		10✕4.0
ULTRON VX-Octyl.G (Guard Column for Preparative)		15✕8.0

HPLC Column For Reversed Phase (STR ODS)

STR ODS-II

■ Characteristics

① The effect of the metal oxide is suppressed minimum because of the highly-purified silica gel as a base material of STR series.
② STR series are durable column because of the use of mechanically strong silica gel.
③ STR series column is durable in acidic and basic mobile phase.
④ STR series are easy to operate and show high performane, because the analytical operation pressure is low.
⑤ The excellent end capping technology shows good peak shape for the bacic substances and acidic compounds and for the samples which form complex with metal.

Column	Particle Shape	Particle Size	Pore Size	Specific Surface Area	Carbon Content
ODS-II	Spherical Porous Silica Gel	5 μm	12 nm	320 m^2/g	17 %

Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
STR ODS-Ⅱ (Narrow Bore)	5	150✕2.0
STR ODS-Ⅱ (Narrow Bore)		250✕2.0
STR ODS-Ⅱ (for Analytical)		100✕4.0
STR ODS-Ⅱ (for Analytical)		150✕4.0
STR ODS-Ⅱ (for Analytical)		250✕4.0
STR ODS-Ⅱ (for Analytical)		150✕4.6
STR ODS-Ⅱ (for Analytical)		250✕4.6
STR ODS-Ⅱ (for Analytical)		150✕6.0
STR ODS-Ⅱ (Guard Column)		10✕4.0
STR ODS-Ⅱ (Guard Column)		10✕4.6
STR ODS-Ⅱ (Guard Column)		10✕6.0
STR ODS-Ⅱ (for Preparative)		250✕20.0
STR ODS-Ⅱ (Guard Column for Preparative)		50✕20.0
STR ODS-Ⅱ PEEK (for Analytical)		150✕4.6
STR ODS-Ⅱ PEEK (for Analytical)		250✕4.6
STR ODS-Ⅱ PEEK (Guard Column)		10✕4.6
STR ODS-Ⅱ (Two Guard Cartridges)		5✕2.0
STR ODS-Ⅱ (Two Guard Cartridges)		10✕4.6
Holder for Guard Cartridge (with Adaptor)	For 5✕2.0 mm column	
Holder for Guard Cartridge (with Adaptor)	For 10✕4.6 mm column	

STR ODS-M

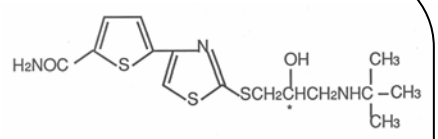
Column	Particle Shape	Particle Size	Pore Size	Specific Surface Area	Carbon Content
ODS-M	The Perfect and Spherical Porous Silica Gel	5 μm	10 nm	350 m^2/g	15 %

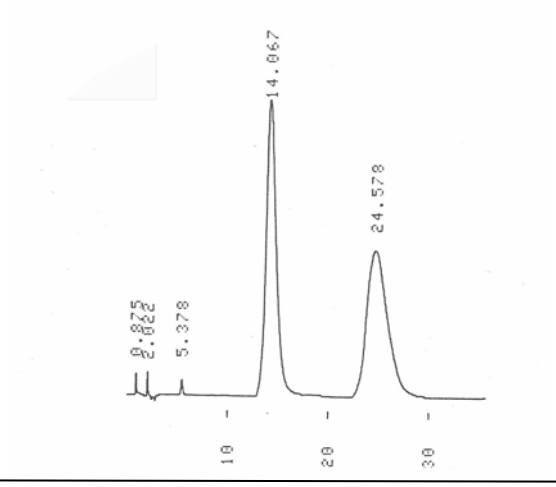
Column	Particle Size (μm)	Column Size Length ✕ Inner Diameter (mm)
STR ODS-M	5	150✕4.0
STR ODS-M		250✕4.0
STR ODS-M		150✕4.6
STR ODS-M		250✕4.6
STR ODS-M		150✕6.0
STR ODS-M		10✕4.0
STR ODS-M		50✕4.0

Application Data

β-blockers

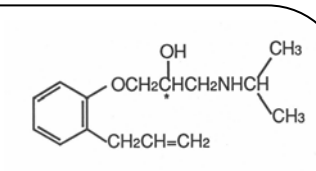
Arotinolol

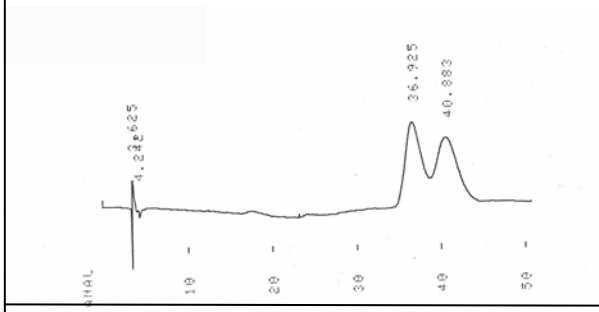




Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0) / CH_3CN = 100 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Alprenolol

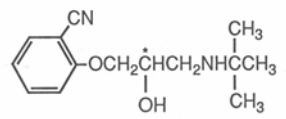


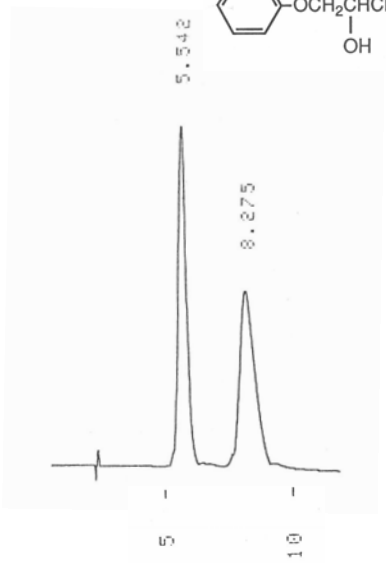


Column: ULTRON ES-OVM
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5) / CH_3CN = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

β-blockers

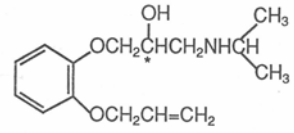
Bunitrolol

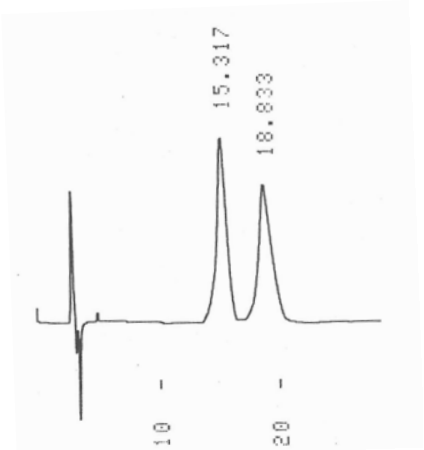




Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0) / C_2H_5OH = 100 / 3
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Oxprenolol



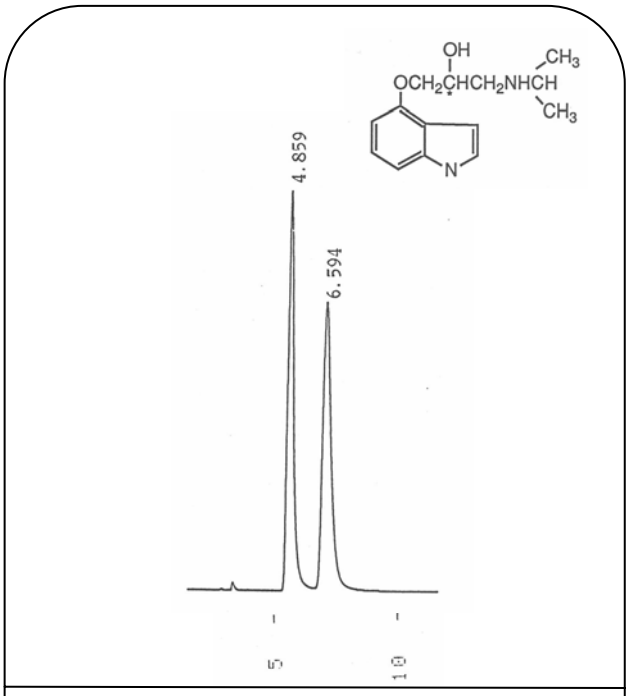


Column: ULTRON ES-OVM
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0) / CH_3CN = 100 / 10
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

ULTRON ES-OVM

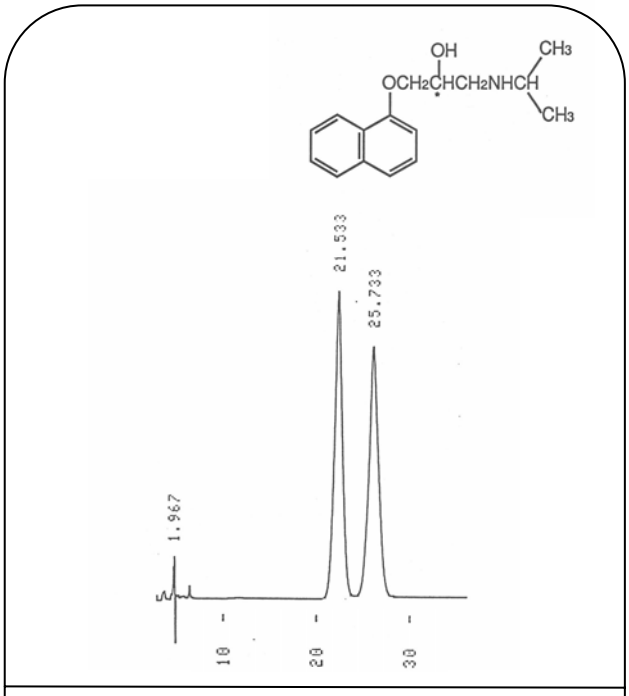
β-blockers

Pindolol



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5) / C_2H_5OH = 100 / 30
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

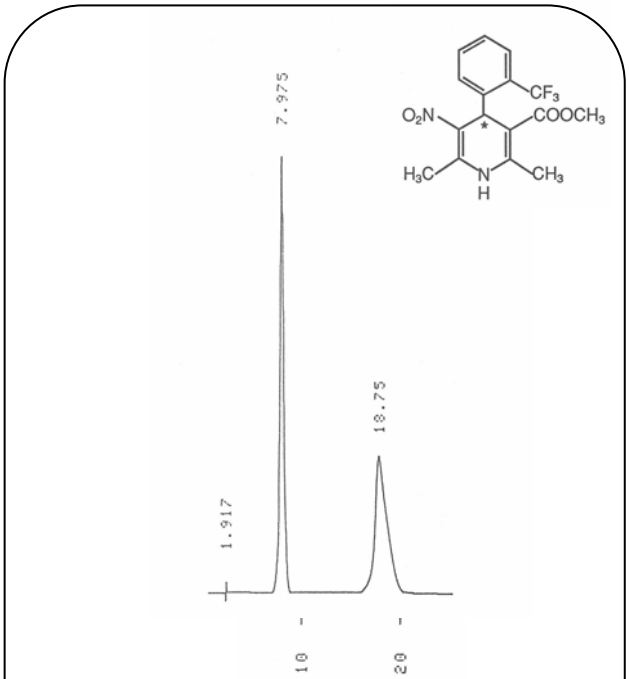
Propranolol



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.8) / CH_3CN = 100 / 30
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

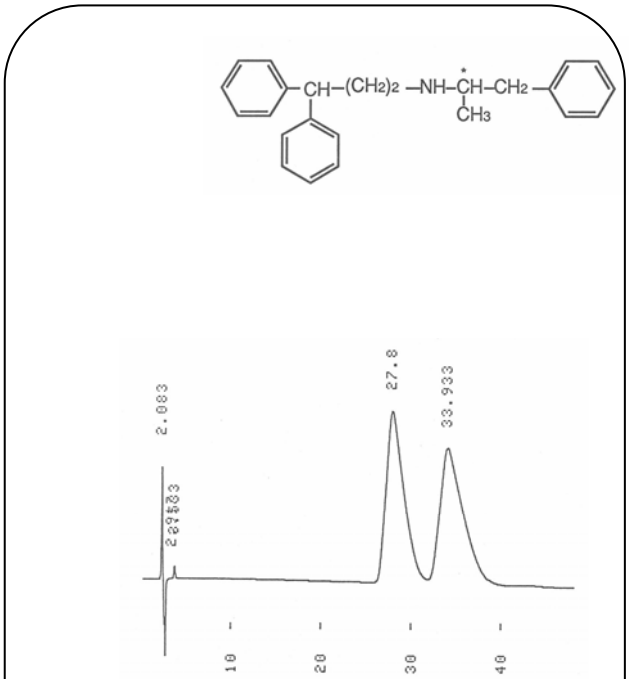
Calcium Antagonists

Bay K 8644



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 25
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Prenylamine

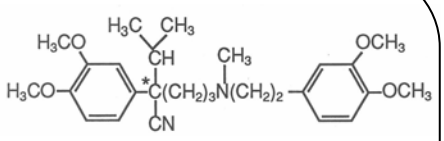


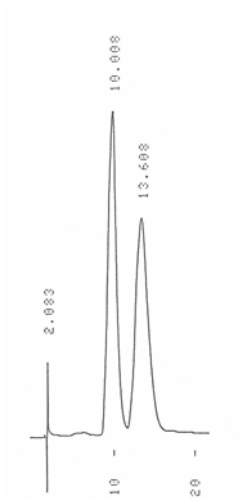
Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.0) / CH_3CN = 100 / 15
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

ULTRON ES-OVM

Calcium Antagonists

Verapamil

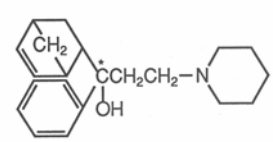


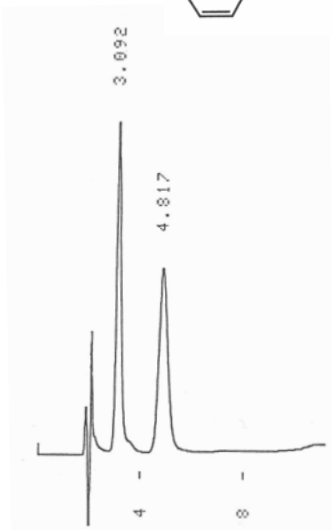


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antiparkinsons

Biperiden

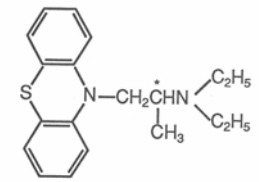


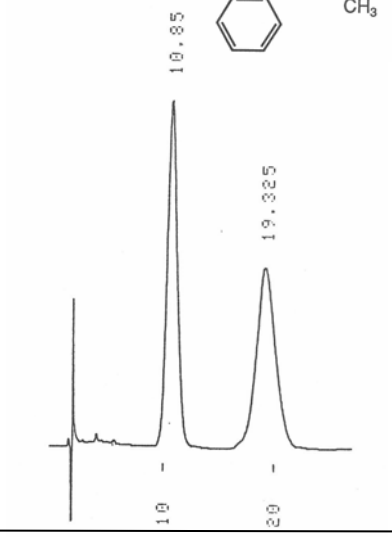


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antiparkinsons

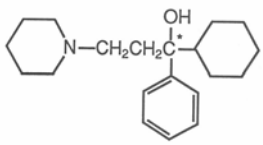
Profenamine

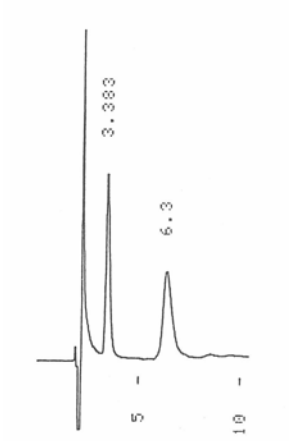




Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 25
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Trihexyphenidyl

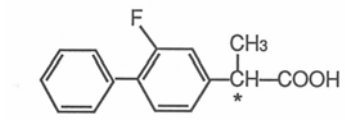


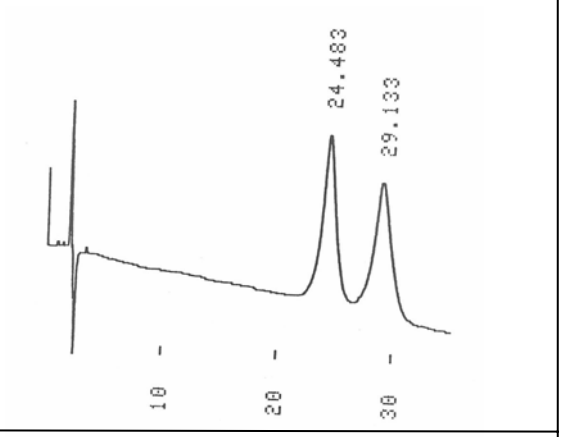


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100/ 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antiinflammatoryies

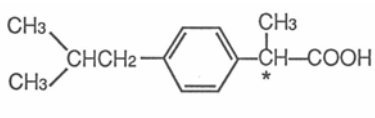
Flurbiprofen

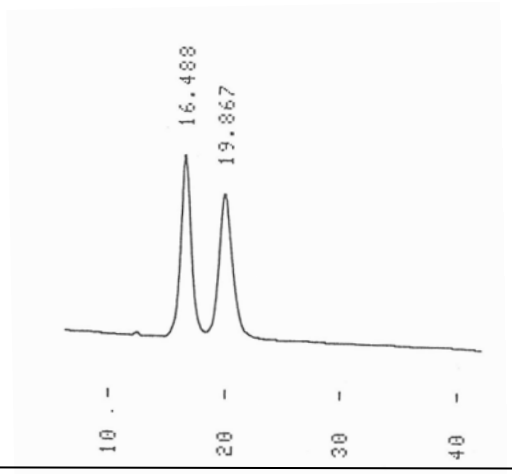




Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 3.0) / CH_3CN = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Ibuprofen

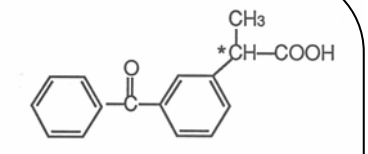


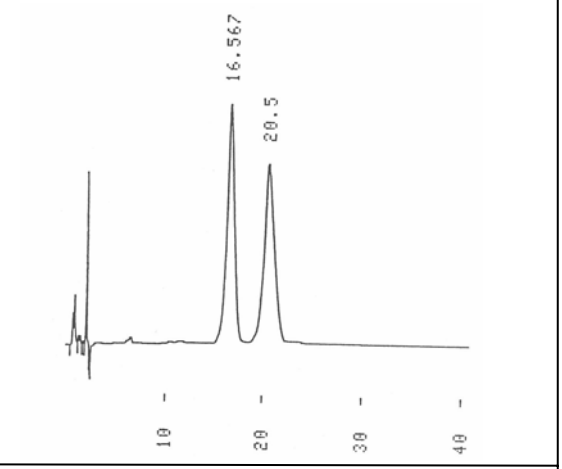


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 3.0) / CH_3CN = 100 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antiinflammatoryies

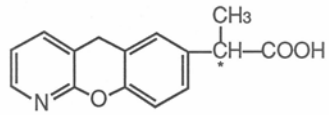
Ketoprofen

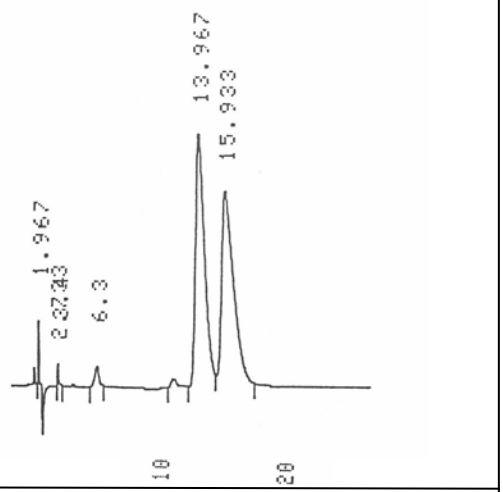




Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 3.0) / CH_3CN = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Pranoprofen

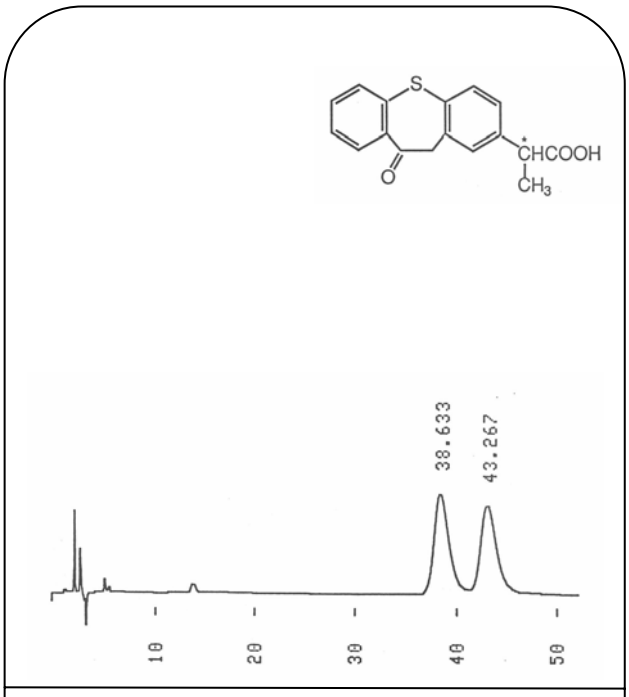




Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 3.0) / CH_3CN = 100 / 8
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antiinflammatoryies

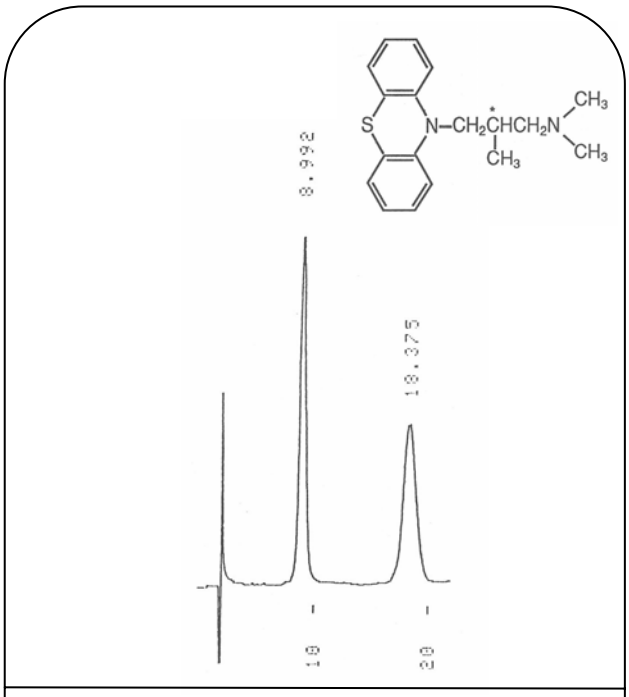
Zaltoprofen



Column: ULTRON ES-OVM
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 3.0) / CH_3CN = 87 / 13
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antihistamines

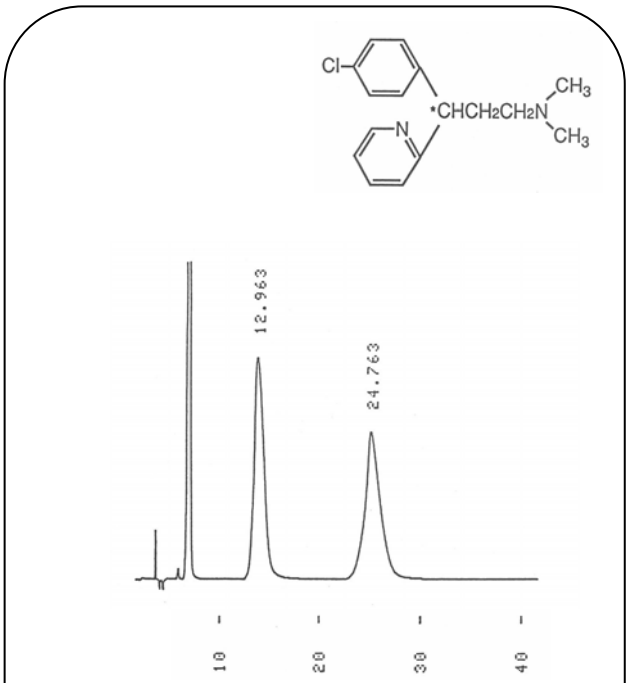
Alimemazine



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 25
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

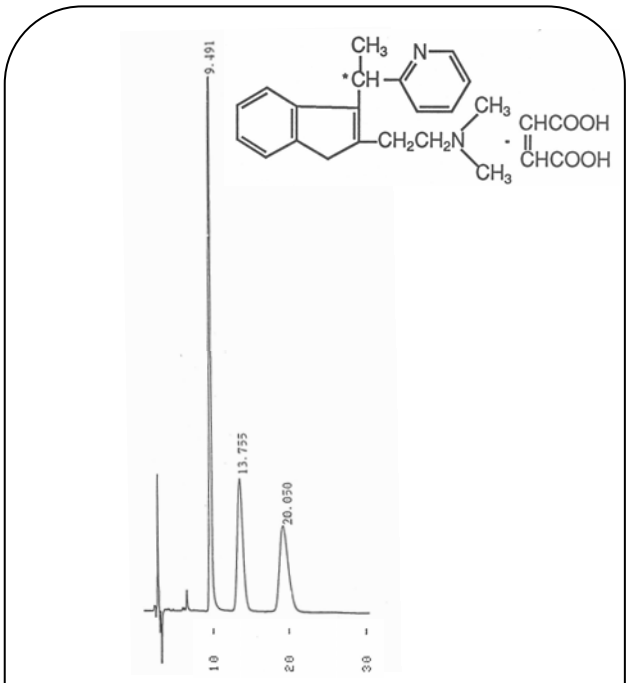
Antihistamines

Chlorpheniramine



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.0) / CH_3CN = 100 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

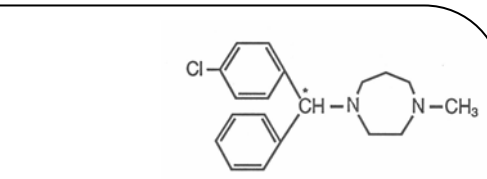
Dimethindene Maleate

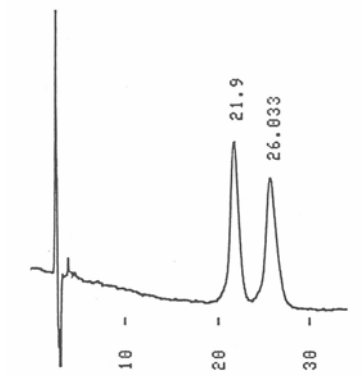


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 100 / 9
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antihistamines

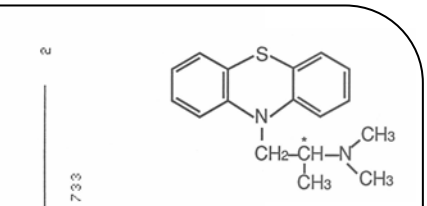
Homochlorcyclizine





Column: ULTRON ES-OVM
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 20
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

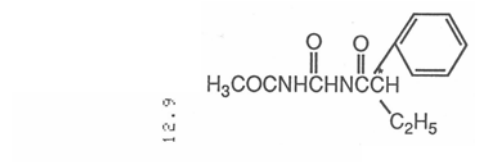
Promethazine

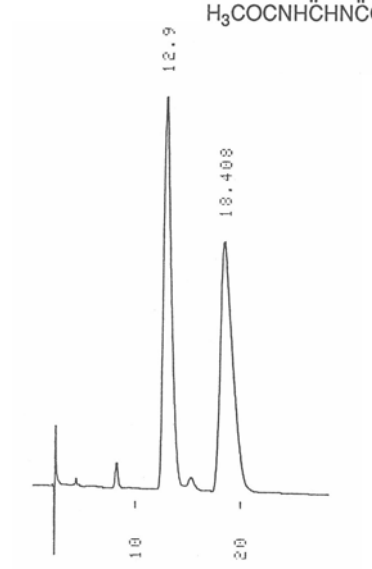


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 3.0) / CH_3CN = 100 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Anticonvulsants

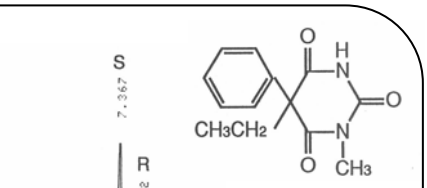
Acetylpheneturide





Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 7.5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

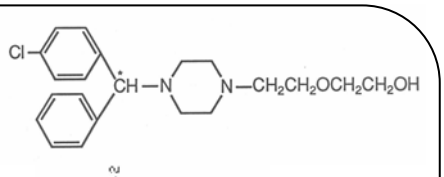
Mephobarbital

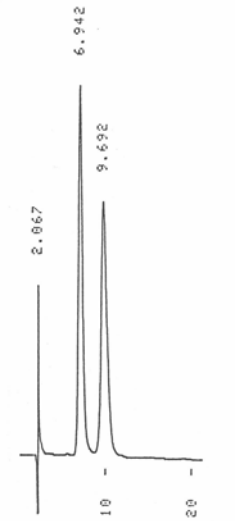


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Tranquilizers

Hydroxyzine

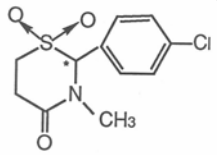


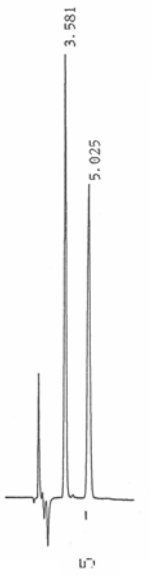


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Skeletal Muscle Relaxants

Chlormezanone

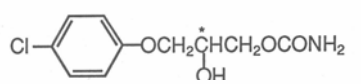


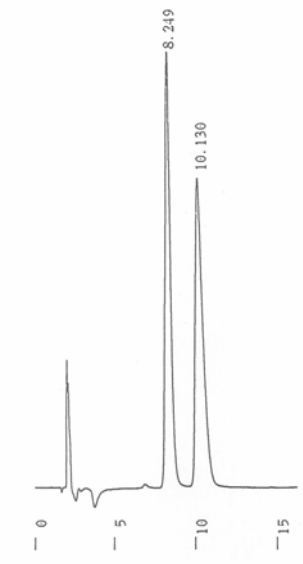


Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Skeletal Muscle Relaxants

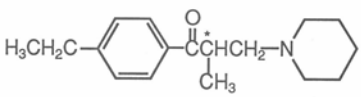
Chlorphenesin

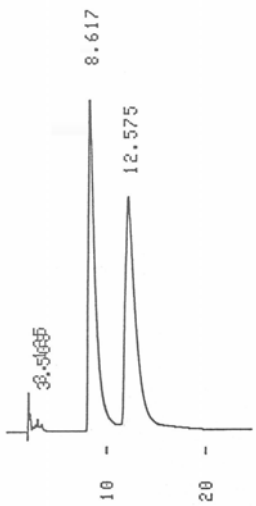




Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5)
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Eperisone

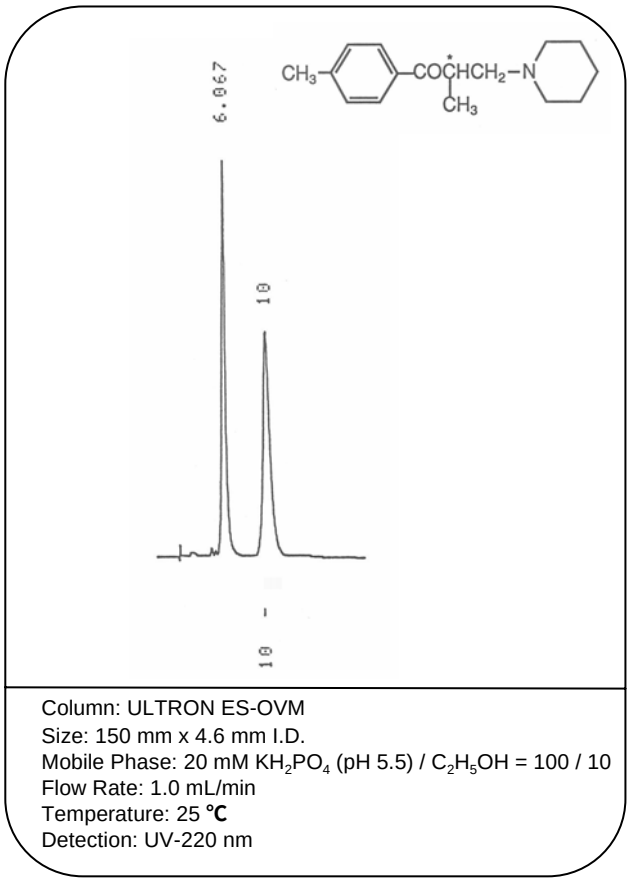




Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5) / C_2H_5OH = 100 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Skeletal Muscle Relaxants

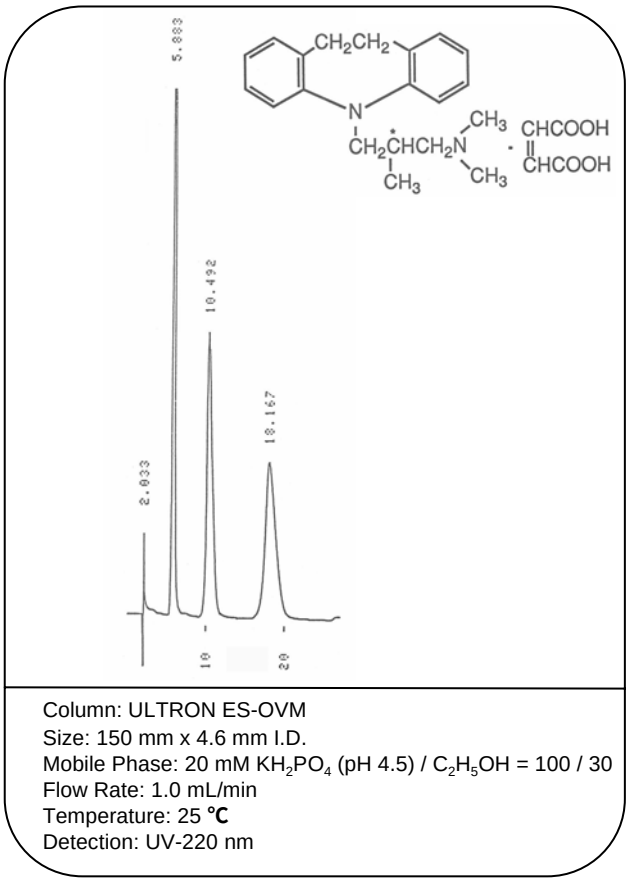
Tolperisone



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5) / C_2H_5OH = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antidepressants

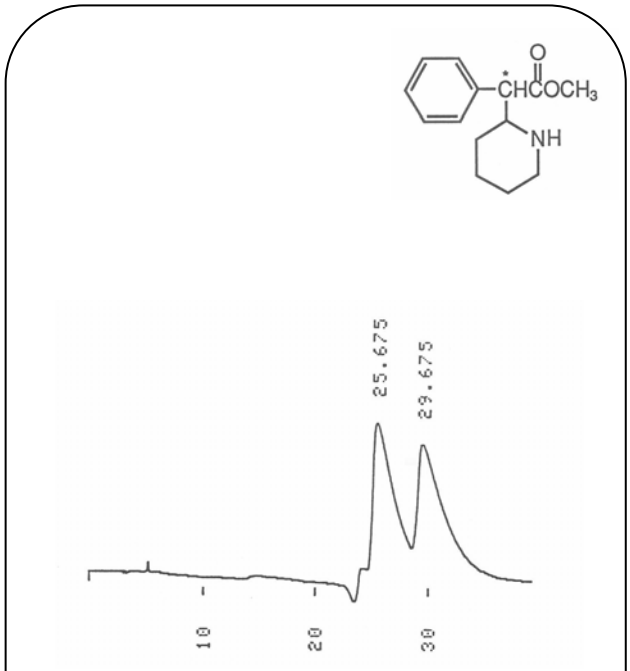
Trimipramine Maleate



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.5) / C_2H_5OH = 100 / 30
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Central Nervous System Stimulants

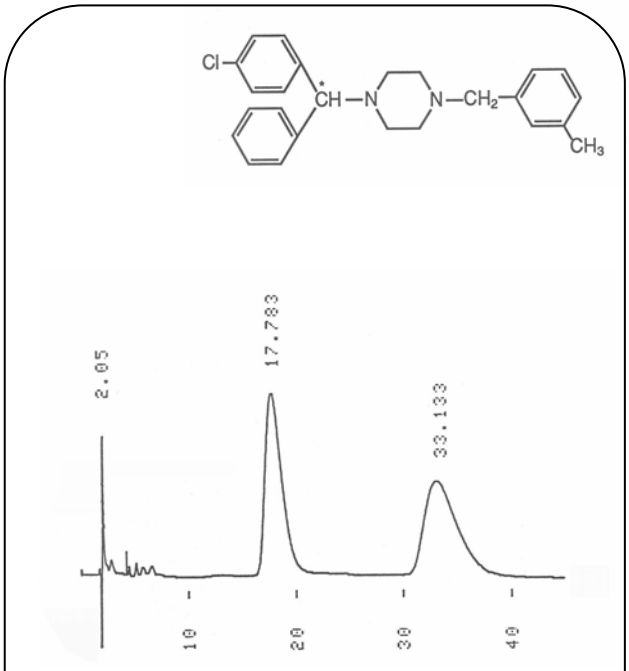
Methylphenidate



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.7)
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Drugs Used in Vertigo

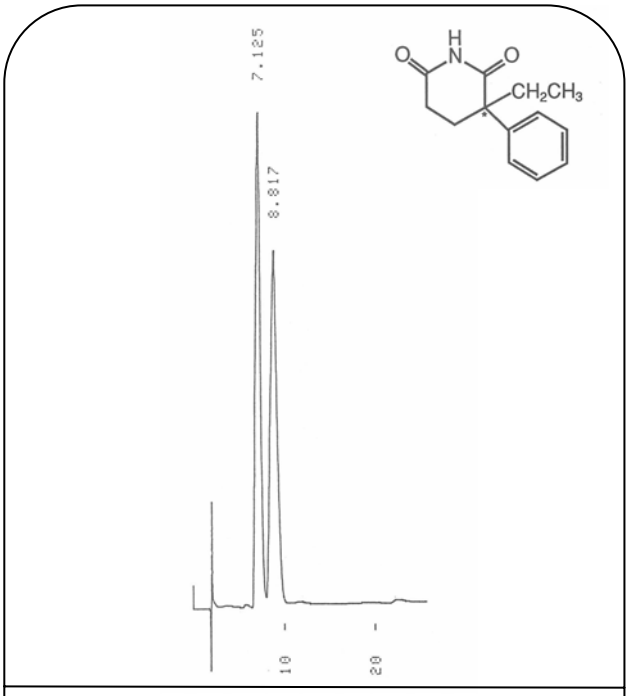
Meclizine



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 35
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

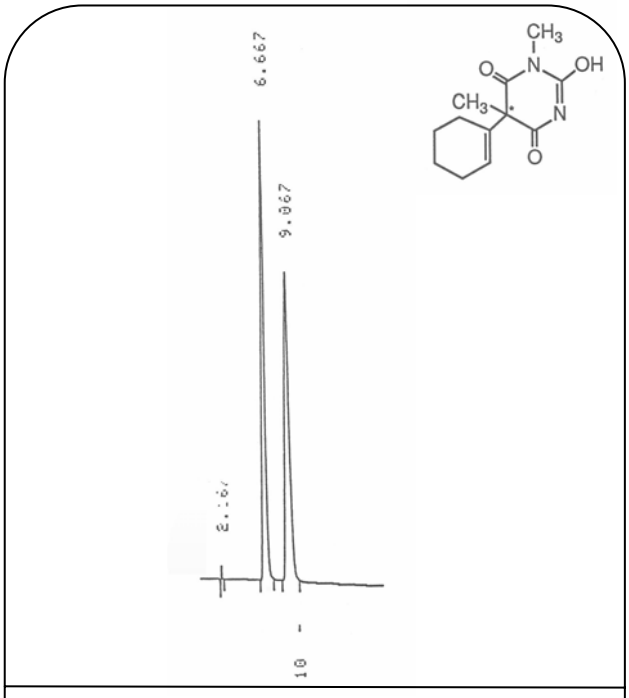
Hypnotics

Glutethimide



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

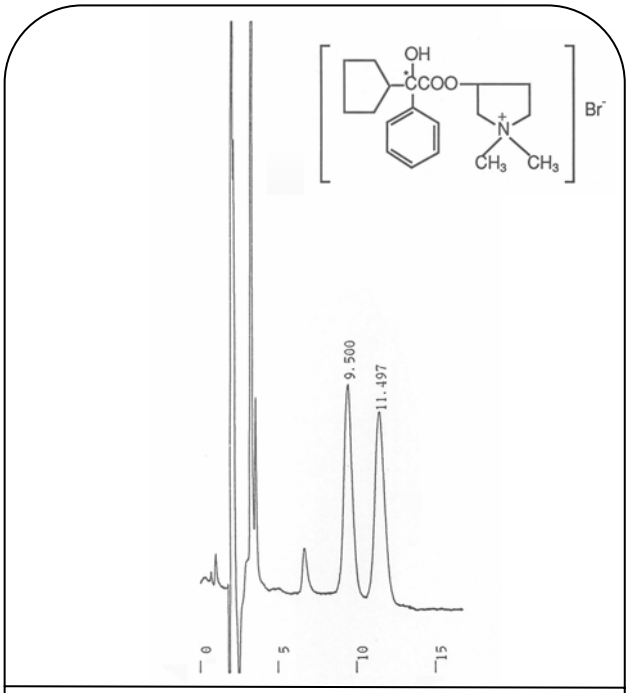
Hexobarbital



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0) / C_2H_5OH = 100 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

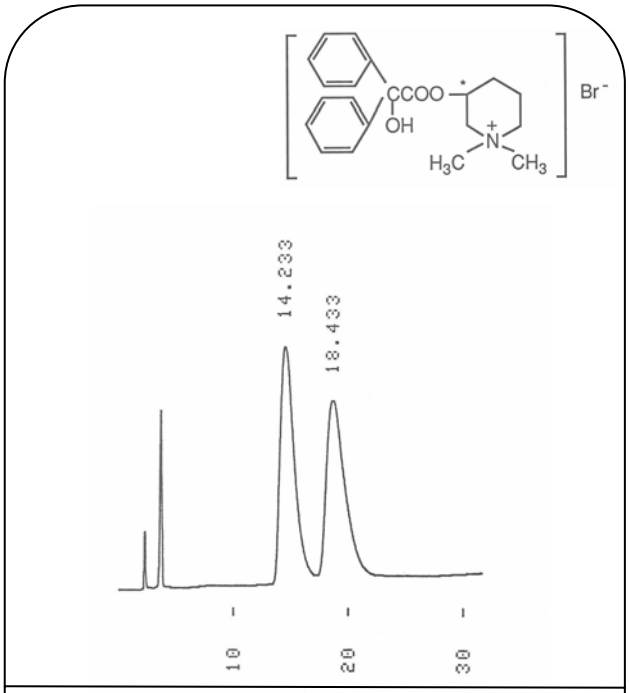
Anticholinergics

Glycopyrronium Bromaide



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5) / C_2H_5OH = 100 / 2
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

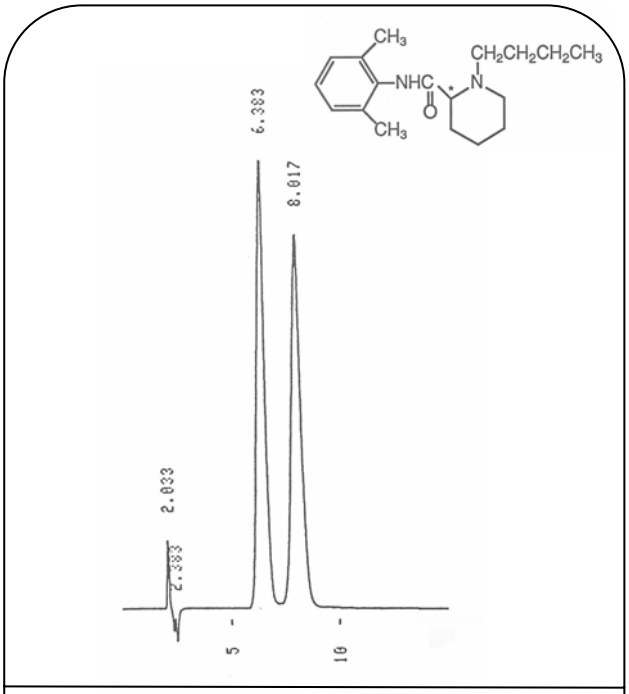
Mepenzolate Bromaide



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6)
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Local Anesthetics

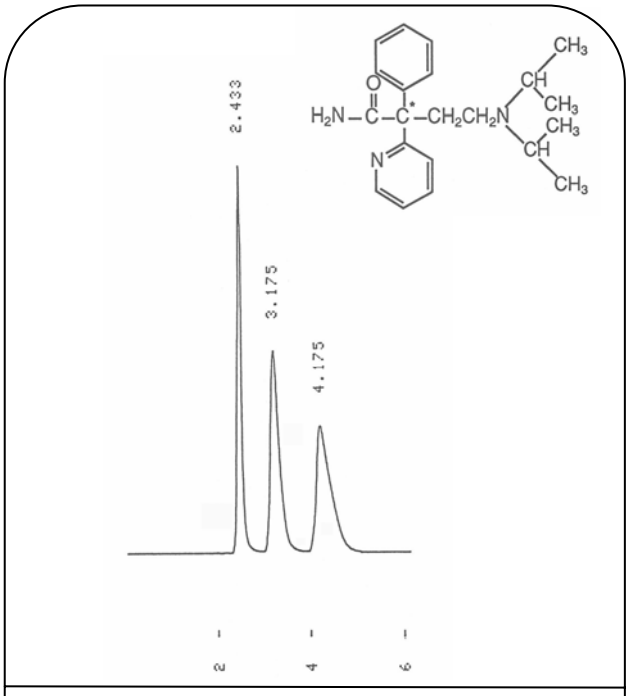
Bupivacaine



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5) / CH_3CN = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antidysrhythmics

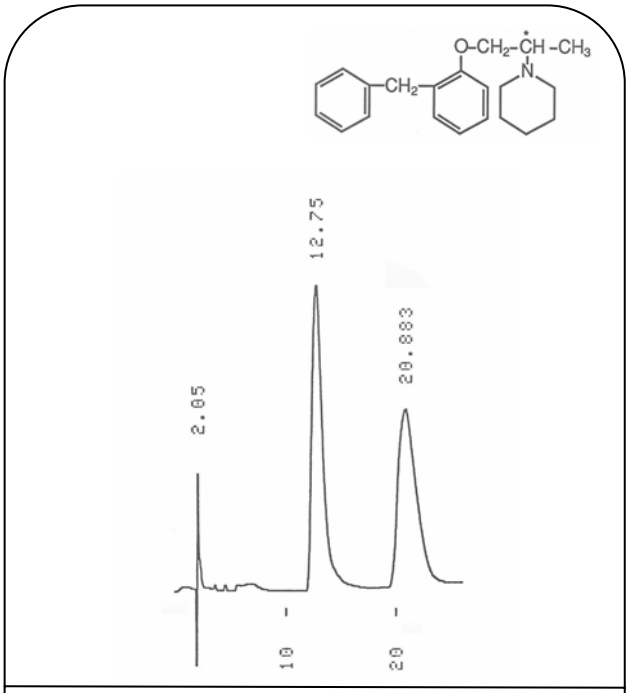
Disopyramid



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5) / C_2H_5OH = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

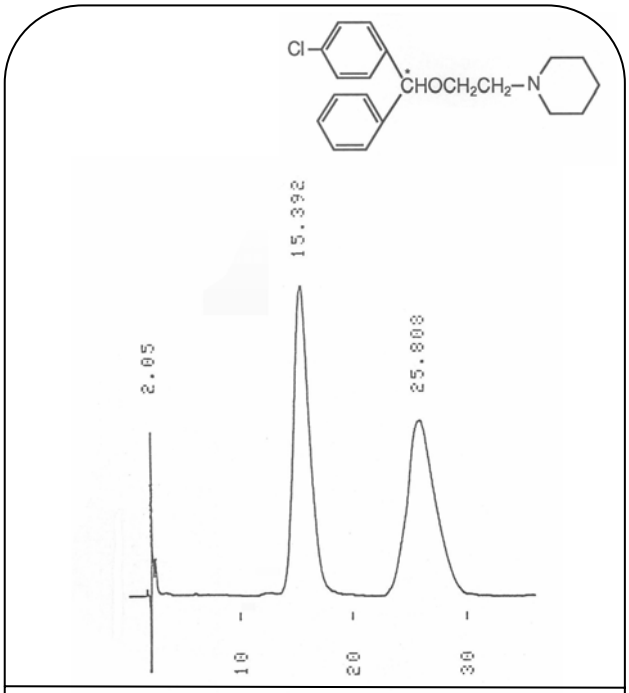
Antitussives

Benproperine



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 20
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

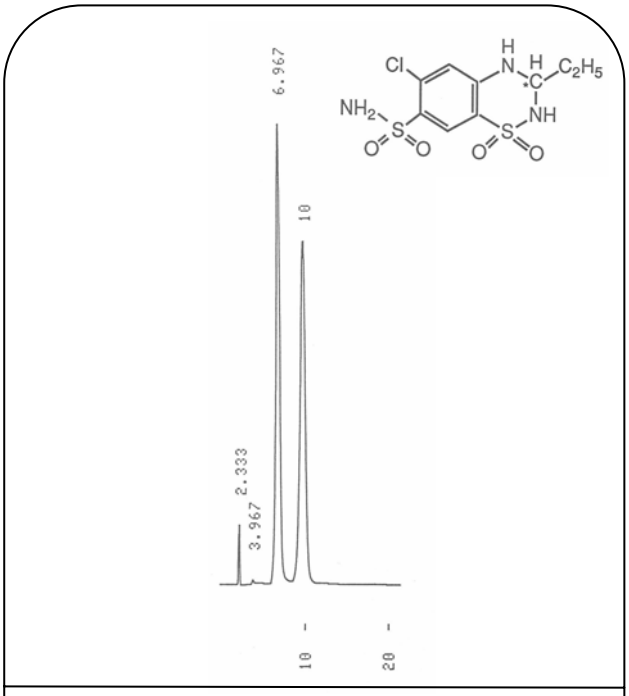
Cloperastin



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 15
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Diuretics

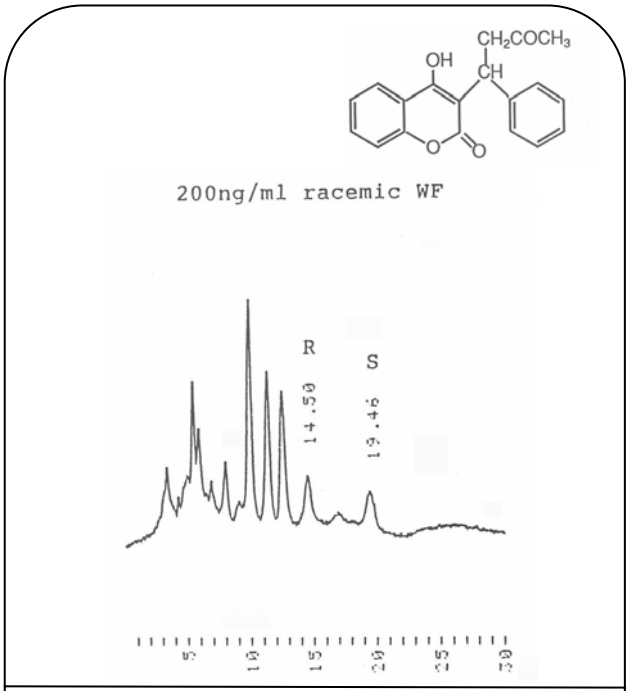
Ethiazide



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6)
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Oral Anticoagulants

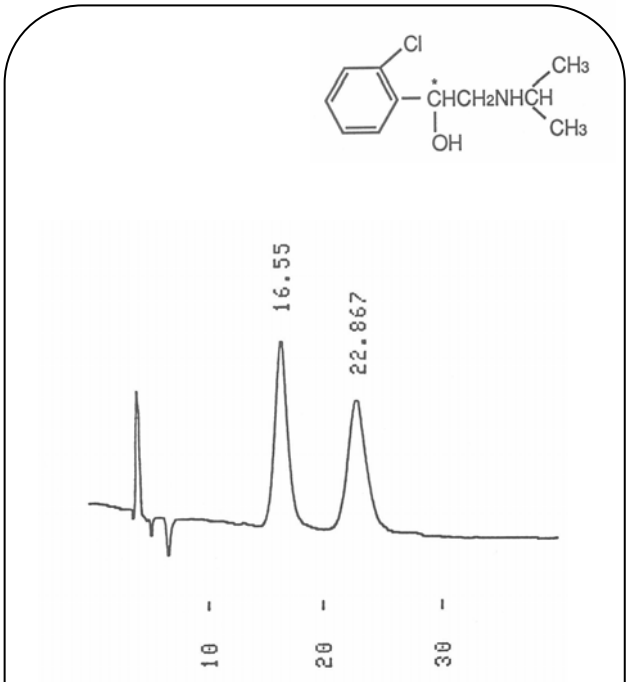
Warfarin



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 3.0) / CH_3CN = 100 / 15
Flow Rate: 0.1 mL/min
Temperature: 25 ℃
Detection: UV-305 nm

Bronchodilators

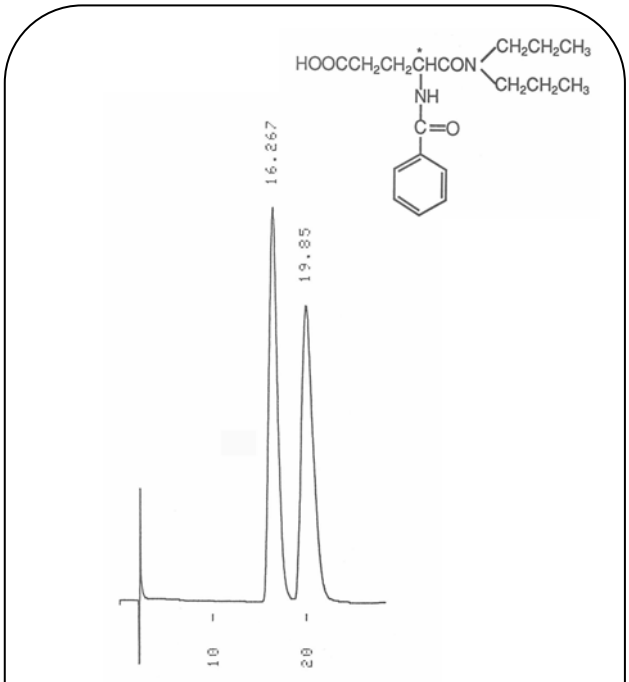
Clorprenaline



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5) / C_2H_5OH = 100 / 3
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Drugs in Peptic Ulcer

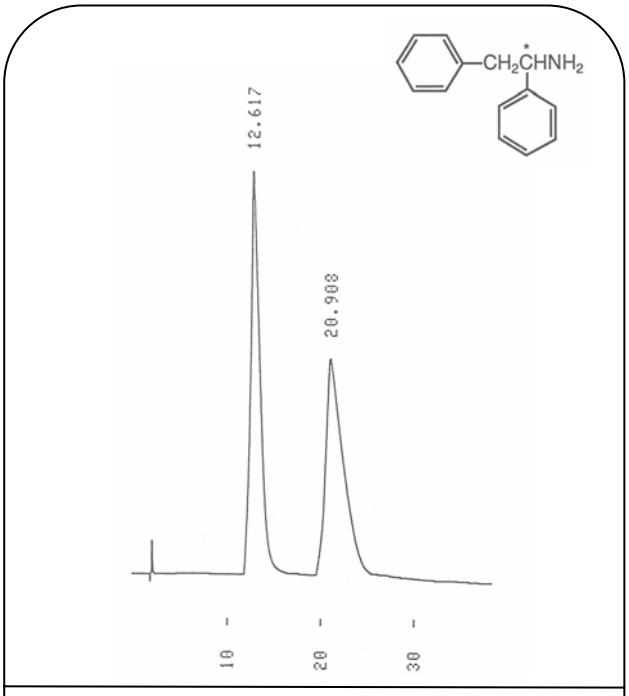
Proglumide



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 20
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

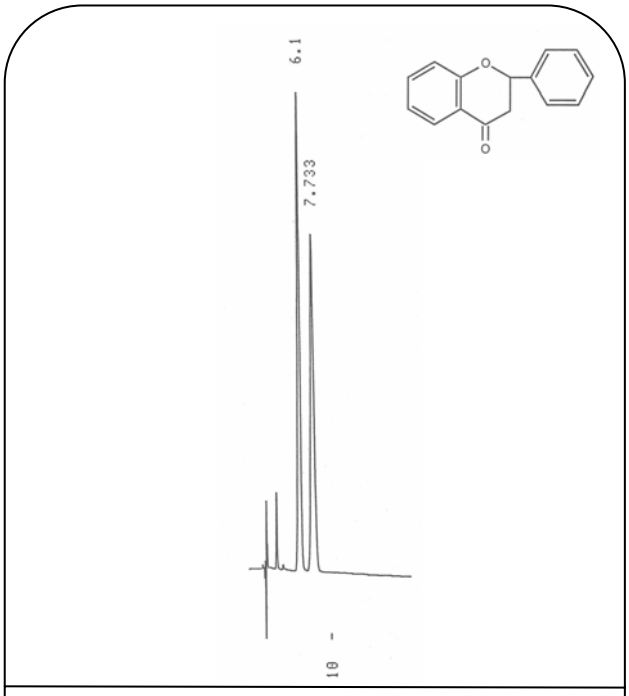
Others

1,2-Diphenylethylamine



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.5)
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

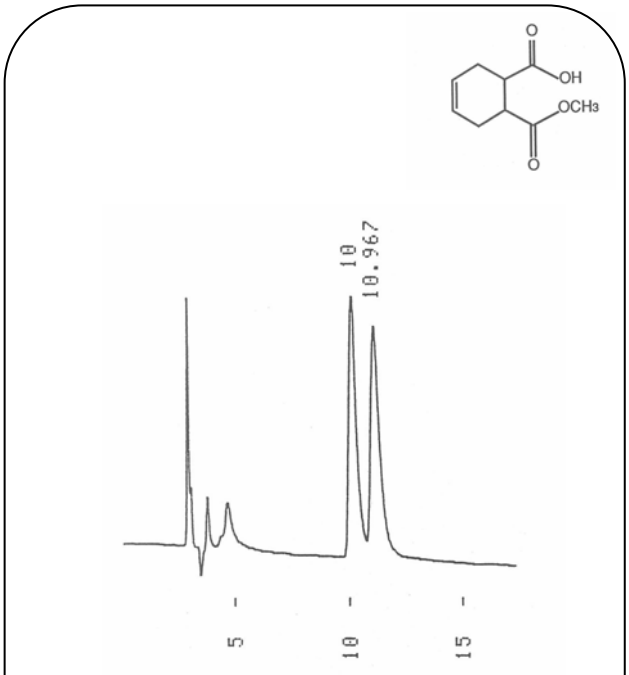
Flavanone



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 100 / 30
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-254 nm

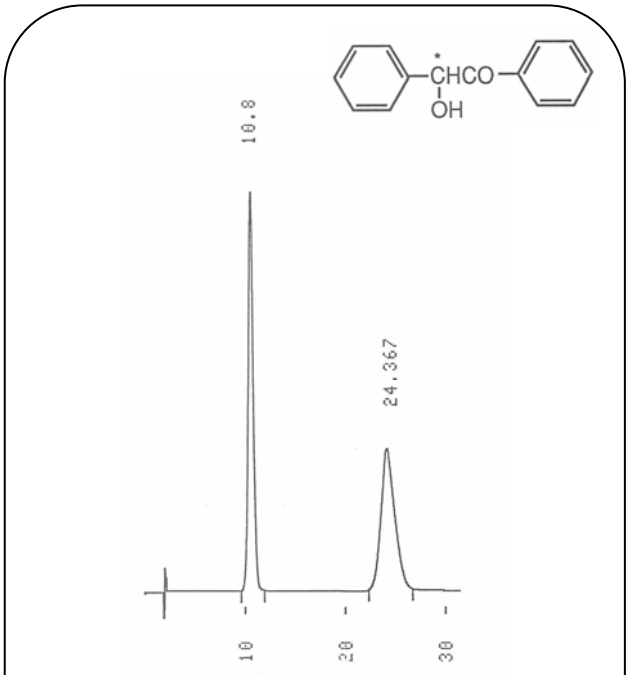
Others

(1S,2R)-1-Methyl-cis-1,2,3,6-tetrahydrophthalate



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.0) / CH_3CN = 100 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

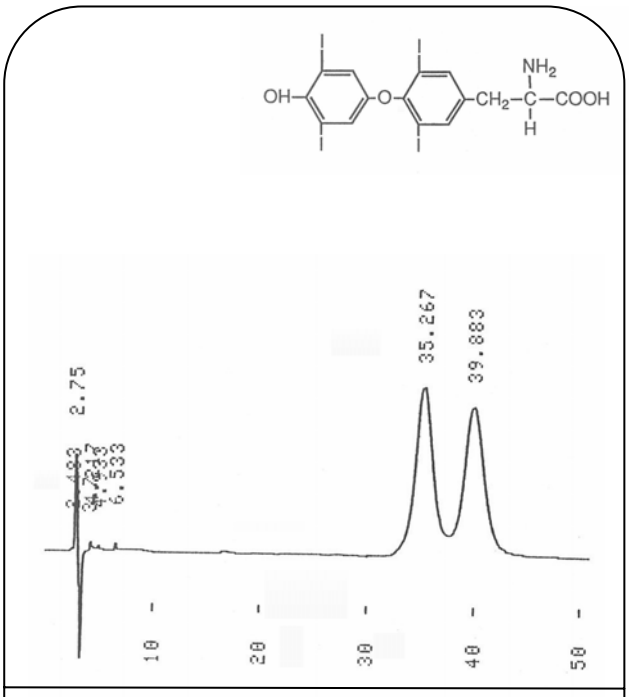
Benzoin



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / C_2H_5OH = 100 / 10
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-250 nm

Others

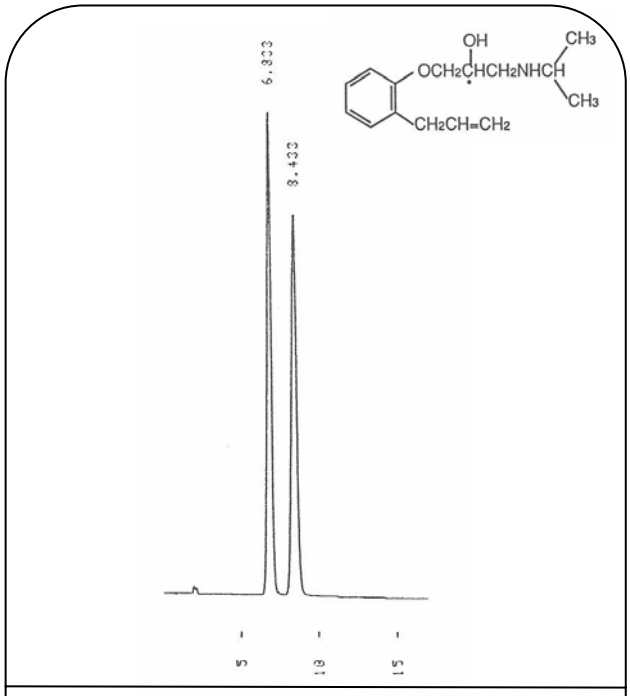
Thyroxine



Column: ULTRON ES-OVM
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 100 / 20
Flow Rate: 1.2 mL/min
Temperature: 15 ℃
Detection: UV-220 nm

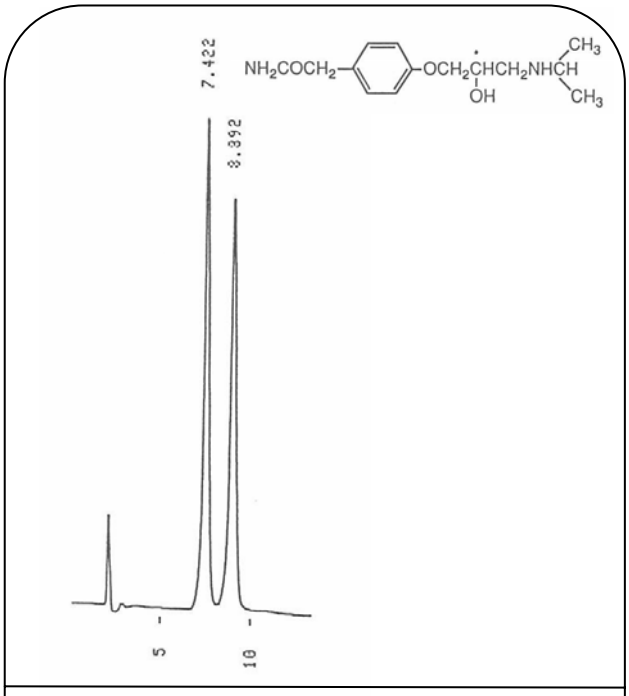
β-Blockers

Alprenolol



Column: ULTRON ES-PEPSIN
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.0) / C_2H_5OH = 95 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

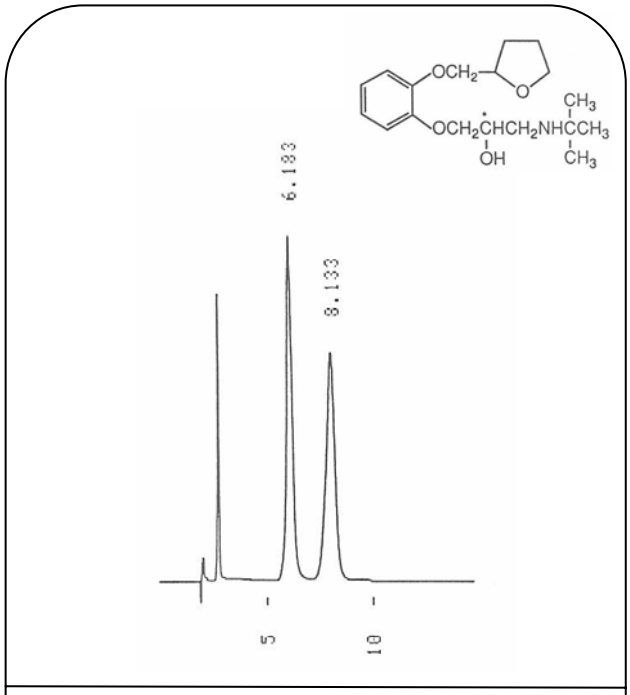
Atenolol



Column: ULTRON ES-PEPSIN
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0) / C_2H_5OH = 99 / 1
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

β-Blockers

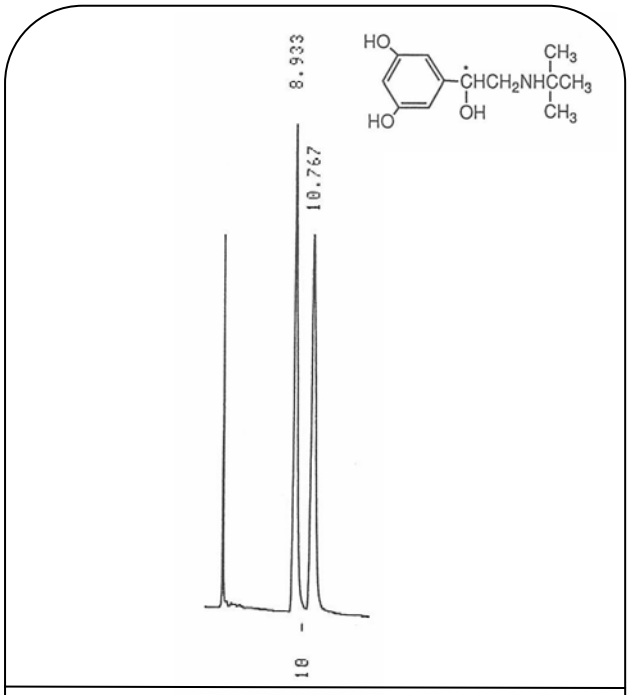
Bunitrolol



Column: ULTRON ES-PEPSIN
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.0) / C_2H_5OH = 95 / 5
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Bronchodilators

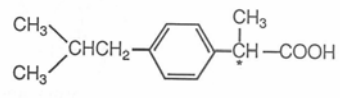
Terbutaline

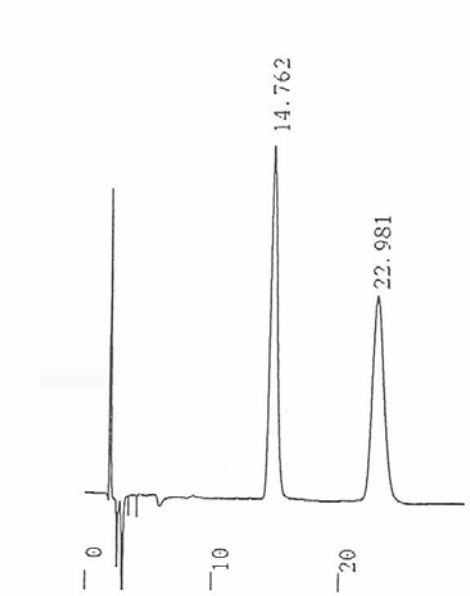


Column: ULTRON ES-PEPSIN
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0)
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antiinflammatoryies

Ibuprofen

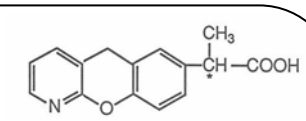


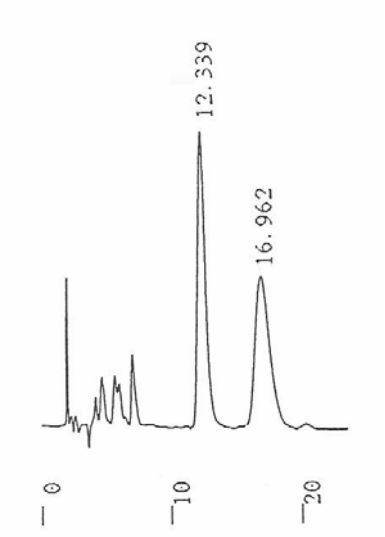


Column: ULTRON ES-BSA
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 7.0) / 1-Propanol / Caprylic Acid = 98 / 2 / 0.08
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antiinflammatoryies

Pranoprofen

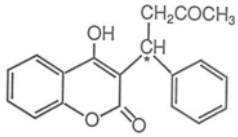


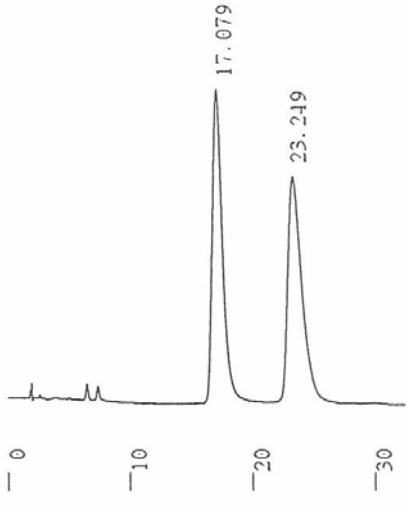


Column: ULTRON ES-BSA
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 7.0) / 1-Propanol / Caprylic Acid = 98 / 2 / 0.01
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Oral Anticoagulants

Warfarin

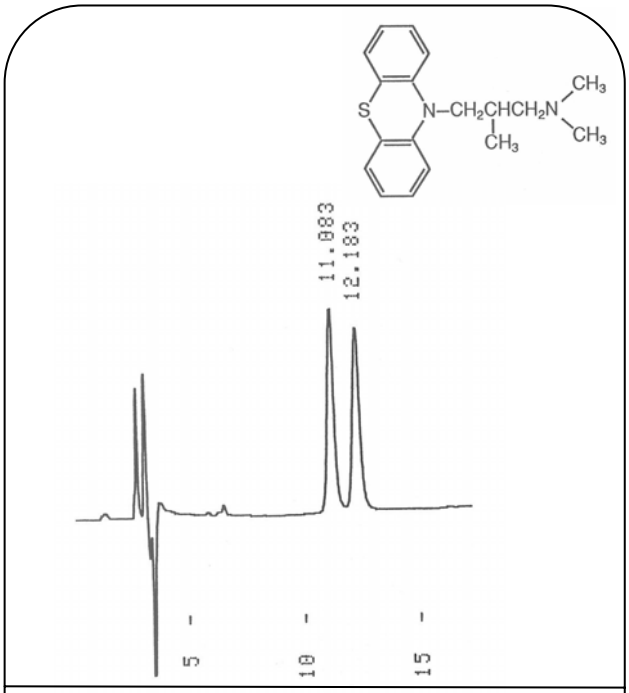




Column: ULTRON ES-BSA
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 7.0) / 1-Propanol / Caprylic Acid = 98 / 2 / 0.01
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

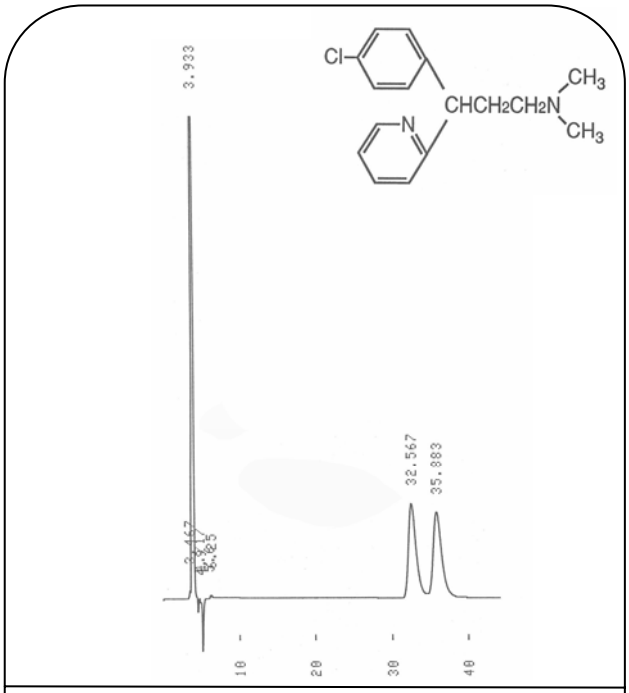
Antihistamines

Alimemazine



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 5.0) / CH_3CN = 70 / 30
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

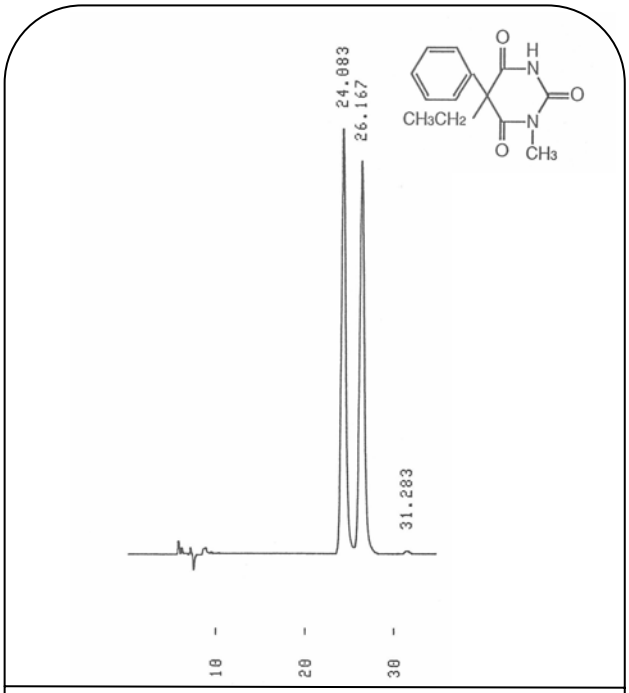
Chlorpheniramine



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 83 / 17
Flow Rate: 1.0 mL/min
Temperature: 15 ℃
Detection: UV-220 nm

Anticonvulsants

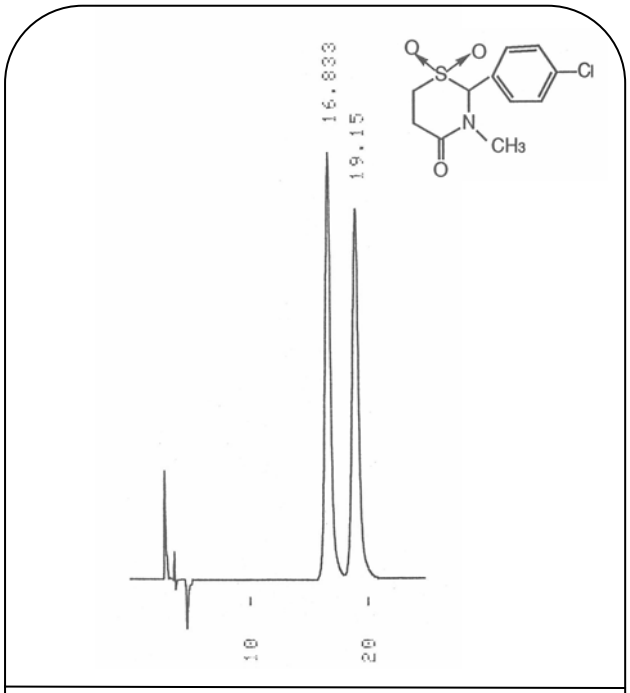
Mephobarbital



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 80 / 20
Flow Rate: 0.6 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Skeletal Muscle Relaxants

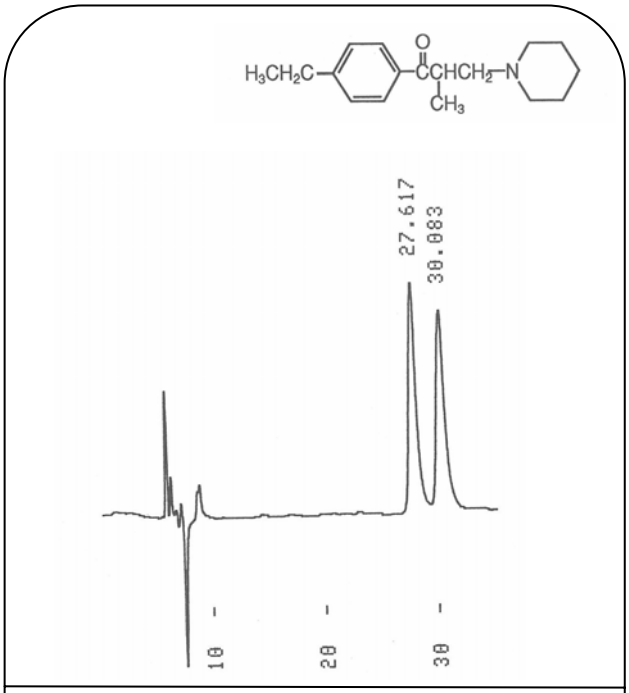
Chlormezanone



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 93 / 7
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

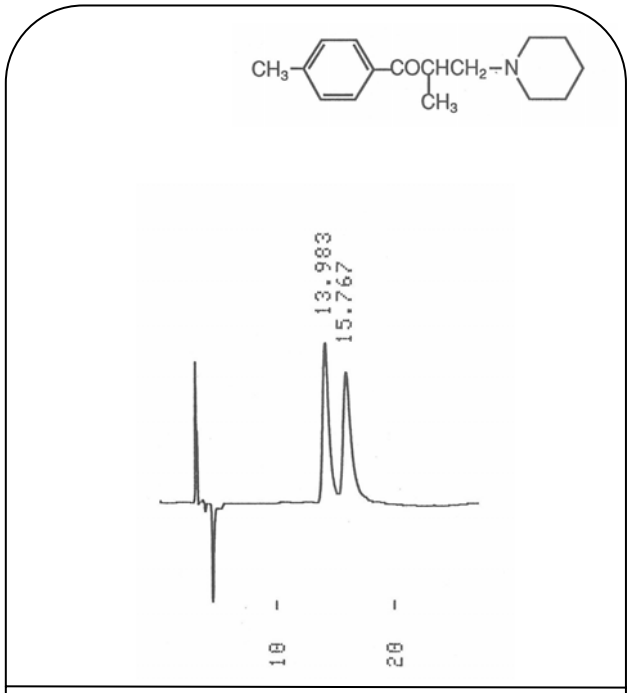
Skeletal Muscle Relaxants

Eperisone



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 80 / 20
Flow Rate: 0.6 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

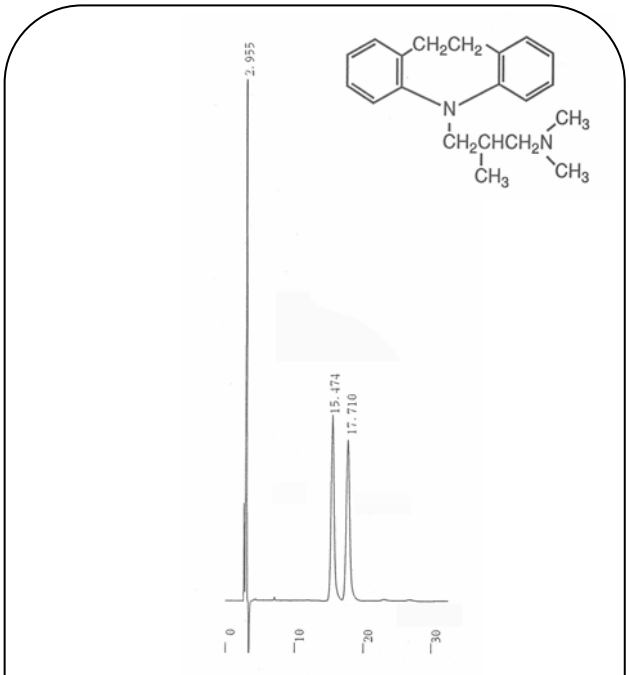
Tolperisone



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 85 / 15
Flow Rate: 1.2 mL/min
Temperature: 7 ℃
Detection: UV-220 nm

Antidepressants

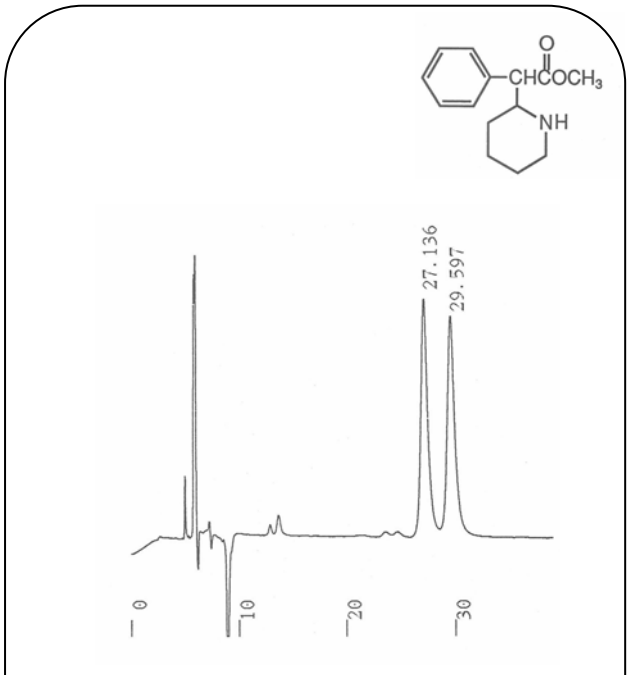
Trimipramine Maleate



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 75 / 25
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Central Nervous System Stimulants

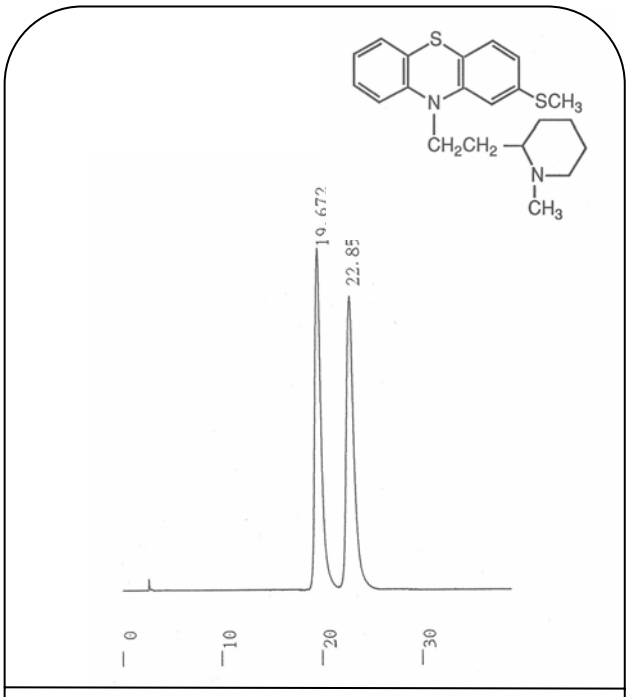
Methylphenidate



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0) / CH_3CN = 90 / 10
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Antipsychotic Drug

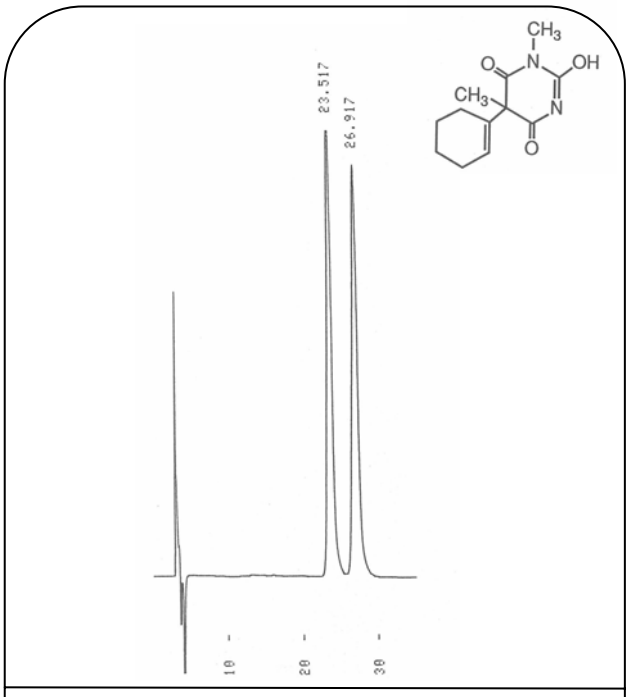
Thioridazine



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 75 / 25
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Hypnotics

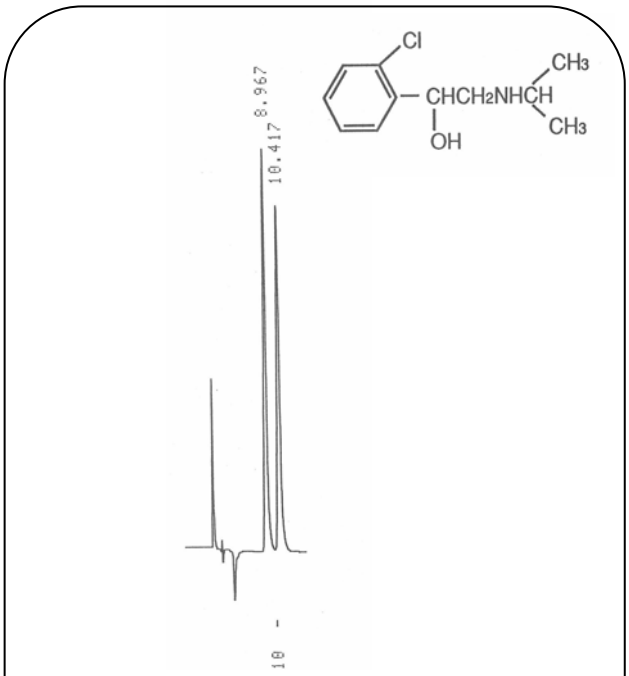
Hexobarbital



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 83 / 17
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

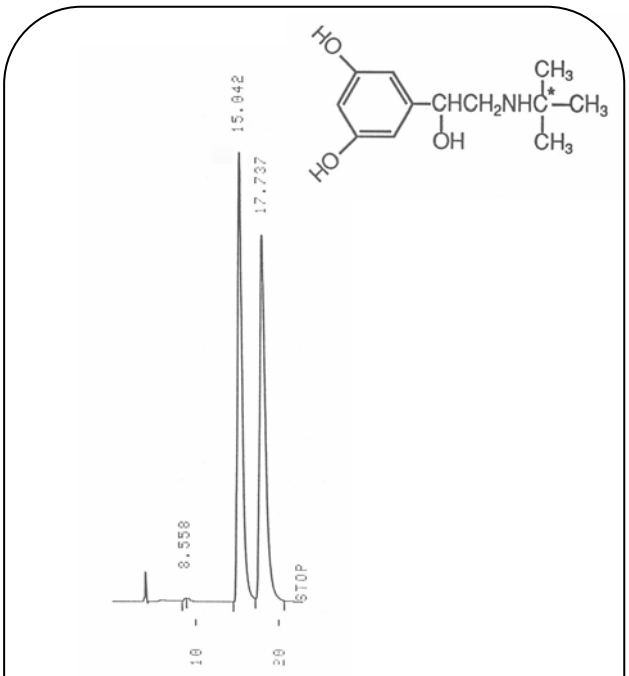
Bronchodilators

Clorprenaline



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 94 / 6
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

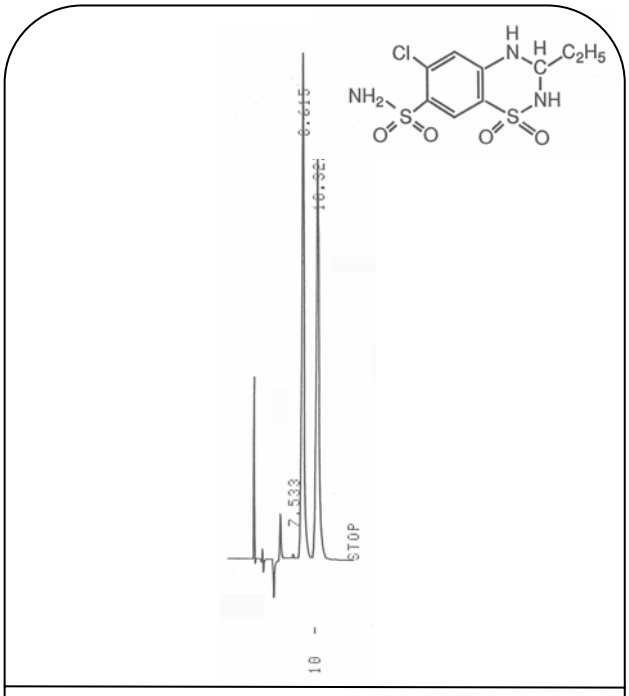
Terbutaline



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0) / CH_3CN = 99 / 1
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Diuretics

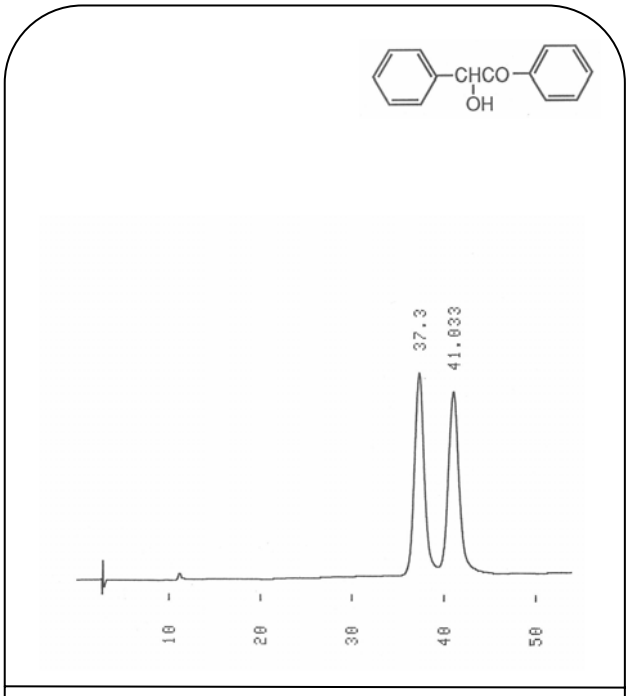
Ethiazide



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 92.5 / 7.5
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Others

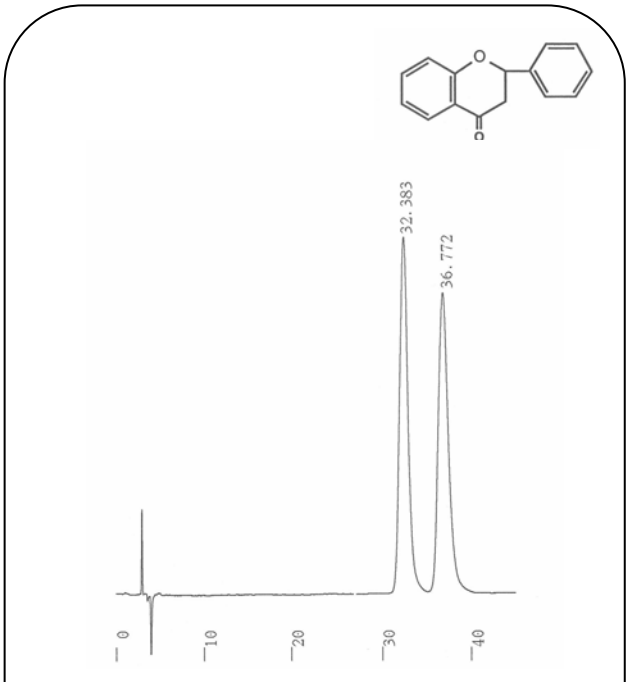
Benzoin



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 88 / 12
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

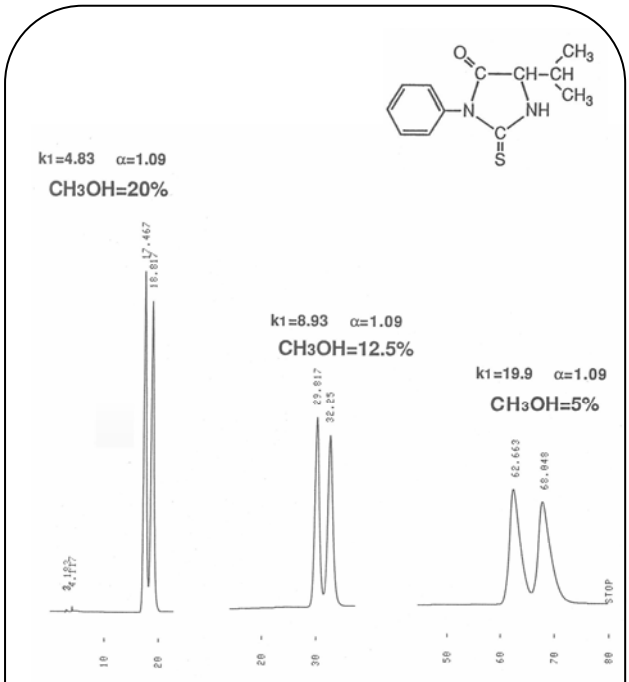
Others

Flavanone



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 80 / 20
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

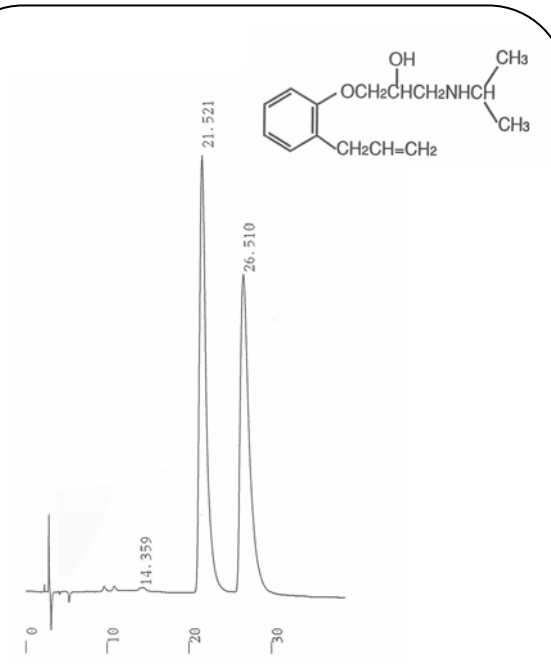
PTH-Valine



Column: ULTRON ES-CD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 3.0) / CH_3CN
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

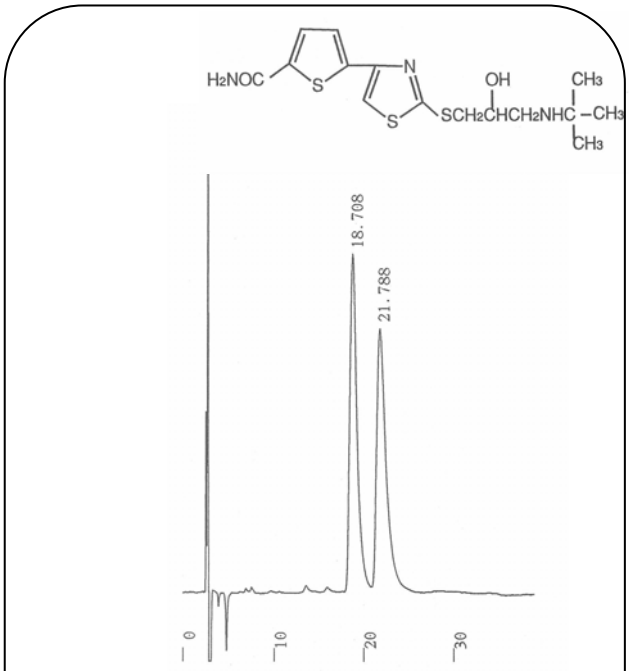
β-Blockers

Alprenolol



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 80 / 20
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

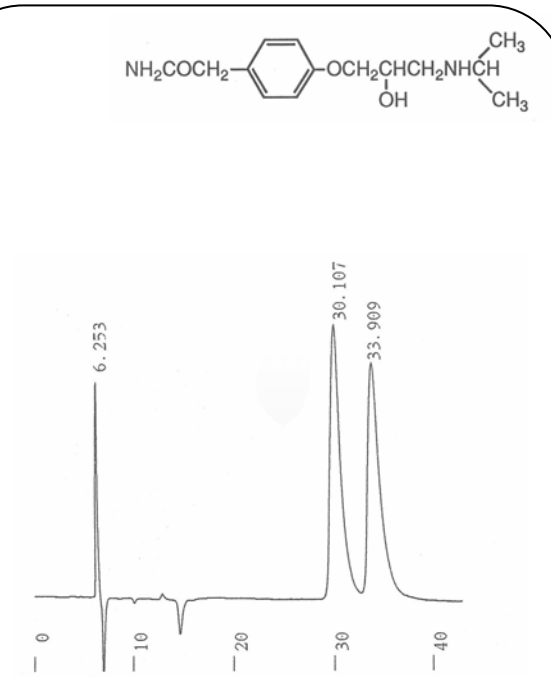
Arotinolol



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 75 / 25
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

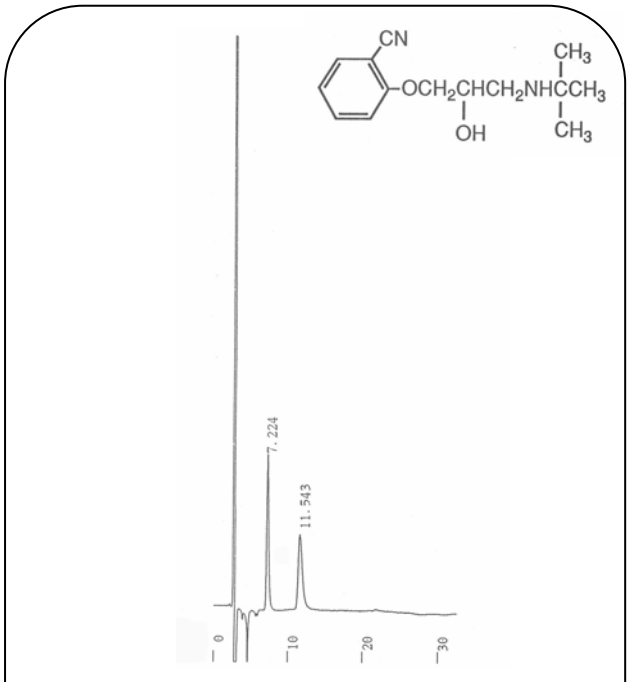
β-Blockers

Atenolol



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 6.0) / CH_3CN = 90 / 10
Flow Rate: 0.6 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

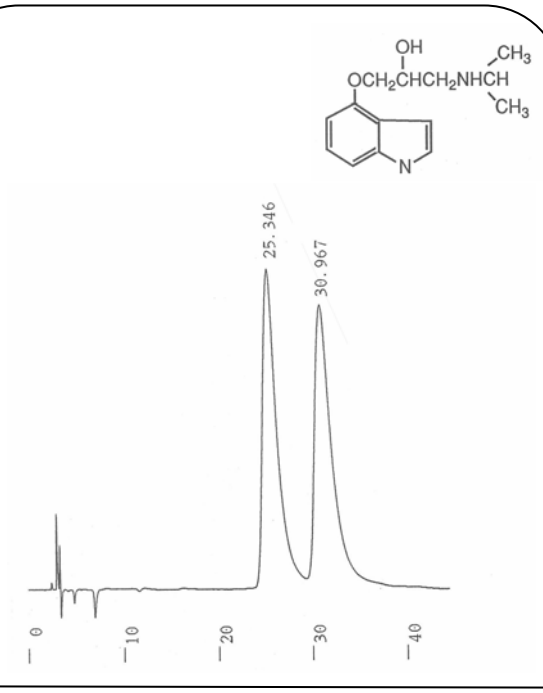
Bunitrolol



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 70 / 30
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

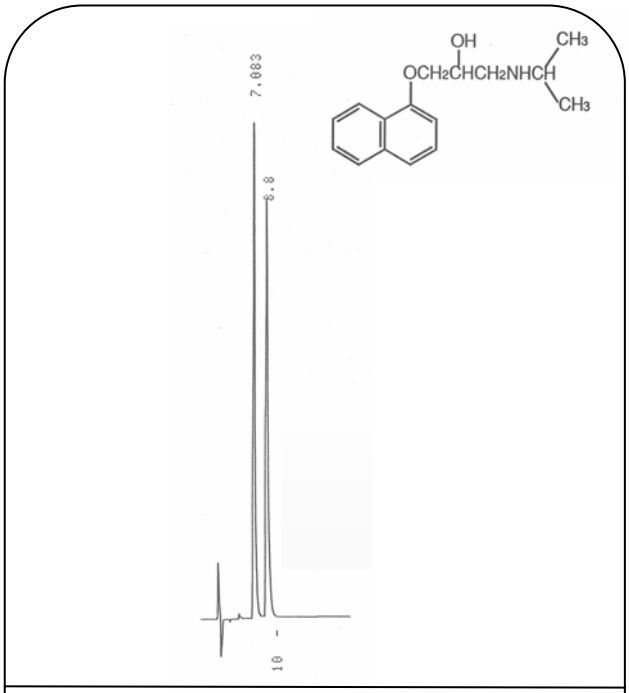
β-Blockers

Pindolol



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 90 / 10
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

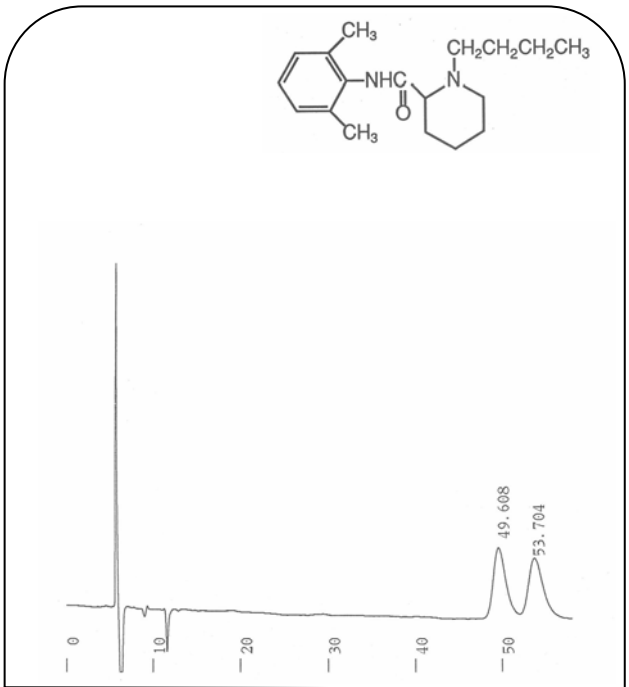
Propranolol



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 60 / 40
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Local Anesthetics

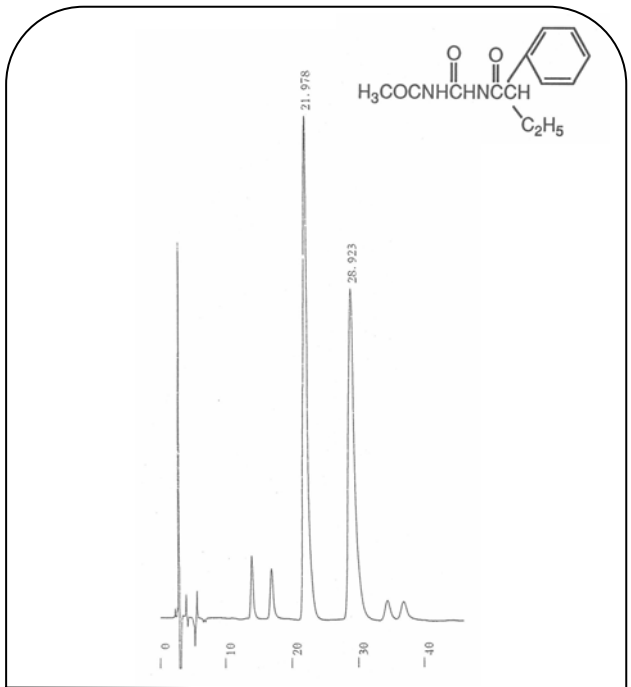
Bupivacaine



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 80 / 20
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

Anticonvulsants

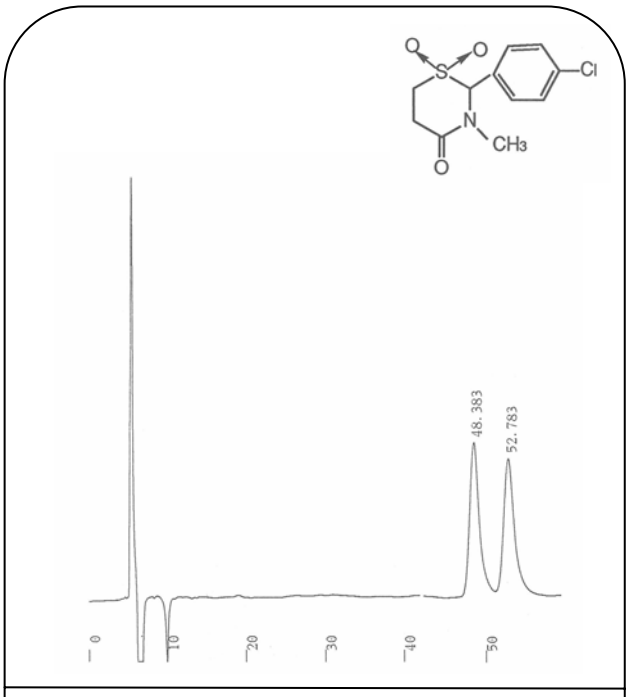
Acetylpheneturide



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 76 / 24
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-220 nm

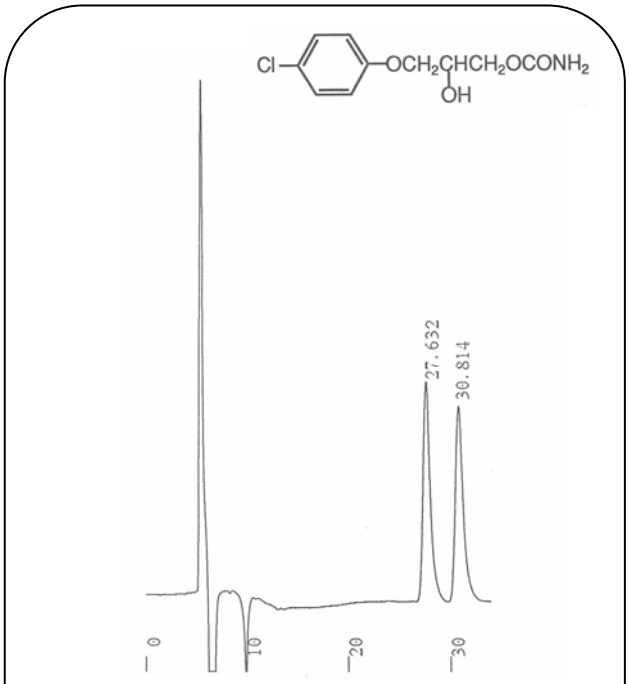
Skeletal Muscle Relaxants

Chlormezanone



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 70 / 30
Flow Rate: 0.6 mL/min
Temperature: 9 ℃
Detection: UV-220 nm

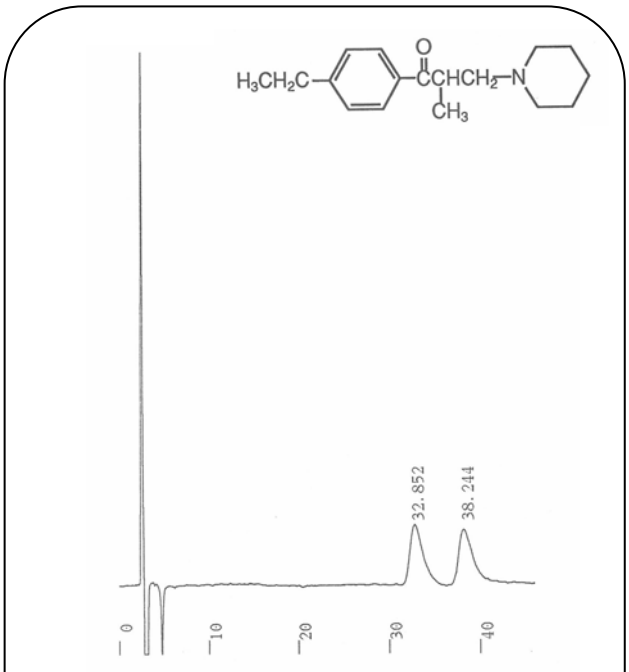
Chlorphenesin



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 70 / 30
Flow Rate: 0.6 mL/min
Temperature: 9 ℃
Detection: UV-220 nm

Skeletal Muscle Relaxants

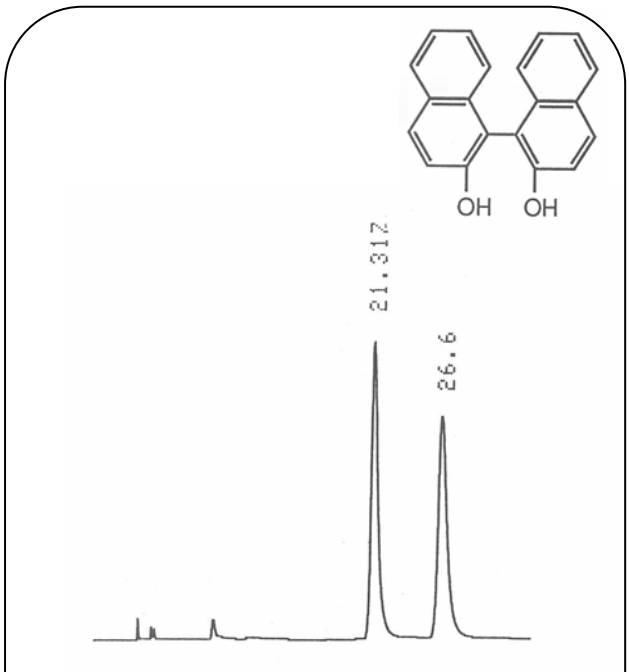
Eperisone



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 70 / 30
Flow Rate: 1.2 mL/min
Temperature: 9 ℃
Detection: UV-220 nm

Others

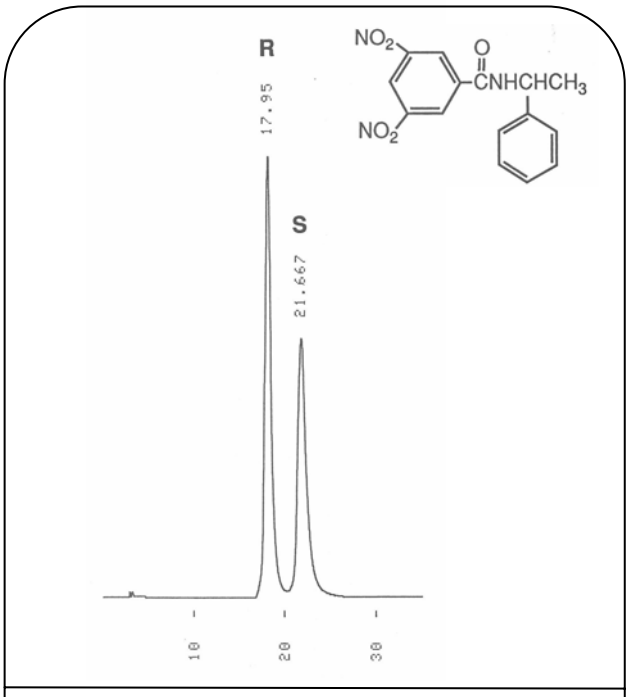
1,1'-Bi-2-naphthol



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: Hexane / Dichloromethane/ Methanol
= 75 / 25 / 5
Flow Rate: 1.2 mL/min
Temperature: 25 ℃
Detection: UV-254 nm

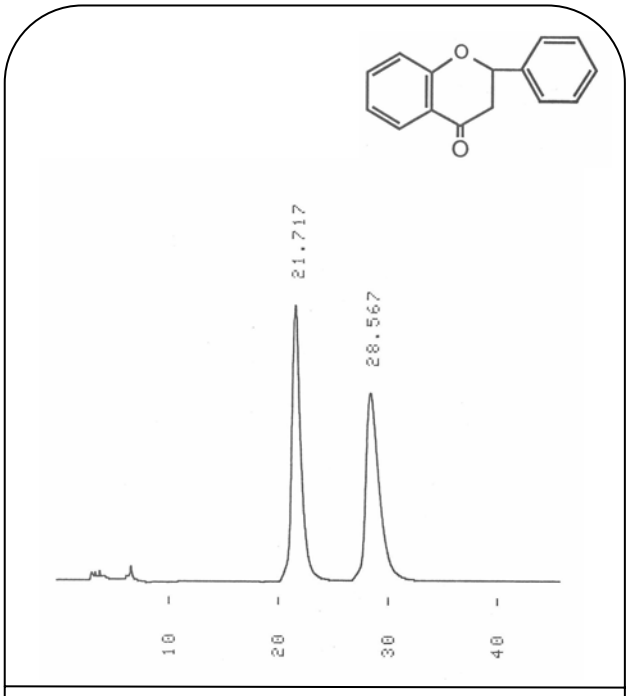
Others

N-(3,5-Dinitrobenzoyl)-α-methylbenzylamine



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: Hexane / Ethanol = 85 / 15
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-254 nm

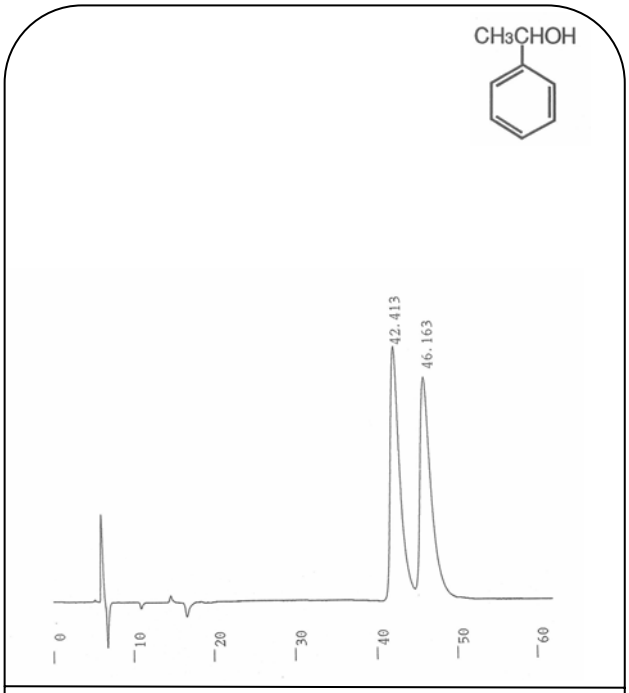
Flavanone



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: Hexane / Ethanol = 99 / 1
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-254 nm

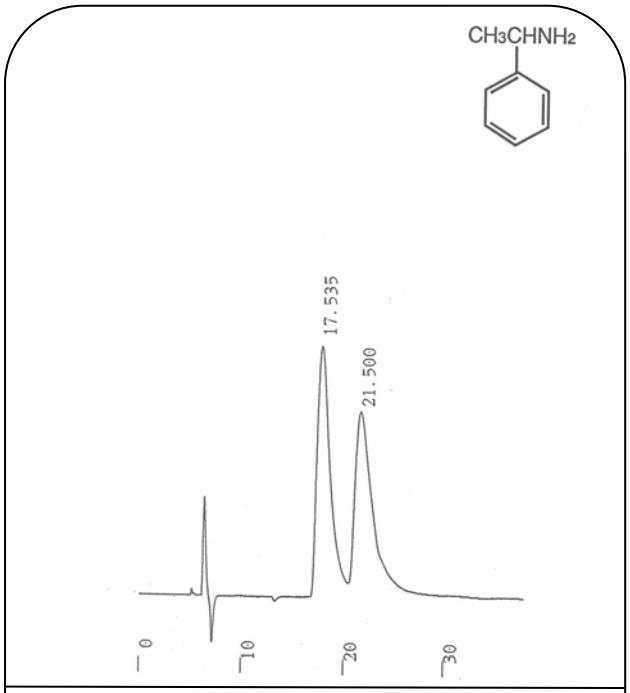
Others

α-Phenylethyl Alcohol



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 90 / 10
Flow Rate: 0.6 mL/min
Temperature: 15 ℃
Detection: UV-220 nm

α-Phenylethylamine

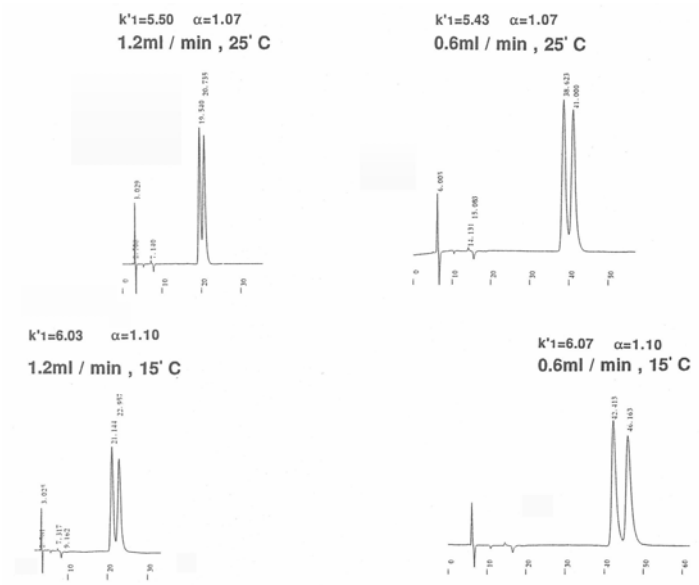


Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 95 / 5
Flow Rate: 0.6 mL/min
Temperature: 15 ℃
Detection: UV-220 nm

Others

The Relationship Between Flow Ratio and Capacitor Ratio (k') of Column Temperature, Optics Recognition Ability (α)

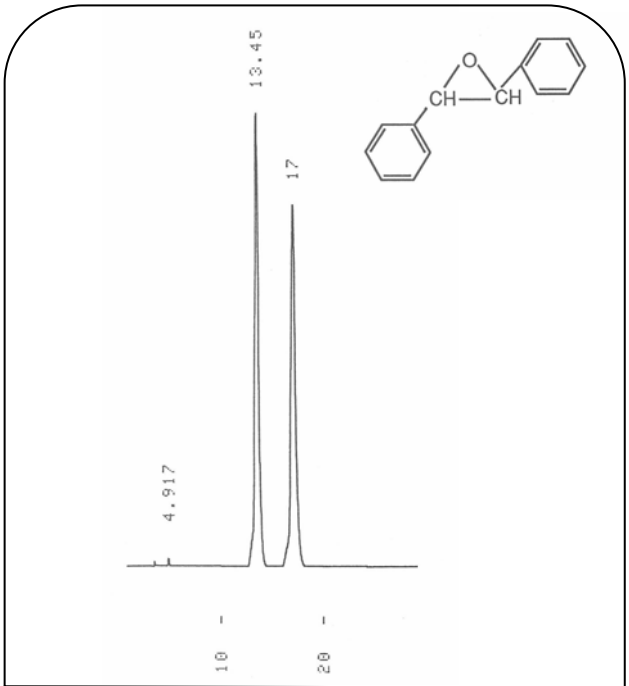
α-Phenylethylamine



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: 20 mM KH_2PO_4 (pH 4.6) / CH_3CN = 90 / 10
Detection: UV-220 nm

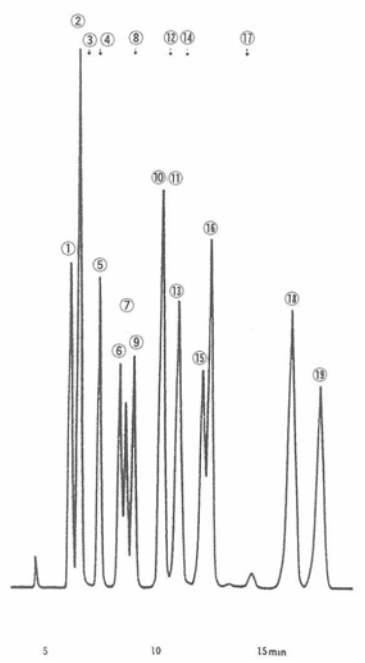
Others

trans-Stilbene Oxide



Column: ULTRON ES-PhCD
Size: 150 mm x 6.0 mm I.D.
Mobile Phase: Hexane / Methanol = 99.9 / 0.1
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: UV-254 nm

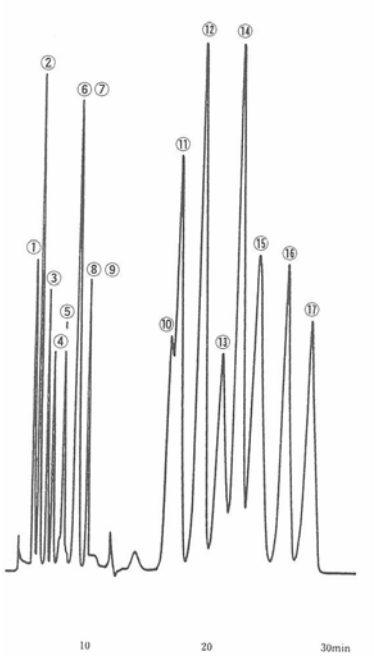
Elution Position of The Aliphatic Organic Acid



① Citric Acid
② Tartaric Acid
③ Glyoxylic Acid
④ Malic Acid
⑤ Malonic Acid
⑥ Succinic Acid
⑦ Glycolic Acid
⑧ Formic Acid
⑨ Lactic Acid
⑩ Acetic Acid
⑪ Fumaric Acid
⑫ Levulinic Acid
⑬ Adipic Acid
⑭ Pyroglutamic Acid
⑮ Propionic Acid
⑯ Acrylic Acid
⑰ Pivalic Acid
⑱ Methacrylic Acid
⑲ Crotonic Acid

Column: ULTRON PS-80H
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: $HClO_4$aq. (pH2.1)
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Detection: UV-210 nm

Elution Position of The Aromatic Organic Acid

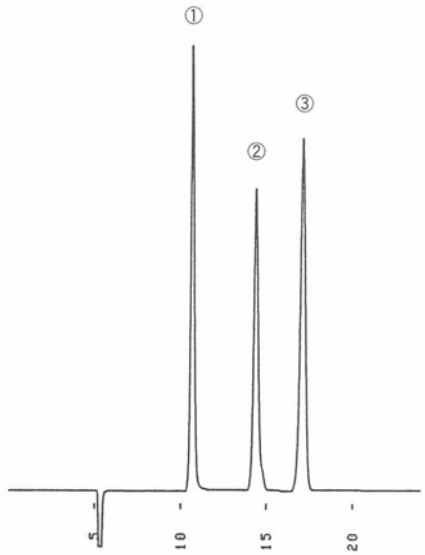


① Citric Acid
② Tartaric Acid
③ Malonic Acid
④ Succinic Acid
⑤ Lactic Acid
⑥ Acetic Acid
⑦ Gallic Acid
⑧ Propionic Acid
⑨ o-Phthalic Acid
⑩ Phenoxyacetic Acid
⑪ m-Hydroxybenzoic Acid
⑫ p-Hydroxybenzoic Acid
⑬ Vanilic Acid
⑭ Sorbic Acid
⑮ Caffeic Acid
⑯ Benzoic Acid
⑰ o-Hydroxybenzoic Acid

Column: ULTRON PS-80H
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: 10 % CH3CN Addition HClO4aq. (pH2.1)
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Detection: UV-210 nm

Alcohols Aldehydes

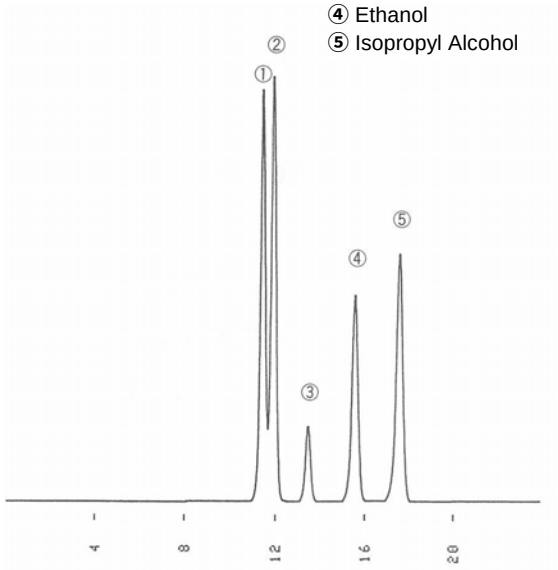
① Formaldehyde
② Acetaldehyde
③ Ethanol



Column: ULTRON PS-80H
Size: 300 mm x 8.0 mm I.D. + 50 mm x 8.0 mm I.D.
Mobile Phase: $HClO_4$aq (pH 2.1)
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Pressure: 25 kgf/cm²
Detection: RI, 32x10⁻⁶ RIUFS

Alcohols

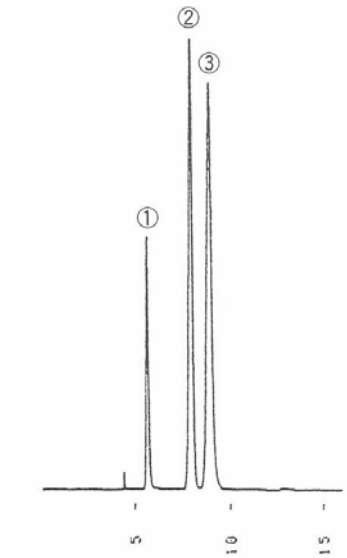
① Ethylene Glycol
② Diethylene Glycol
③ Methanol
④ Ethanol
⑤ Isopropyl Alcohol



Column: ULTRON PS-80H
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Pressure: 25 kgf/cm²
Detection: RI, 32x10⁻⁶ RIUFS
Inj. Vol.: 6.0 uL (10 mg/mL)

Uronic Acid, Acetylation Amino Sugar

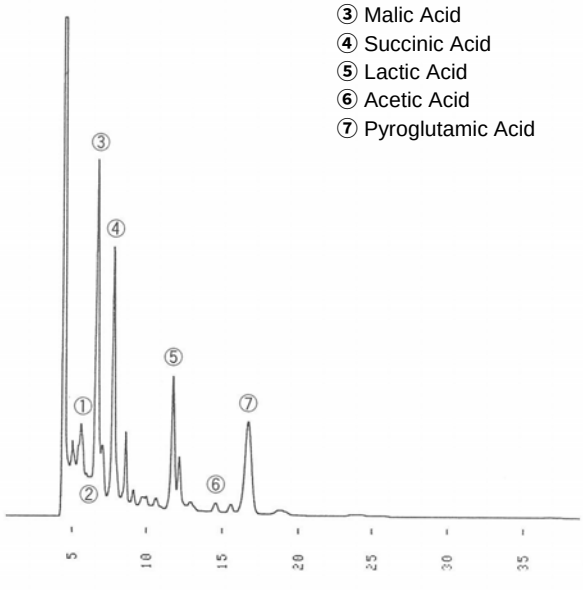
① Glucuronic Acid
② N-Acetylglucosamine
③ N-Acetylgalactosamine



Column: ULTRON PS-80H
Size: 300 mm x 8.0 mm I.D. + 50 mm x 8.0 mm I.D.
Mobile Phase: $HClO_4$aq (pH 2.1)
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Pressure: 25 kgf/cm²
Detection: UV-210 nm

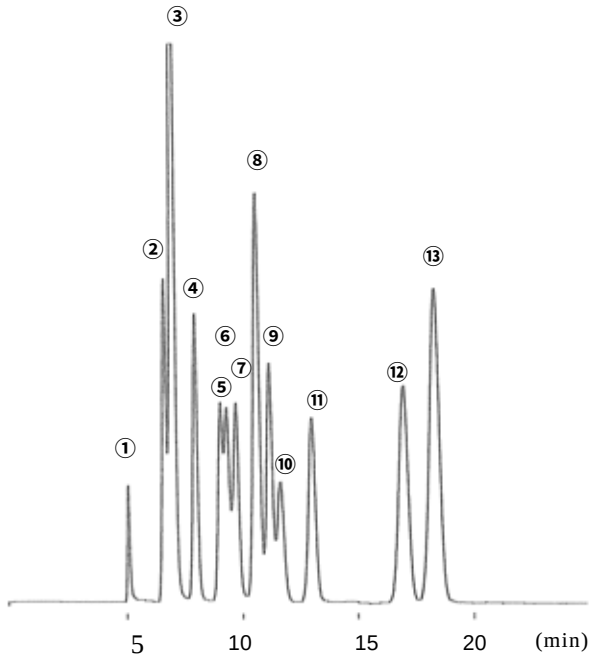
Analysis of The Soy Sauce

① Citric Acid
② Tartaric Acid
③ Malic Acid
④ Succinic Acid
⑤ Lactic Acid
⑥ Acetic Acid
⑦ Pyroglutamic Acid



Column: ULTRON PS-80H
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: $HClO_4$aq (pH 2.1)
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Detection: UV-210 nm

Analysis of Aliphatic Organic Acid

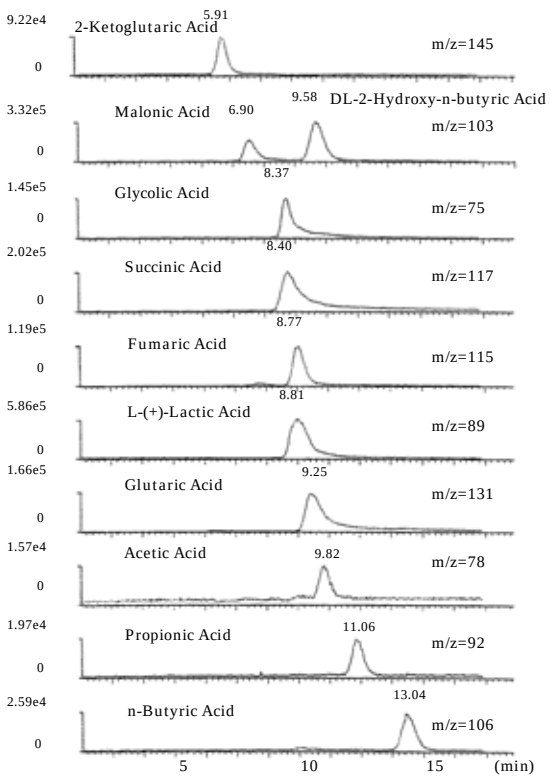


① Citric Acid
② Tartaric Acid
③ Maleic Acid
④ Malonic Acid
⑤ Succinic Acid
⑥ Glycolic Acid
⑦ Lactic Acid
⑧ Fumaric Acid
⑨ Acetic Acid
⑩ Adipic Acid
⑪ Propionic Acid
⑫ Methacrylic Acid
⑬ Crotonic Acid

Column: ULTRON PS-80H
Size: 250 mm x 2.0 mm I.D.
Mobile Phase: $HClO_4$aq (pH 2.1)
Flow Rate: 0.05 mL/min

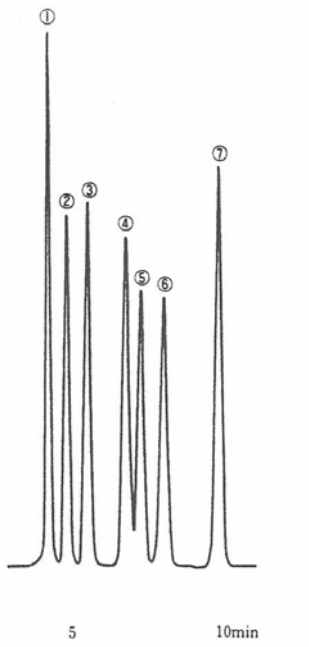
Temperature: 60 ℃
Press.:0.7 MPa
Injection Amount: 2.5 uL
Detection: UV-210 nm

Mass Chromatograms Obtained by TIC of 11 Carboxylic Acids.



Column : ULTRON PS-80H
Dimensions : 250 mm L × 2.0 mm I.D.
Mobile Phase : 0.1% Formic Acid (pH 2.3)
Flow Rate : 0.07 ml/min
Temperature : 55℃
Detection : ESI Positive and Negative, Range: m/z 50～350

Elution Position of Sugar and Sugar Alcohol for PS-80N

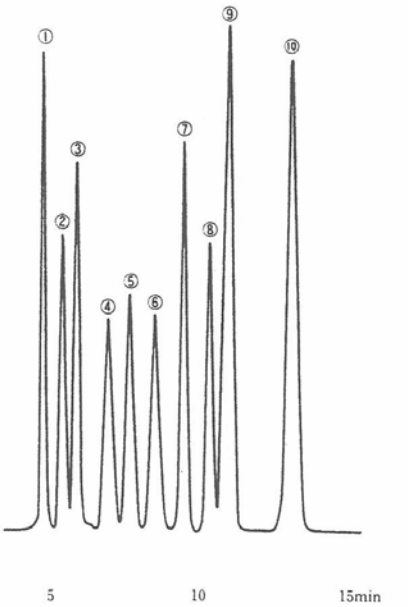


① Dextran T-10
② Raffinose
③ Lactose
④ Glucose
⑤ Galactose
⑥ Arabinose
⑦ Ethanol

Column: ULTRON PS-80N
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min

Temperature: 60 ℃
Detection: RI, 16x10^{-5} RIUFS
Sample: ea. 15 mg/mL, Ethanol 50 uL/mL

Elution Position of Sugar and Sugar Alcohol for PS-80C

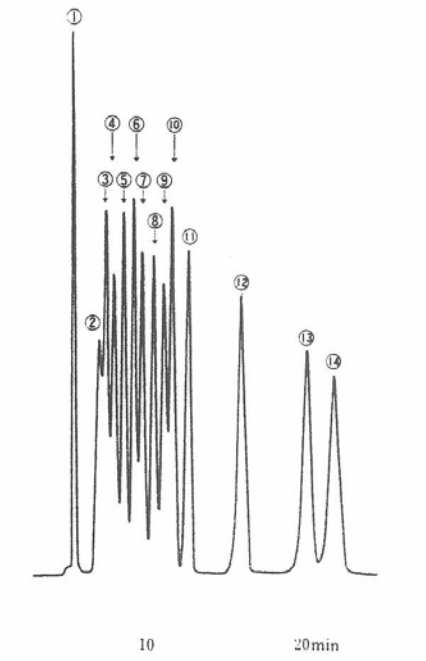


① Dextran T-10
② Raffinose
③ Sucrose
④ Glucose
⑤ Galactose
⑥ Fructose
⑦ Adonitol
⑧ Glycerol
⑨ Ethanol + Mannitol
⑩ Xylitol +Sorbitol

Column: ULTRON PS-80C
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min

Temperature: 80 ℃
Detection: RI, 16x10^{-5} RIUFS
Sample: ea. 10 uL/mL

Elution Position of Sugar and Sugar Alcohol for PS-80P

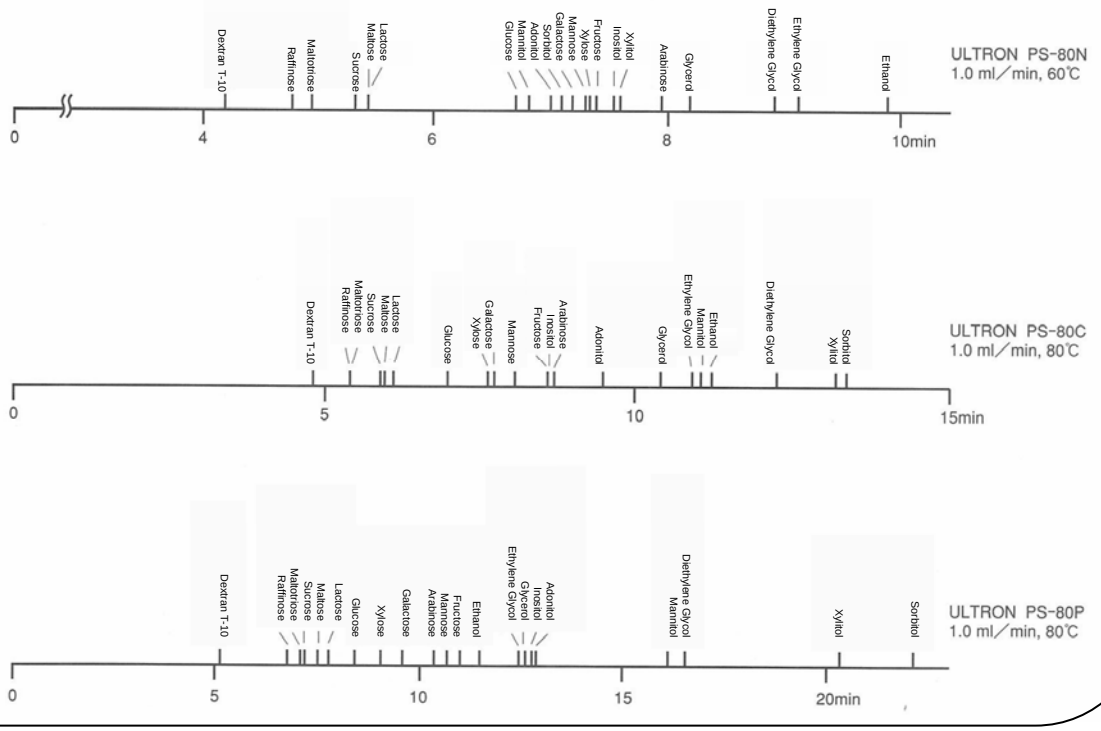


① Dextran T-10
② Raffinose
③ Sucrose
④ Lactose
⑤ Glucose
⑥ Xylose
⑦ Galactose
⑧ Arabinose
⑨ Fructose
⑩ Ethanol
⑪ Glycerol
⑫ Mannitol
⑬ Xylitol
⑭ Sorbitol

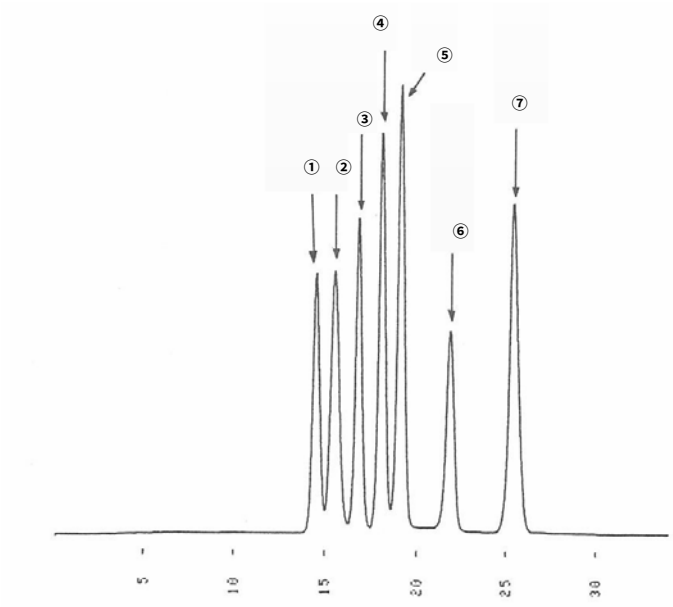
Column: ULTRON PS-80P
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min

Temperature: 80 ℃
Detection: RI, 16x10^{-5} RIUFS
Sample: ea. 10 uL/mL

Retention Index of The Standard Sample



Sugar and Sugar Alcohol

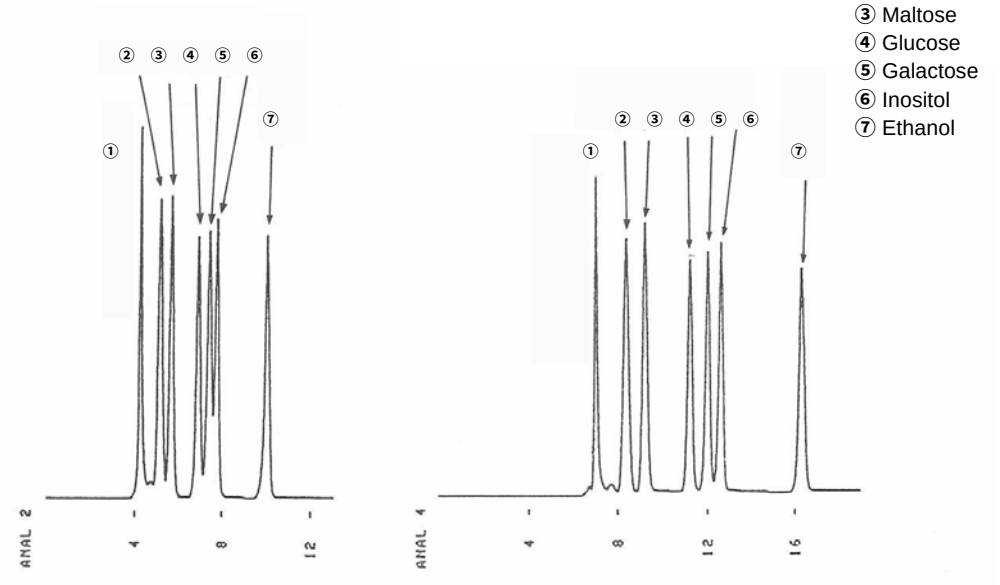


① Sucrose
② Lactose
③ Glucose
④ Xylosel
⑤ Galactose
⑥ Fructose
⑦ Inositol

Column: ULTRON PS-80P
Size: 300 mm x 8.0 mm I.D. + 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min

Temperature: 80 ℃
Pressure: 20 kgf/cm^2
Detection: RI, 16x10^{-5} RIUFS

Comparison of Retention Between PS-80N 300 mm ✕ 8.0 mm and 500 mm ✕ 8.0 mm

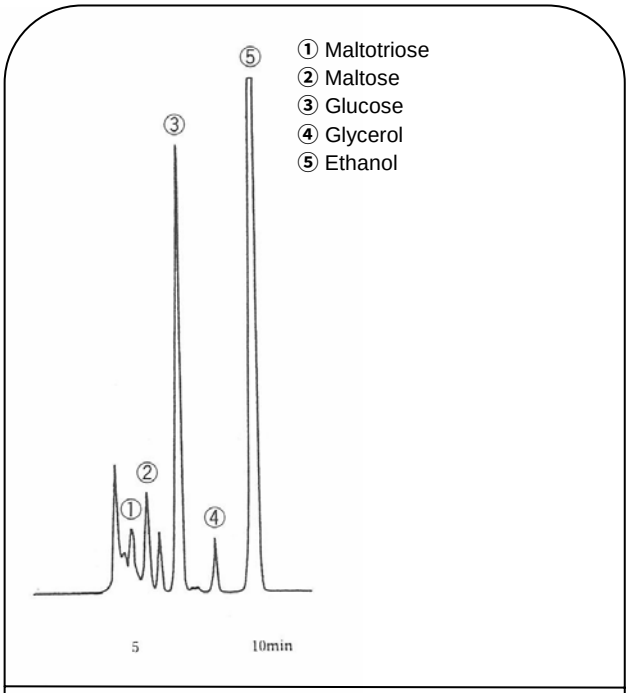


① Dextran T-10
② Maltotriose
③ Maltose
④ Glucose
⑤ Galactose
⑥ Inositol
⑦ Ethanol

Column: ULTRON PS-80N
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min
Pressure: 20 kgf/cm^2

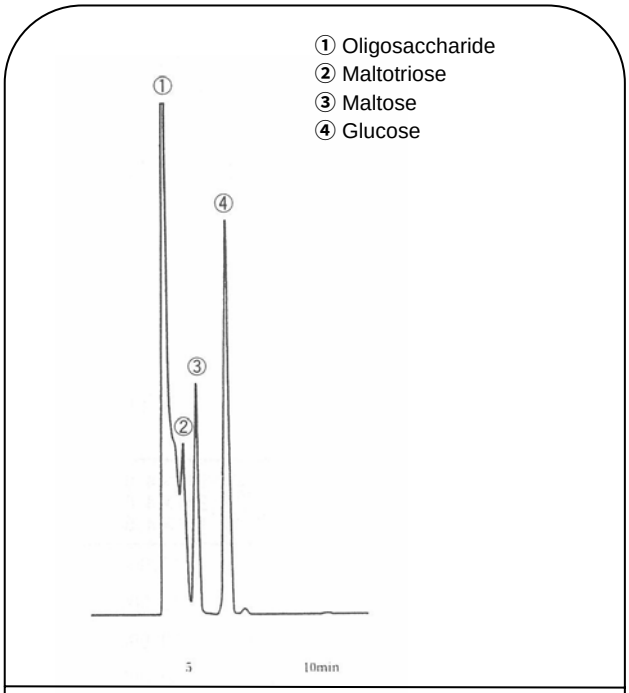
Column: ULTRON PS-80N·L
Size: 500 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min
Pressure: 35 kgf/cm^2

Sake



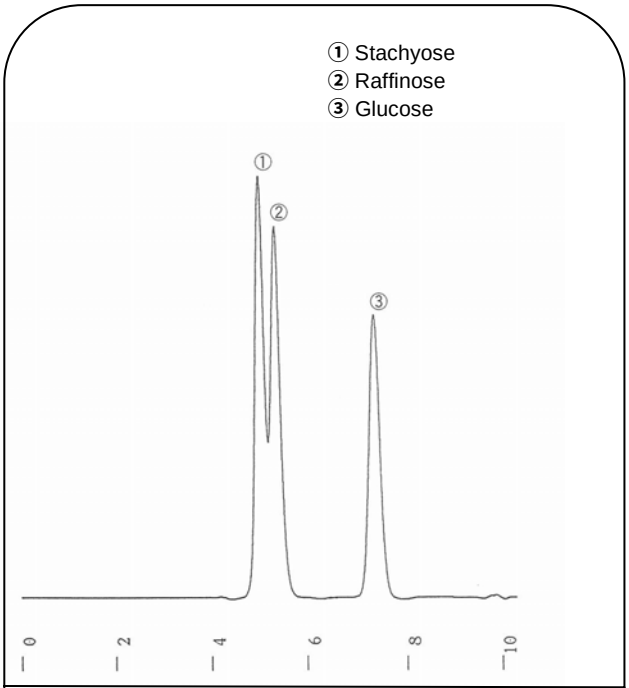
Column: ULTRON PS-80N
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Pressure: 22 kgf/cm²
Detection: RI, 16x10⁻⁵ RIUFS
Injection Vol.: 10 uL

Starch Syrup



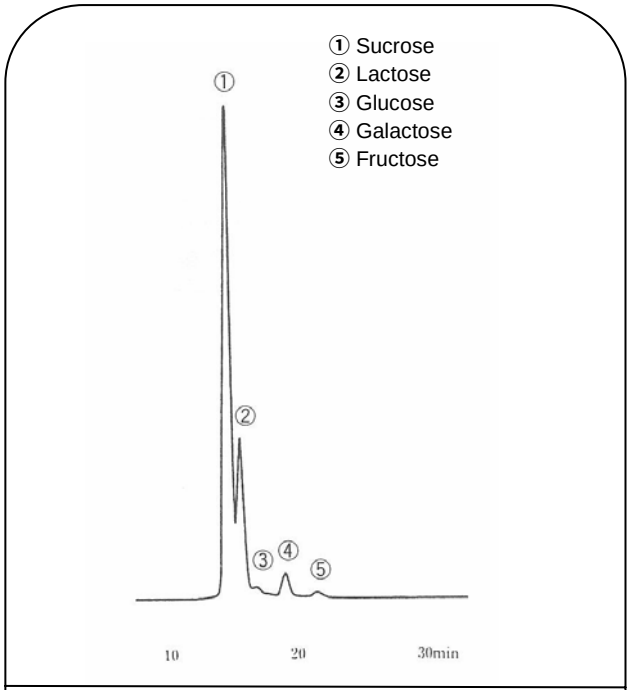
Column: ULTRON PS-80N
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Pressure: 22 kgf/cm²
Detection: RI, 16x10⁻⁵ RIUFS
Injection Vol.: 5 uL(25 mg/mL)

Separation of Stachyose and Raffinose



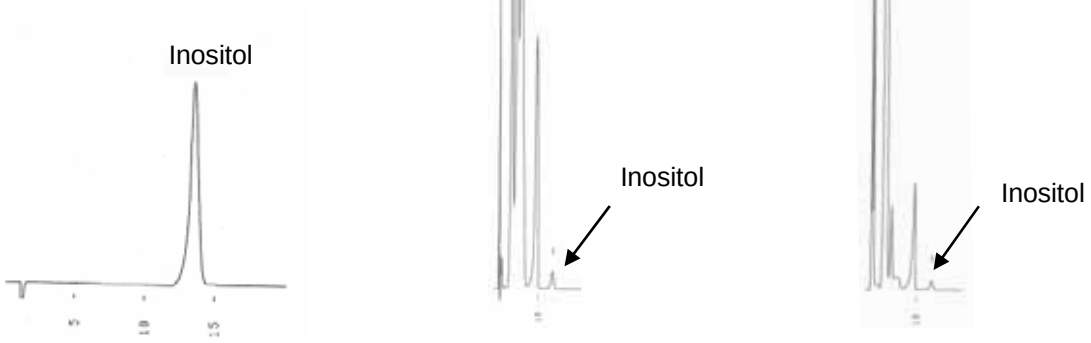
Column: ULTRON PS-80N
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 1.0 mL/min
Temperature: 60 ℃
Pressure: 25 kgf/cm²
Detection: RI, 128x10⁻⁶ RIUFS
Injection Vol.: 10 uL(2 mg/mL)

Yoghurt Drink



Column: ULTRON PS-80C
Size: 300 mm x 8.0 mm I.D.
Mobile Phase: H_2O
Flow Rate: 0.5 mL/min
Temperature: 80 ℃
Pressure: 20 kgf/cm²
Detection: RI, 8x10⁻⁵ RIUFS
Injection Vol.: 10 uL

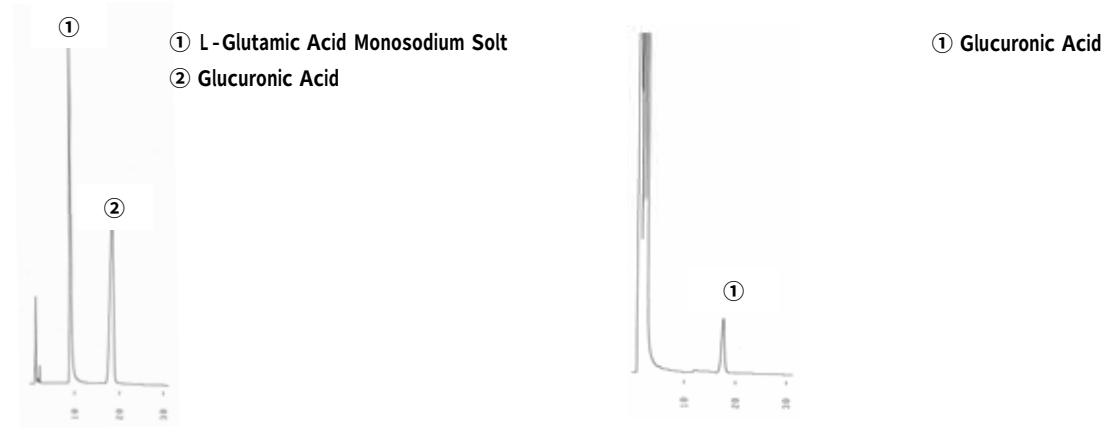
Inositol in Health Drink



Column: ULTRON CI
Size: 200 mm x 4.6 mm I.D.
Mobile Phase: CH_3CN / H_2O = 60 / 40

Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: RI

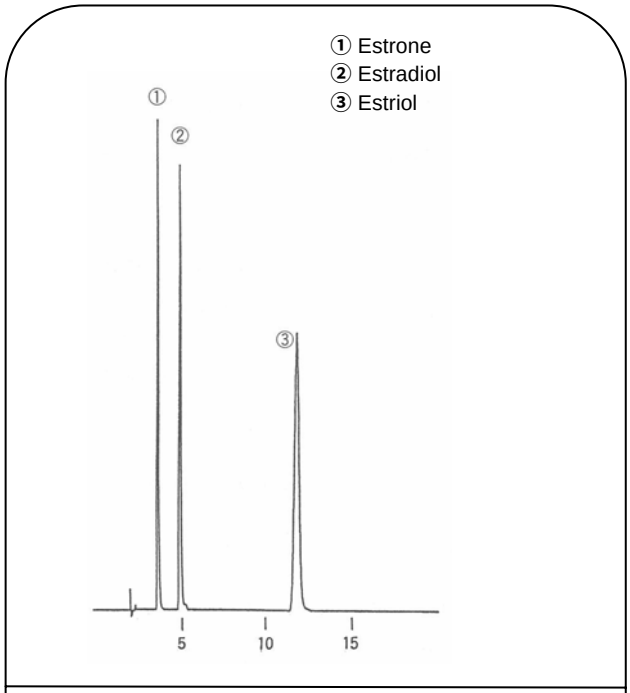
Glucuronic Acid in Health Drink



Column: ULTRON CL
Size: 150 mm x 4.0 mm I.D.
Mobile Phase: **20mM KH_2PO_4**

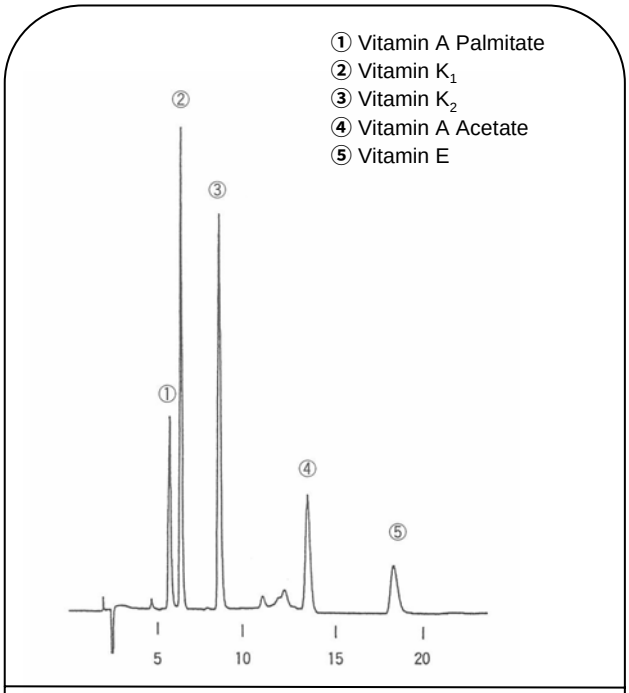
Flow Rate: 0.8 mL/min
Temperature: 70 ℃
Detection: UV-210 nm

Female Sex Hormone



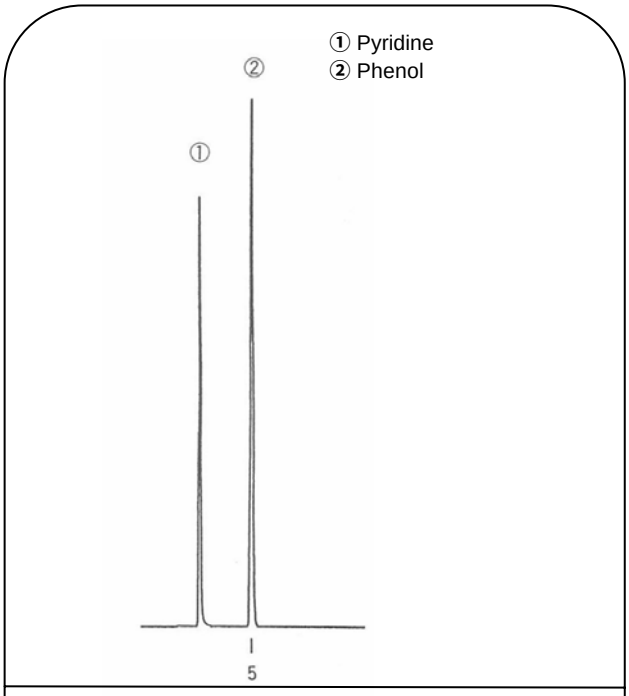
Column: ULTRON VX-SIL
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: n-Hexane / Ethanol = 90 / 10
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV-280 nm

The Fat-soluble Vitamins



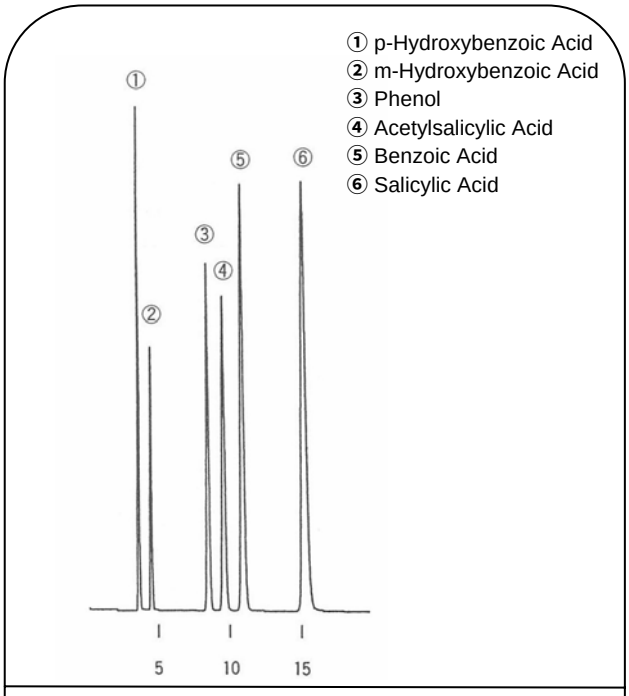
Column: ULTRON VX-SIL
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: n-Hexane / Dichloromethane = 90 / 10
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV-254 nm

Pyridine, Phenol Test



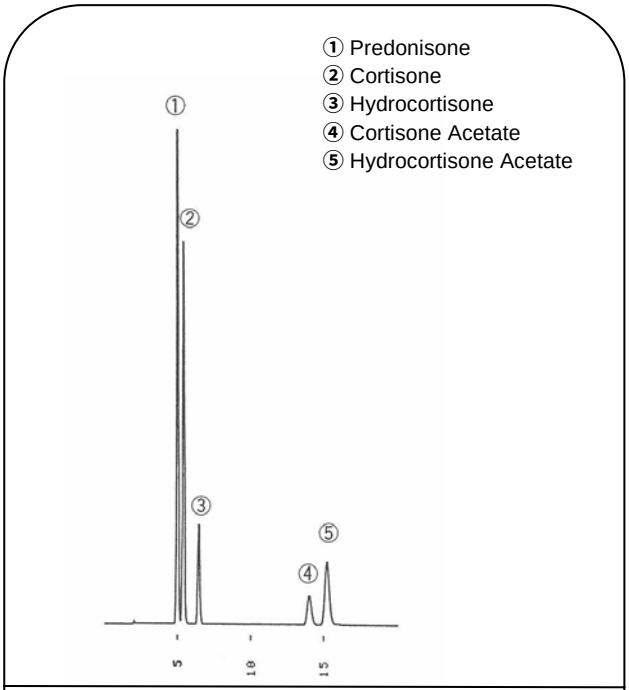
Column: ULTRON VX-ODS
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: CH_3CN / H_2O = 30 / 70
Flow Rate: 1.0 mL/min
Temperature: 30 ℃
Detection: UV-254 nm

Acidic Compounds



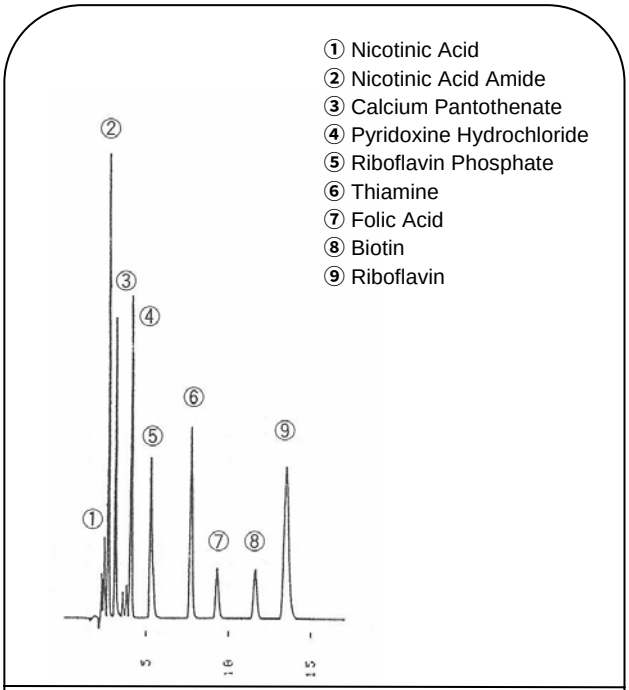
Column: ULTRON VX-ODS
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM $(NH_4)_3PO_4$ (pH 2.5) /
CH_3CN = 80 / 20
Flow Rate: 1.0 mL/min
Temperature: 30 ℃
Detection: UV-254 nm

Separation of The Steroid



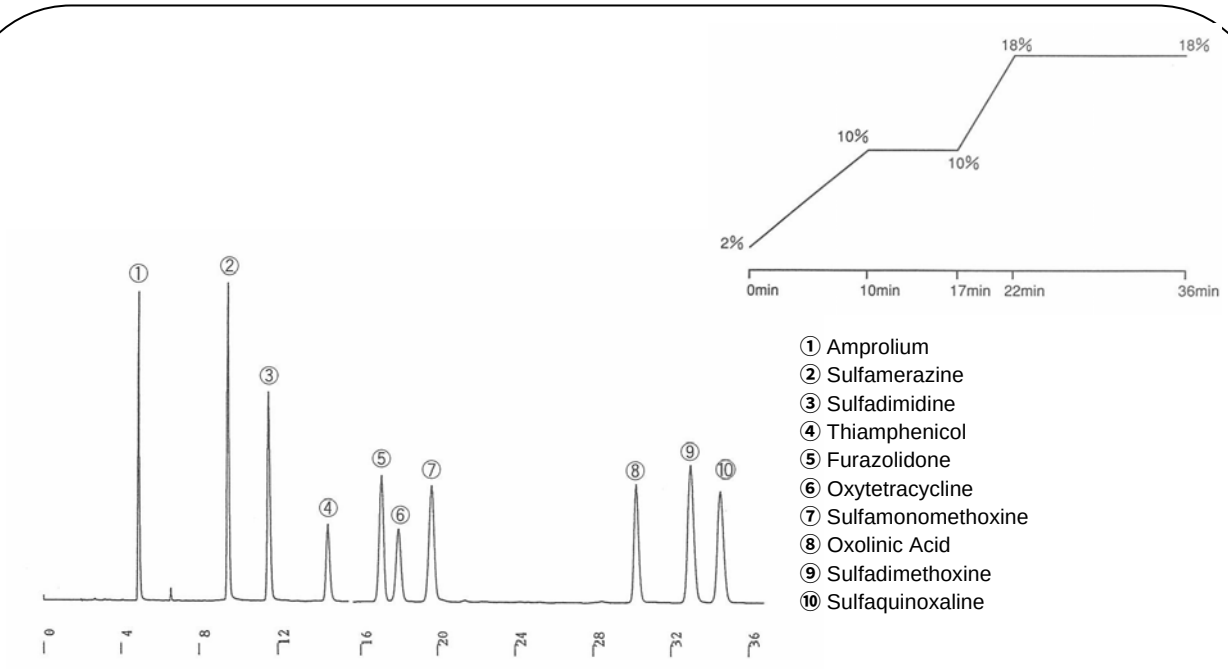
Column: ULTRON VX-ODS
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: H_2O / CH_3OH / THF = 70 / 10 / 20
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-254 nm

The Water-soluble Vitamin



Column: ULTRON VX-ODS
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM H_3PO_4 /
5 mM $CH_3(CH_2)_5SO_3Na$= 91 / 9
Flow Rate: 1.0 mL/min
Temperature: 45 ℃
Detection: UV-210 nm

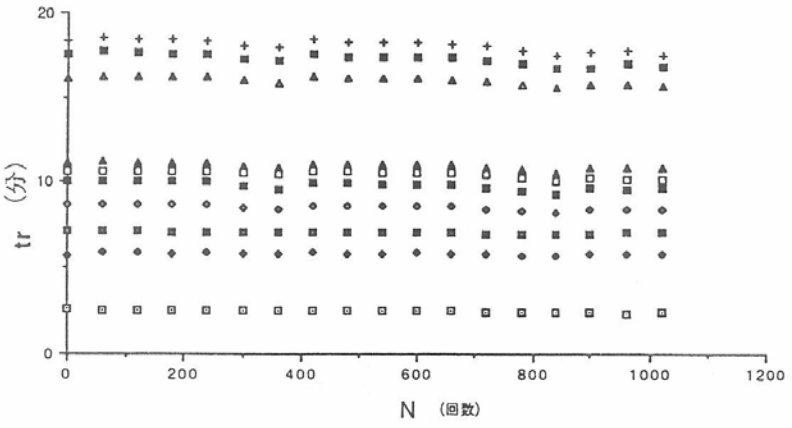
The Synthetic Antibacterial Medicine Simultaneity Analysis



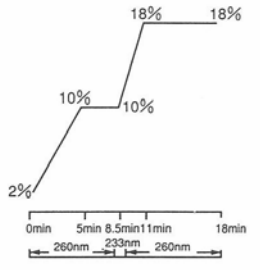
① Amprolium
② Sulfamerazine
③ Sulfadimidine
④ Thiamphenicol
⑤ Furazolidone
⑥ Oxytetracycline
⑦ Sulfamonomethoxine
⑧ Oxolinic Acid
⑨ Sulfadimethoxine
⑩ Sulfaquinoxaline

Column: ULTRON VX-ODS 5 µm
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: A 10 mM TFA
B CH_3CN
Flow Rate: 1.0 mL/min
Temperature: 40 ℃

Synthetic Antibacterial Medicine Repeat Test

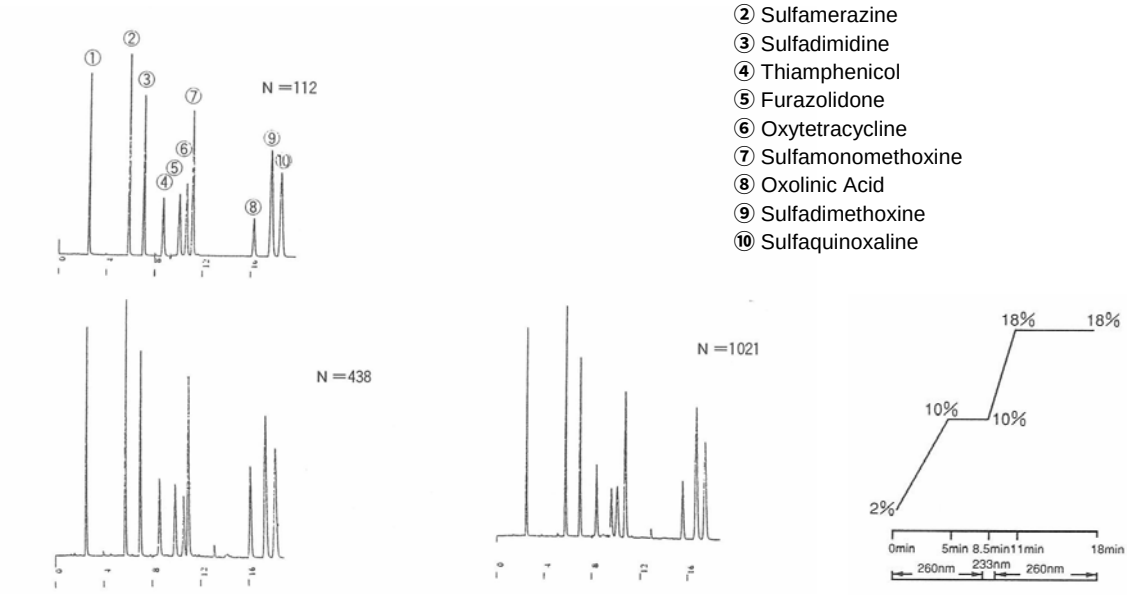


① Amprolium
② Sulfamerazine
③ Sulfadimidine
④ Thiamphenicol
⑤ Furazolidone
⑥ Oxytetracycline
⑦ Sulfamonomethoxine
⑧ Oxolinic Acid
⑨ Sulfadimethoxine
⑩ Sulfaquinoxaline



Column: ULTRON VX-ODS 5 µm
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: A 10 mM TFA
B CH_3CN
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-254 nm

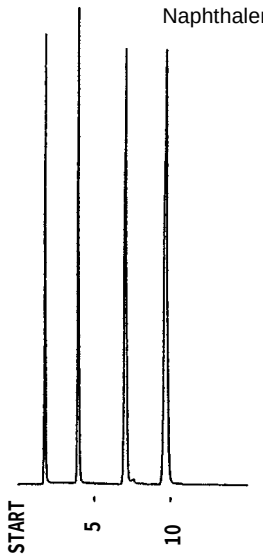
Chromatogram of The Repeat Test



Column: ULTRON VX-ODS 5 μm
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: A 10 mM TFA
B CH_3CN

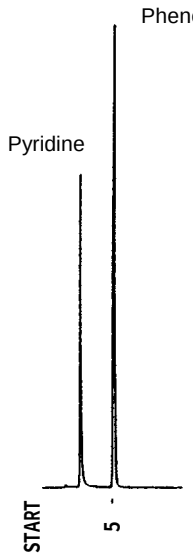
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-254 nm

Naphthalene



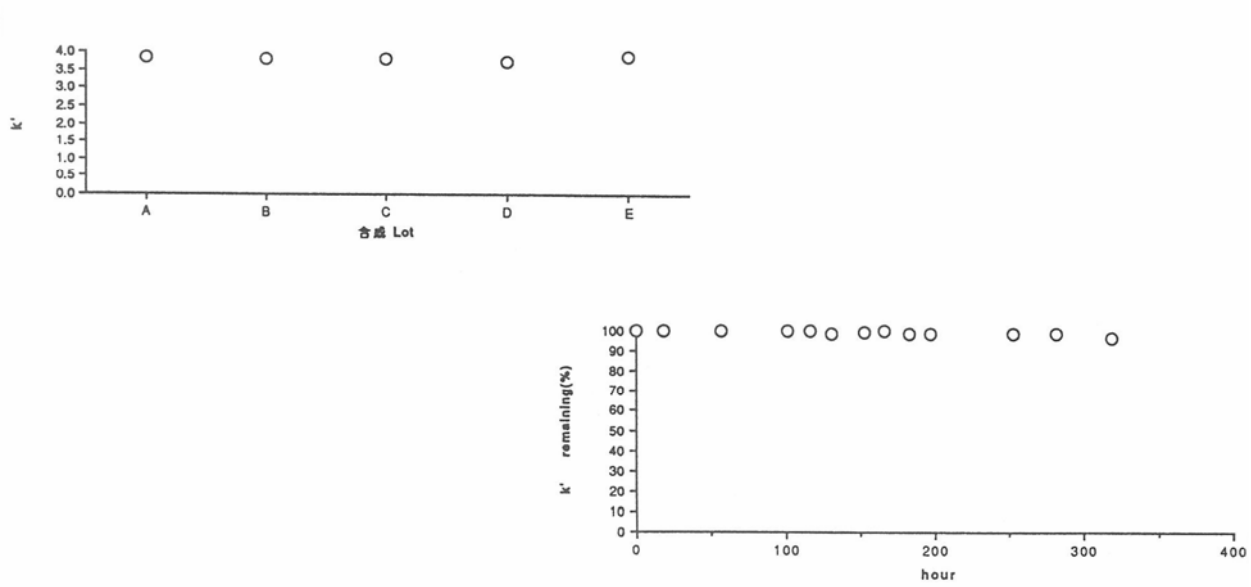
Column: ULTRON VX-ODS
Size: 150 mm x 2.1 mm I.D.
Mobile Phase: CH_3CN/H_2O=70/30
Flow Rate: 0.2 mL/min
Temperature: Ambient
Detection: UV-254nm,0.16AUFS
Pressure: 66 MPa

Pyridine, Phenol Test



Column: ULTRON VX-ODS
Size: 150 mm x 2.1 mm I.D.
Mobile Phase: CH_3CN/H_2O=30/70
Flow Rate: 0.2 mL/min
Temperature: Ambient
Detection: UV-254nm,0.16AUFS
Pressure: 44 MPa

Life Test in Acidic Solution



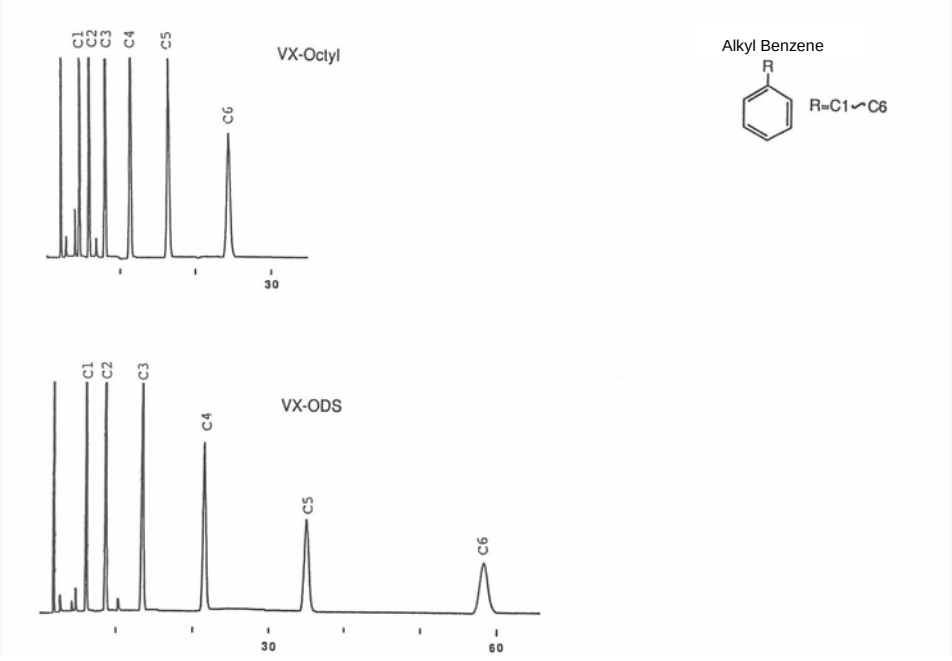
Reproducibility
Between Syntheses Lots

Eluent Condition : 70 % Methanol
Flow Rate : 1.0 ml/min 40 ℃
Sample : Naphthalene

Life Test in Acidic Solution

Mobile Phase :60 % Methanol, 0.1 %TFA(pH2.2)

Comparison of Alkylbenzene in VX-Octyl and VX-ODS

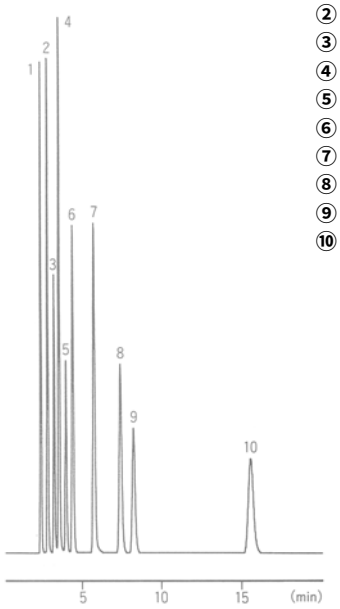


Column: ULTRON VX-Octyl 5 µm
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: CH_3OH/H_2O

Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-254 nm

Nucleic Acid Base, Nucleoside

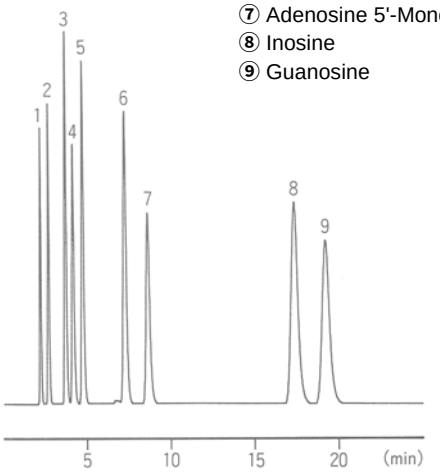
① Cytosine
② Uracil
③ Guanine
④ Adenine
⑤ Cytidine
⑥ Uridine
⑦ Thymine
⑧ Adenosine
⑨ Guanosine
⑩ Thymidine



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 0.1 M-Phosphate Buffer (pH2.1)
0.2 M $NaClO_4$
Flow Rate: 1.0 mL/min
Temperature: 50 ℃
Detection: UV-260 nm (0.32 AUFS)

Nucleoside, Nucleotide

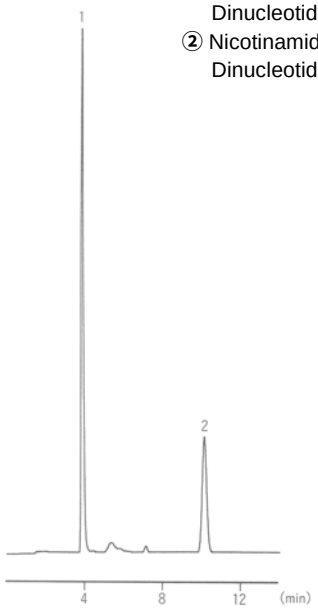
① Cytidine 5'-Monophosphate
② Uridine 5'-Monophosphate
③ Guanosine 5'-Monophosphate
④ Adenosine 5'-Triphosphate
⑤ Cytidine
⑥ Uridine
⑦ Adenosine 5'-Monophosphate
⑧ Inosine
⑨ Guanosine



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 0.1 M KH_2PO_4 (pH5.8)
0.2 mM Na_2SO_4
Flow Rate: 1.0 mL/min
Temperature: Ambient
Detection: UV-254 nm (0.32 AUFS)

NAD, NADH

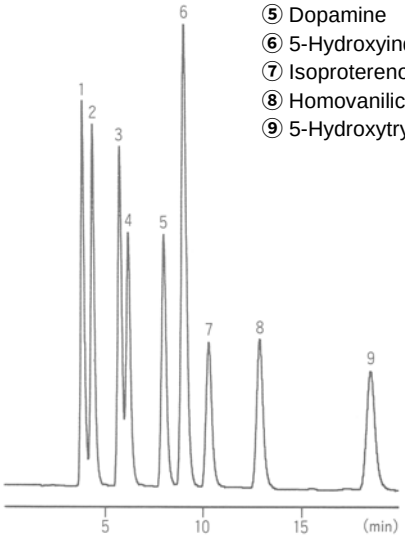
① Nicotinamide Adenine Dinucleotide Oxidized
② Nicotinamide Adenine Dinucleotide Reduced



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM $NH_4H_2PO_4$ (pH 2.6)
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-260 nm (0.04 AUFS)

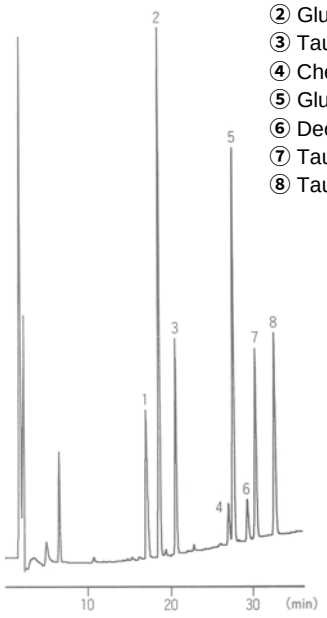
Catecholamine

① Norepinephrine
② Epinephrine
③ Normetanephrine
④ 3,4-Dihydroxyphenylacetic Acid
⑤ Dopamine
⑥ 5-Hydroxyindole-3-acetic Acid
⑦ Isoproterenol
⑧ Homovanilic Acid
⑨ 5-Hydroxytryptamine



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 0.1M Citric Acid, 0.1M Sodium Acetate(pH4)
/ 17% CH_3OH 1-Octane Sodium Sulphonate
160mg/L EDTA 5mg/L
Flow Rate: 1.0 mL/min
Temperature: 25 ℃
Detection: ECD, 800 mV, 10 nA

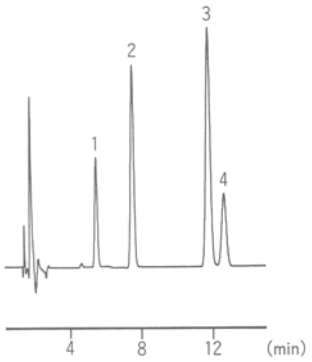
Bile Acid



① Cholic Acid
② Glucocholic Acid
③ Taurocholic Acid
④ Chenodeoxycholic Acid
⑤ Glucochenodeoxycholic Acid
⑥ Deoxycholic Acid
⑦ Taurochenodeoxycholic Acid
⑧ Taurodeoxycholic Acid

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: CH_3CN/30 mM $(NH_4)_2HPO_4$
(pH 7.2 $NH_4H_2PO_4$) A = 10/90, B = 50/50
30 % B → 85 % B (55 min)
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-217 nm (0.02 AUFS)

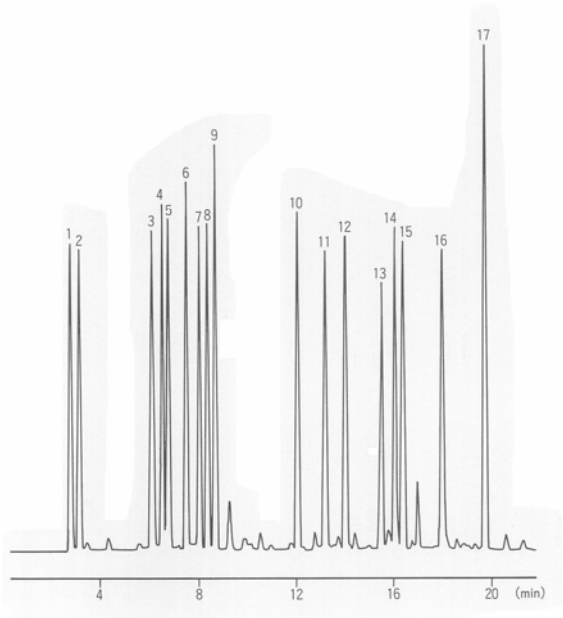
Hippuric Acid



① Hippuric Acid
② o-Methyl Hippuric Acid
③ p-Methyl Hippuric Acid
④ m-Methyl Hippuric Acid

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 20 mM-Phosphate Buffer (pH2.5) } 8
10 mM β-Cyclodextrin
CH_3CN 1
Flow Rate: 1.0 mL/min
Temperature: 50 ℃
Detection: UV-260 nm (0.02 AUFS)

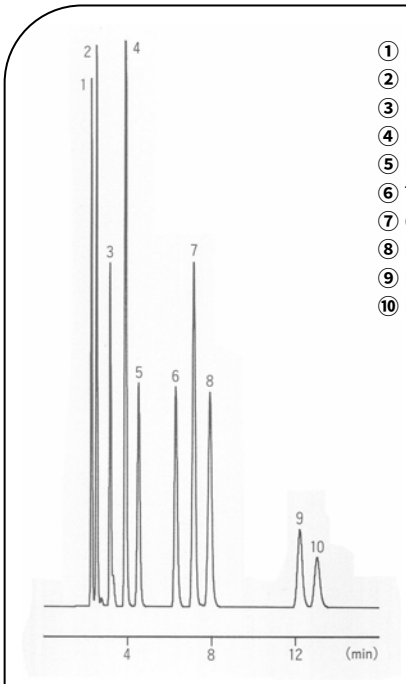
Analysis of The PTC Amino Acid



① Aspartic Acid
② Glutamic Acid
③ Serine
④ Glycine
⑤ Histidine
⑥ Arginine
⑦ Threonine
⑧ Alanine
⑨ Proline
⑩ Tyrosine
⑪ Valine
⑫ Methionine
⑬ Cysteinecysteine
⑭ Isoleucine
⑮ Leucine
⑯ Phenylalanine
⑰ Lysine

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: A: Sodium Acetate (pH 6.5) / CH_3CN (93:7)
B: CH_3CN / H_2O (4:1)
0 % B → 34 % B (18 min) →
100 % B (18.01 min) → 100 % B (23 min)
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-254 nm (0.04 AUFS)

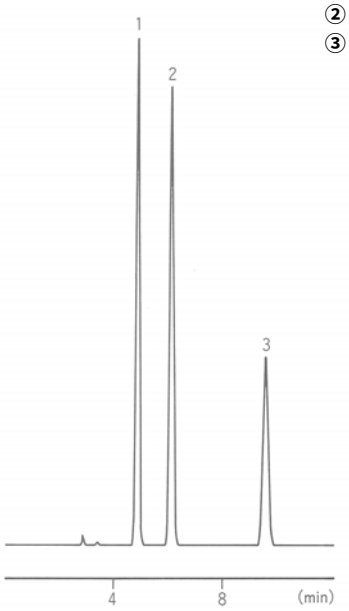
The Water-soluble Vitamin Ⅰ



① Nicotinic Acid
② Nicotinamide
③ Pantothenic Acid
④ Pyridoxine
⑤ Riboflavin Phosphate
⑥ Thiamine
⑦ Caffeine
⑧ Folic Acid
⑨ Biotin
⑩ Riboflavin

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 100 mM-Phosphate Buffer (pH2.1) } 9
0.8 mM Octane Sodium Sulphonate
CH_3CN 1
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-210 nm (0.16 AUFS)

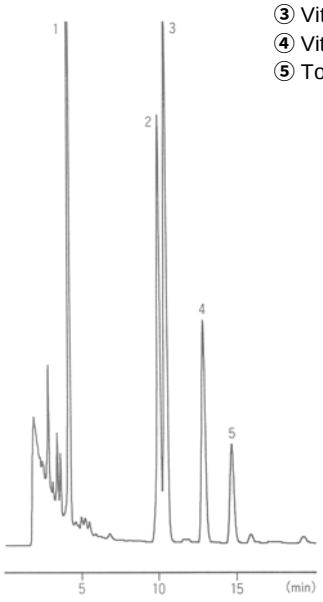
The Water-soluble Vitamin Ⅱ



① Pyridoxal
② Pyridoxine
③ Pyridoxamine

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 100 mM-Phosphate Buffer (pH2.1) } 9
50 mM Hexane Sodium Sulphonate
CH_3CN 1
Flow Rate: 1.0 mL/min
Temperature: 45 ℃
Detection: UV-210 nm (0.04 AUFS)

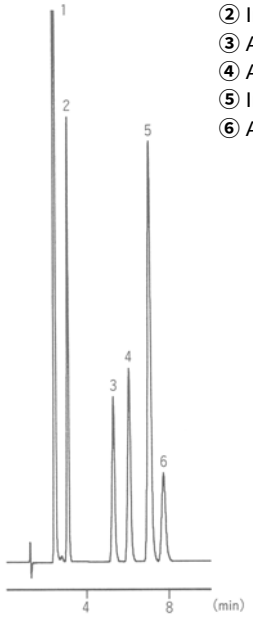
Fat-soluble Vitamin



① Vitamin A
② Vitamin D2
③ Vitamin D3
④ Vitamin E
⑤ Tocopherol Acetate

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 100 % CH_3CN
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-280 nm (0.08 AUFS)

The Freshness K Value

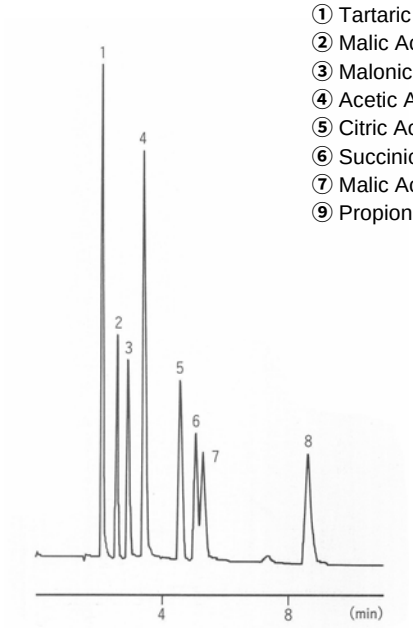


① Hypoxanthine
② Inosine 5'-Monophosphate
③ Adenosine 5'-Diphosphate
④ Adenosine 5'-Monophosphate
⑤ Inosine
⑥ Adenosine 5'-Triphosphate

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 24mM 2-Diethylaminoethanol is contained
16mM Citric Acid Aqueous Solution
Flow Rate: 2.0 mL/min
Temperature: 40 ℃
Detection: UV-250 nm (0.04 AUFS)

Organic Acids

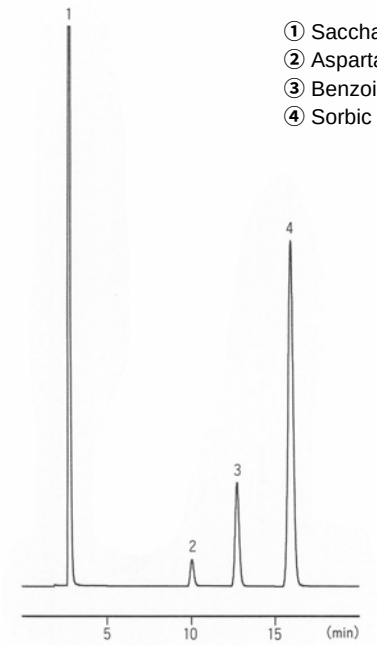
① Tartaric Acid
② Malic Acid
③ Malonic Acid
④ Acetic Acid
⑤ Citric Acid
⑥ Succinic Acid
⑦ Malic Acid Degradate
⑨ Propionic Acid



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 5mM $NH_4H_2PO_4$ (pH 2.4)
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-210 nm (0.08 AUFS)

Saccharin, Aspartame, Benzoic Acid, Sorbic Acid

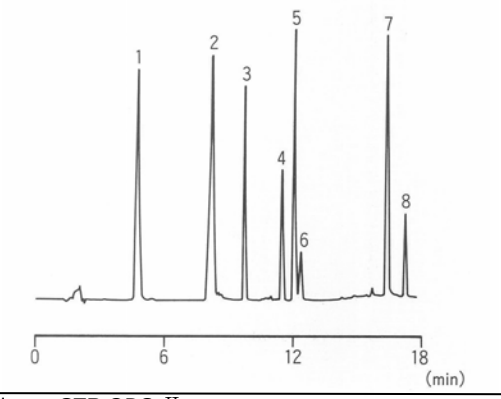
① Saccharin
② Aspartame
③ Benzoic Acid
④ Sorbic Acid



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 40 mM Acetate Buffer (pH4.0) 3
CH_3OH 1
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-250 nm (0.16 AUFS)

The Phenolic System Antioxidant (It is added to the edible oil of the marketing.)

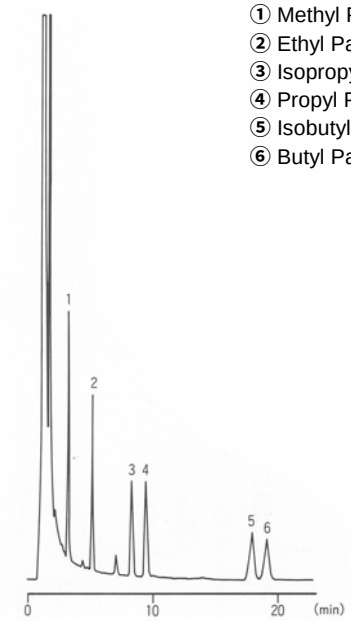
① Prostaglandin
② 2,4,5-Trihydroxybutyrophenone
③ Nordihydroguaiaretic Acid
④ Butyl Hydroxy Anisol
⑤ Octyl Gallate
⑥ 2,6-Di-t-butyl-4-hydroxy-methylphenol
⑦ Lauryl Gallate
⑧ 2,6-Di-t-butylhydroxytoluene



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: A: 10 mM-Phosphate Buffer (pH2.6)
B: CH_3CN
30 % B → 30 % B (4 min) → 63 % B (4.01 min) →
63 % B (10 min) → 90 % (10.01 min) →
90 % B (16 min) → 30 % B (16.01 min) →
30 % B (25 min)
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: SPD-10A, 280 nm 2AU/V, AT = 7

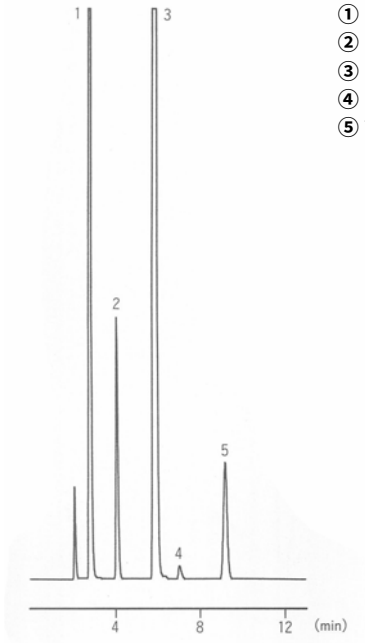
Paraben (It is added to the soy sauce of the marketing.)

① Methyl Paraben
② Ethyl Paraben
③ Isopropyl Paraben
④ Propyl Paraben
⑤ Isobutyl Paraben
⑥ Butyl Paraben



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM-Phosphate Buffer (pH2.6)
CH_3OH
Flow Rate: 1.5 mL/min
Temperature: 40 ℃
Detection: SPD-10A, 270 nm 2AU/V, AT = 6

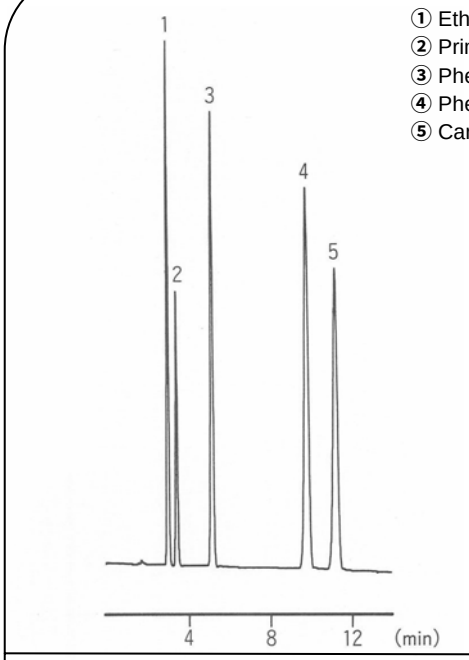
The Component of The Anti-inflammatory Agent



① Salicylic Acid
② Diphenhydramine
③ Methyl Salicylate
④ α-Camphor
⑤ Thymol

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM-Phosphate Buffer (pH2.6) } 3
20 mM Heptane Sodium Sulphonate }
CH_3OH 2
CH_3CN 2
Flow Rate: 1.0 mL/min
Temperature: 45 ℃
Detection: UV-210 nm (0.08 AUFS)

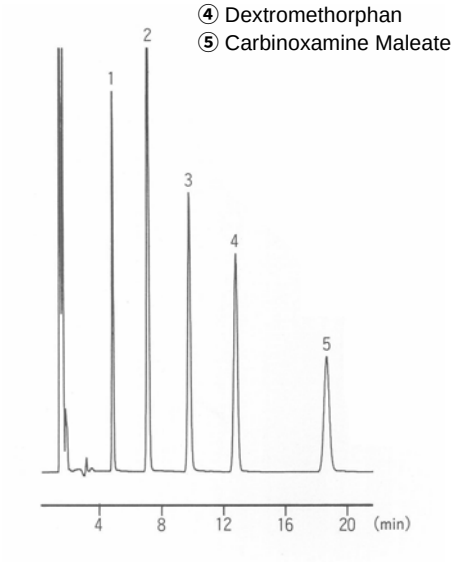
Anticonvulsant Analysis



① Ethosuximide
② Primidone
③ Phenobarbital
④ Phenytoin
⑤ Carbamazepine

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 100 mM Phosphoric Acid Buffer (pH4.0)
/ CH_3OH / CH_3CN (4 / 2 / 1)
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-250 nm (0.16 AUFS)

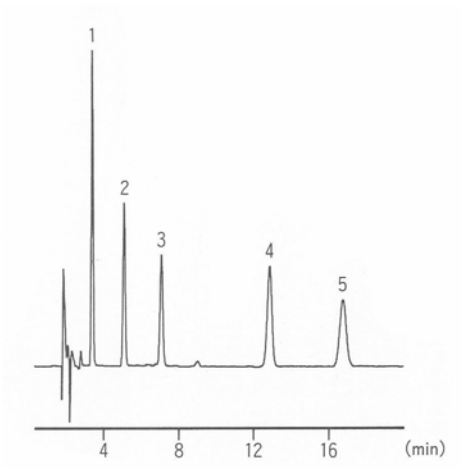
The Component of The Cold Remedy Ⅰ



① Methylephedrine Hydrochloride
② Noscapine
③ Thiamine
④ Dextromethorphan
⑤ Carbinoxamine Maleate

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: CH_3CN 510
H_2O 490
H_3PO_4 1
0.5 % Sodium Dodecyl Sulfate
Flow Rate: 1.0 mL/min
Temperature: 50 ℃
Detection: UV-210 nm (0.04 AUFS)

The Component of The Cold Remedy Ⅱ

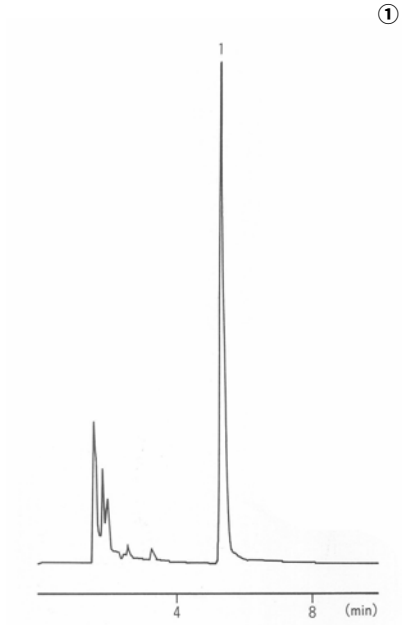


① Acetaminophen
② Caffeine
③ Riboflavin
④ Phenol
⑤ Potassium Guaiacol-4-sulfonate

Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: H_2O 15
CH_3CN 2
50 mM Tetrabutylammonium 1
(It is adjusted at pH=6 in The Phosphoric Acid)
Flow Rate: 1.0 mL/min
Temperature: 50 ℃
Detection: UV-280 nm (0.01 AUFS)

Oxine Copper

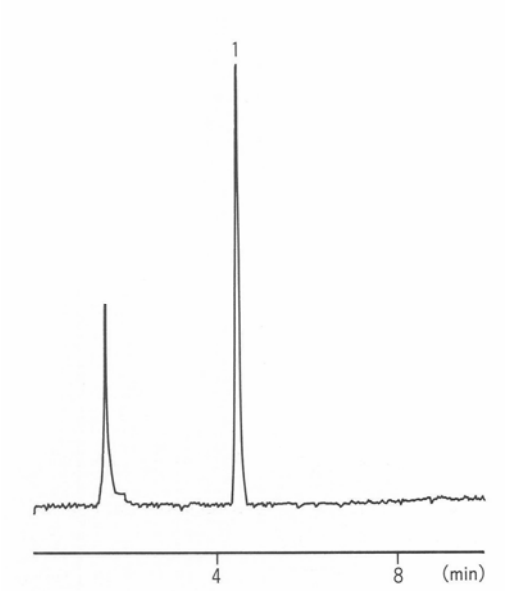
① Oxine-copper



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 50 mM-Phosphate Buffer (pH2.2) 95
CH_3CN 5
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-240 nm (0.04 AUFS)

Thiuram

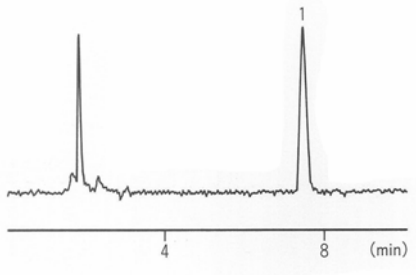
① Thiuram



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: CH_3CN 50
H_2O 50
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-280 nm (0.01 AUFS)

Asulam

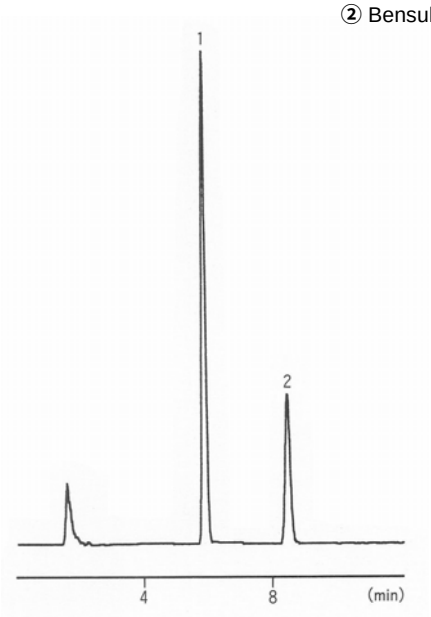
① Asulam



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 50 mM-Phosphate Buffer (pH3.3) 90
CH_3CN 10
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-270 nm (0.01 AUFS)

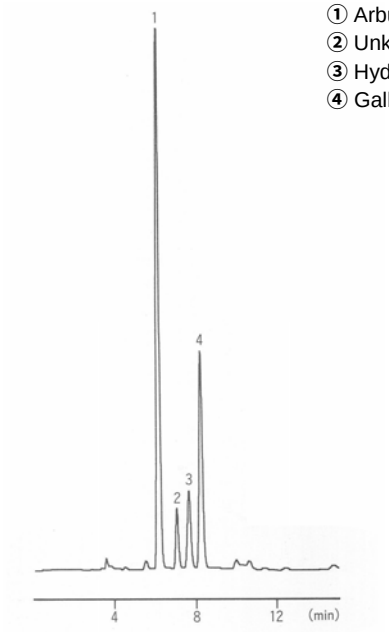
Iprodione, Bensulide

① Iprodione
② Bensulide



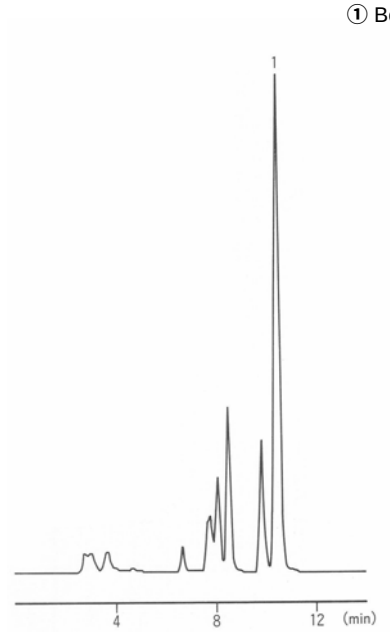
Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: CH_3CN 60
H_2O 40
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-230 nm (0.02 AUFS)

Arbutin in The Bearberry Leaf End



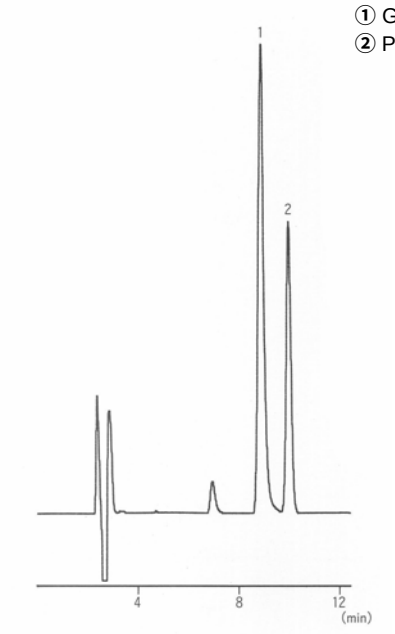
Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 100 mM-Phosphate Buffer (pH2.1) 40
CH_3OH 1
Flow Rate: 0.9 mL/min
Temperature: 35 ℃
Detection: UV-280 nm (0.16 AUFS)

Berberine in The Coptis End



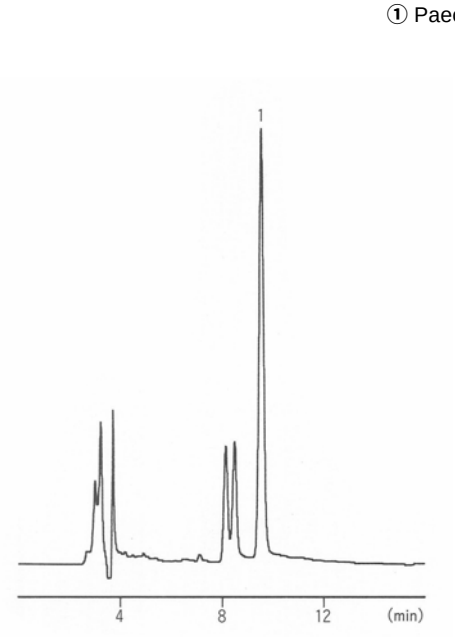
Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: The Result of Dissolving Potassium Dihydrogenphosphate 3.4g and Sodium Lauryl Sulfate 1.7g at Water 1L/CH_3CN=1 / 1
Flow Rate: 0.5 mL/min
Temperature: 40 ℃
Detection: UV-345 nm (0.16 AUFS)

Glycyrrhizin in The Licorice End



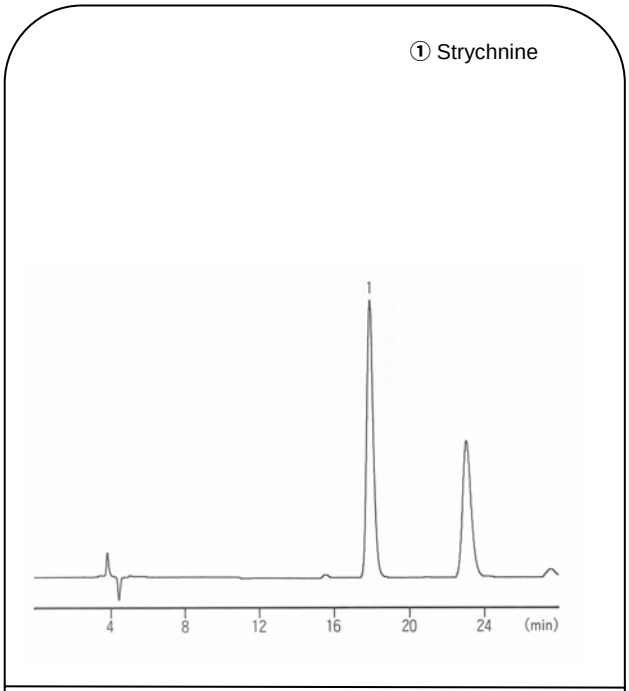
Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 15 Times Dilution Acetic Acid Aqueous Solution 3
CH_3CN 2
Flow Rate: 0.7 mL/min
Temperature: Ambient
Detection: UV-254 nm (0.08 AUFS)

Paeoniflorin in The Peony End



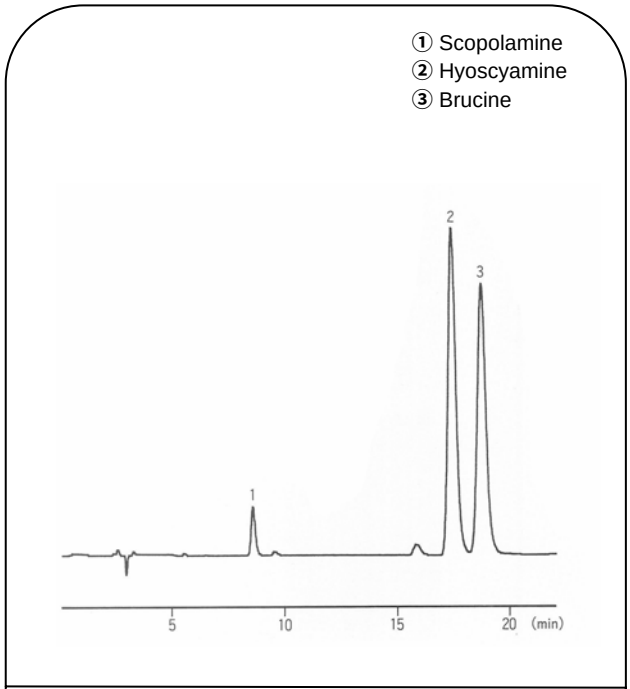
Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM Sodium Acetate (pH 4.8) 5
Ch_3CN 1
Flow Rate: 0.5 mL/min
Temperature: 40 ℃
Detection: UV-230 nm (0.64 AUFS)

Strychnine in Nux Vomica



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: (The Result of Dissolving Potassium Dihydrogenphosphate 6.8g in Water 1000mL) / Acetonitrile/Triethylamine=45/5/1 The Result of Adjusting at pH=3 in The Phosphoric Acid
Flow Rate: 0.5 mL/min
Temperature: 40 ℃
Detection: UV-210 nm (0.16 AUFS)

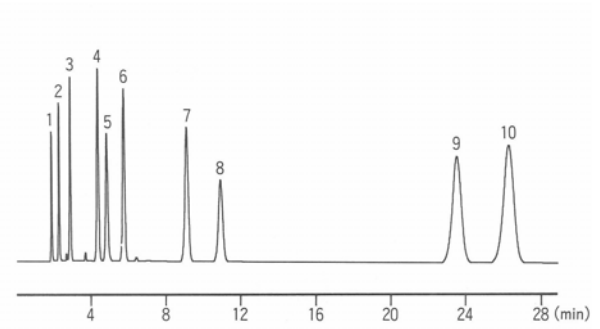
Scopolamine and Hyoscyamus Niger Thiamine in The Rohto Extract



Column: STR ODS-Ⅱ
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: The Liquid by Adding Water after It Dissolved Potassium Dihydrogenphosphate 6.8g at Water 900 mL and Added Triethylamine 10 mL, and after It Adjusted It in The Phosphoric Acid in pH3.5 as 1000mL/CH_3CN=9/1
Flow Rate: 0.8 mL/min
Temperature: Ambient
Detection: UV-210 nm (0.16 AUFS)

Nucleoside, Nucleotide

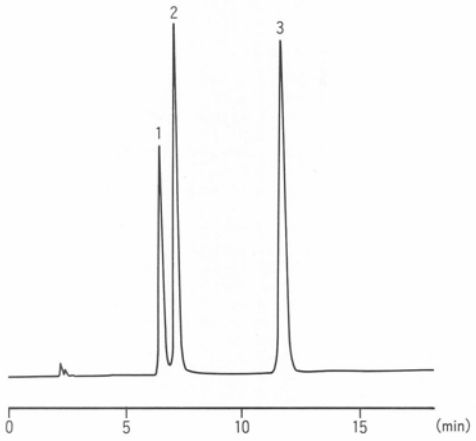
① Cytidine 5'-Diphosphate
② Cytidine 5'-Monophosphate
③ Uridine 5'-Monophosphate
④ Guanosine 5'-Monophosphate
⑤ Adenosine 5'-Triphosphate
⑥ Gytidine
⑦ Uridine
⑧ Adenosine 5'-Monophosphate
⑨ Inosine
⑩ Guanosine



Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 0.1 M KH_2PO_4 , 20 mM Na_2SO_4 (pH 5.8)
Flow Rate: 1.0 mL/min
Temperature: 30 ℃
Detection: UV-254 nm

AMP, ADP, ATP

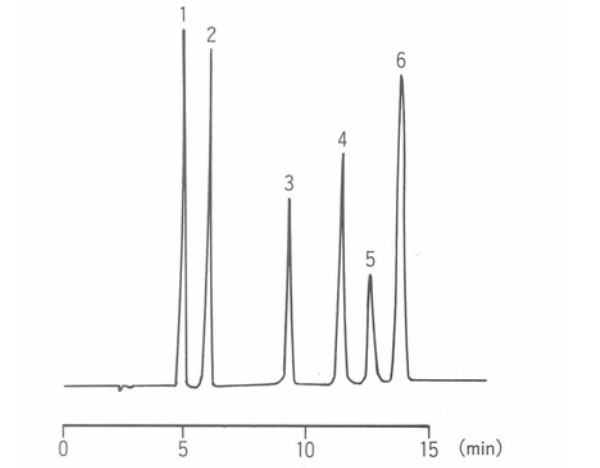
① Adenosine 5'-Monophosphate
② Adenosine 5'-Diphosphate
③ Adenosine 5'-Triphosphate



Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 30 mM 2-Diethylaminoethanol is contained
20 mM Citric Acid Aqueous Solution
Flow Rate: 0.8 mL/min
Temperature: 40 ℃
Detection: UV-260 nm

The Freshness K Value

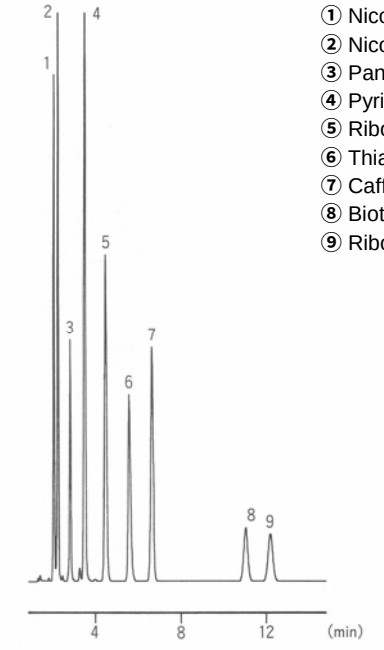
① Hypoxanthine
② Inosine 5'-Monophosphate
③ Adenosine 5'-Monophosphate
④ Adenosine 5'-Diphosphate
⑤ Adenosine 5'-Triphosphate
⑥ Isosine



Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 24 mM 2-Diethylaminoethanol is contained
16 mM Citric Acid Aqueous Solution
Flow Rate: 2.0 mL/min
Temperature: 40 ℃
Detection: UV-250 nm

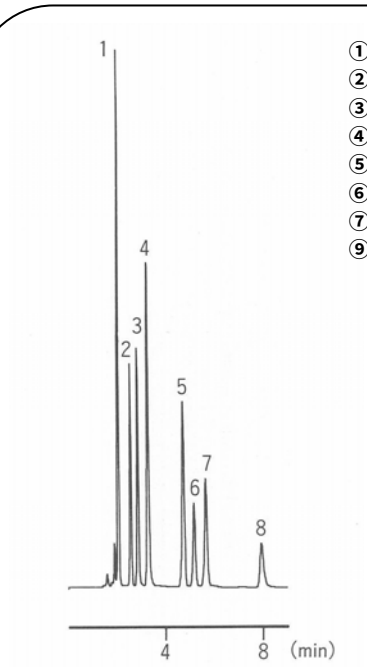
The Water-soluble Vitamin

① Nicotinic Acid
② Nicotinamide
③ Pantothenic Acid
④ Pyridoxine
⑤ Riboflavin Phosphate
⑥ Thiamine
⑦ Caffeine
⑧ Biotin
⑨ Riboflavin



Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 100 mM-Phosphate Buffer (pH2.1) } 9
0.9 mM Octane Sodium Sulphonate
CH_3CN 1
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-210 nm

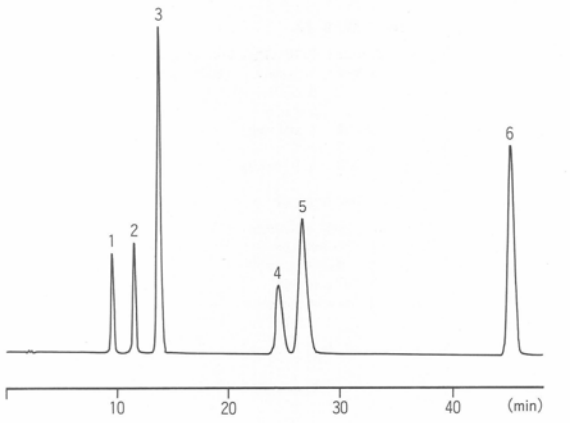
Organic Acids



① Tartaric Acid
② Malic Acid
③ Malonic Acid
④ Acetic Acid
⑤ Citric Acid
⑥ Succinic Acid
⑦ Malic Acid Degradate
⑨ Propionic Acid

Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM NH_2PO_4
(It is adjusted at pH=2.3 in The Phosphoric Acid)
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-210 nm

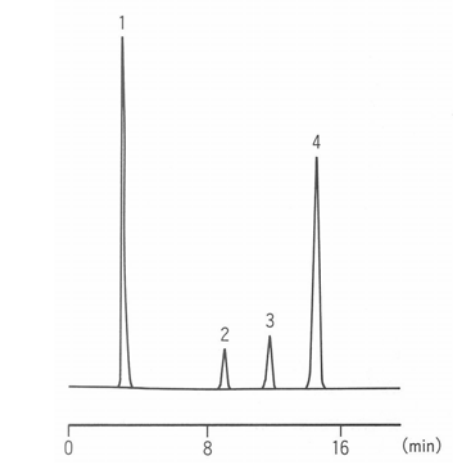
Caffeine and Catechin



① Epigallocatechin
② Catechin
③ Caffeine
④ Epigallocatechin Gallate
⑤ Epicatechin
⑥ Epicatechin Gallate

Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: A: 10 mM-Phosphate Buffer (pH2.6)
B: CH_3CN
7 % B → 7 % B (30 min) → 12 % B (30.01 min) →
12 % B (45 min) → 50 % B (45.01 min) →
50 % B (50 min) → 7 % B (50.01 min) →
7 % B (80 min)
Flow Rate: 1.0 mL/min
Temperature: 45 ℃
Detection: UV-280 nm (0.64 AUFS)

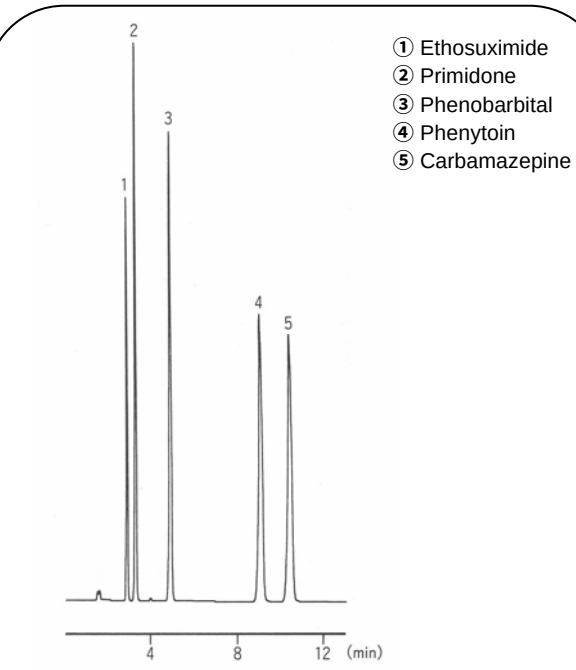
Saccharin, Aspartame, Benzoic Acid, Sorbic Acid



① Saccharin
② Aspartame
③ Benzoic Acid
④ Sorbic Acid

Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 40 mM Acetate Buffer (pH4.0) 3
CH_3OH 1
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-250 nm (0.32 AUFS)

AnticoNvulsant Analysis

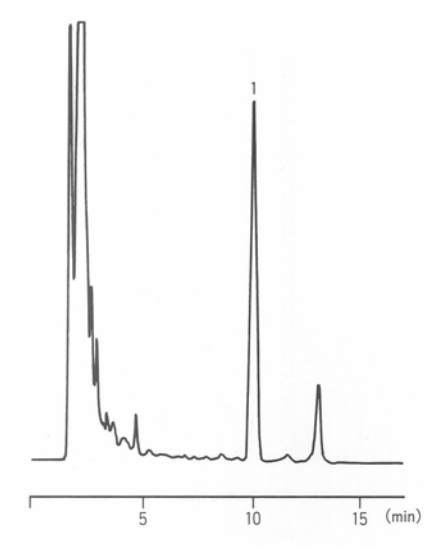


① Ethosuximide
② Primidone
③ Phenobarbital
④ Phenytoin
⑤ Carbamazepine

Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 100 mM-Phosphate Buffer (pH2.1) 4
CH_3OH 2
CH_3CN 1
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-205 nm

Nicarbazin

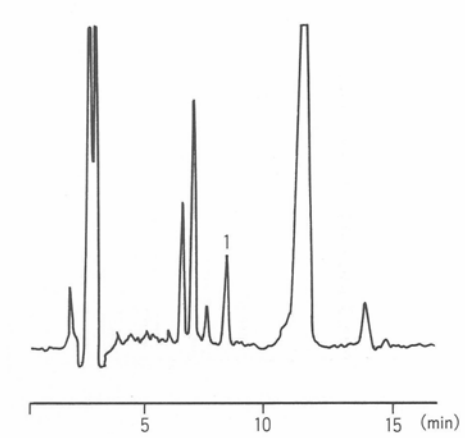
① Nicarbazin



Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM-Phosphate Buffer (pH2.6) 30
CH_3CN 70
Flow Rate: 0.8 mL/min
Temperature: 40 ℃
Detection: UV-340 nm

Ethopabate

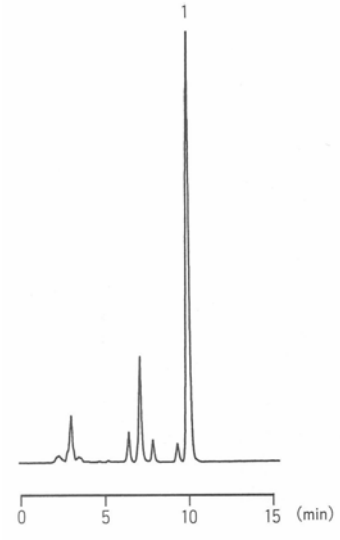
① Ethopabate

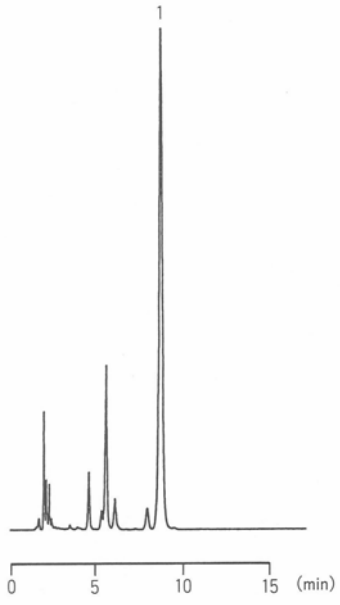


Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: H_2O 70
CH_3CN 30
Flow Rate: 0.7 mL/min
Temperature: 40 ℃
Detection: UV-270 nm

Berberine

①Berberine



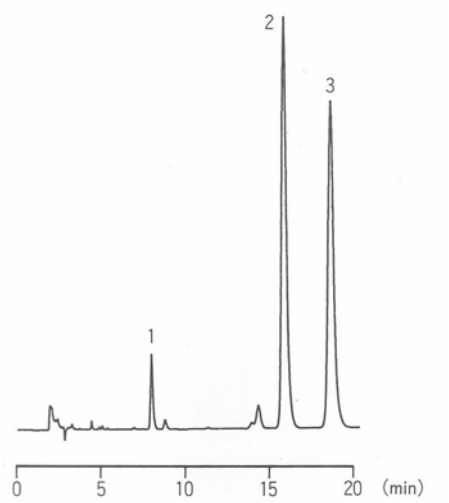


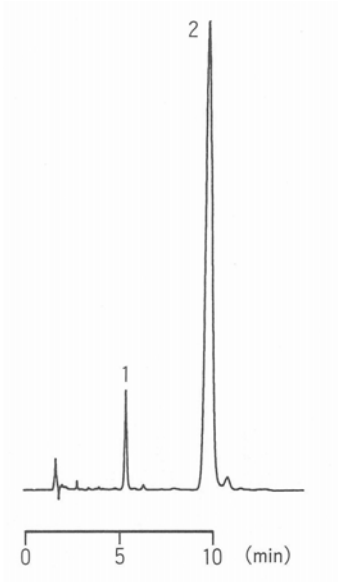
① Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: The Result of Dissolving Potassium Dihydrogenphosphate 3.4g and Sodium Lauryl Sulfate 1.7g at Water 1L / CH_3CN=1 / 1
Flow Rate: 0.6 mL/min
Temperature: 40 ℃
Detection: UV-345 nm

② Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM-Phosphate Buffer (pH 2.6) } 5
200 mM $NaClO_4$
CH_3CN 3
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-345 nm

Scopolanime, Hyoscyamine

① Scopolanime
② Hyoscyamine
③ Brucine



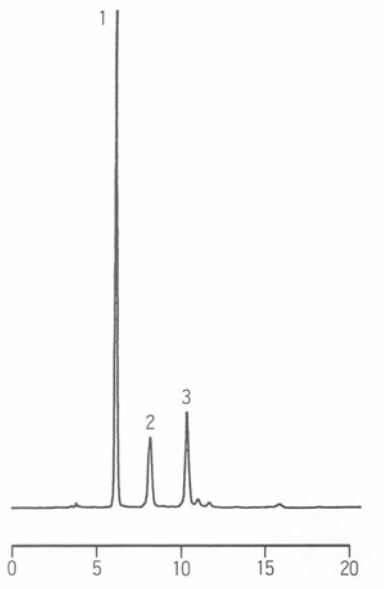


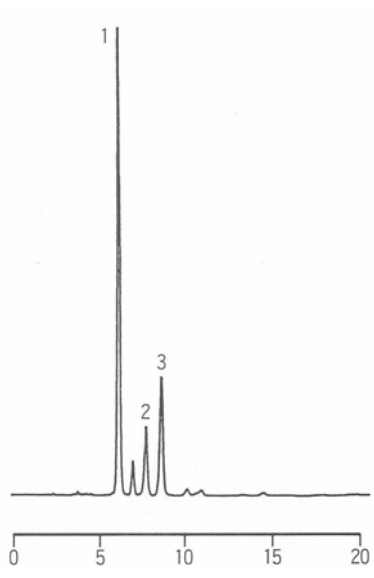
① Column: STR ODS-M Size: 150 mm x 4.6 mm I.D.
Mobile Phase: The Liquid by Adding Water after It Dissolved Potassium Dihydrogenphosphate 6.8g at Water 900 mL and Added Triethylamine 10 mL, and after It Adjusted It in The Phosphoric Acid in pH3.5 as 1000 mL / CH_3CN = 9 / 1
Flow Rate: 0.8 mL/min Temperature: ambient
Detection: UV-210 nm

② Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 10 mM-Phosphate Buffer (pH 2.6) / 200 mM $NaClO_4$ } 3
CH_3CN 1
Flow Rate: 1.0 mL/min
Temperature: 40 ℃
Detection: UV-210 nm

Arbutin

① Arbutin
② Hydroquinone
③ Gallic Acid

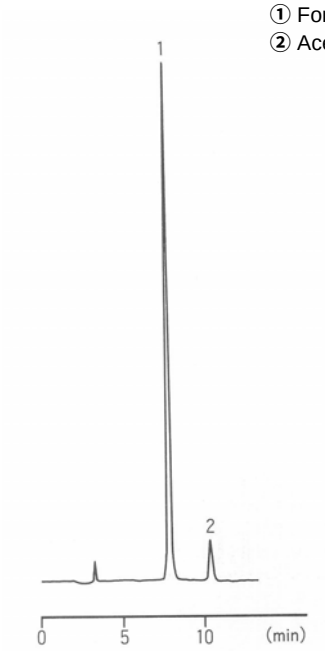




① Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: H_2O / CH_3OH / 0.1N-HCl = 94 / 5 / 1
Flow Rate: 0.8 mL/min
Temperature: Ambient
Detection: UV-280 nm

② Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: 100 mM-Phosphate Buffer (pH 2.1) / CH_3OH = 40 / 1
Flow Rate: 0.8 mL/min
Temperature: 40 ℃
Detection: UV-280 nm

Aldehydes (1.3-Cyclohexanedione Derivatives)



Column: STR ODS-M
Size: 150 mm x 4.6 mm I.D.
Mobile Phase: CH_3CN / H_2O = 35 / 65
Flow Rate: 0.8 mL/min
Temperature: 40 ℃
Detection: RF-535 Ex = 360 nm Em = 440 nm

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Shinwa Chemical Industries Ltd. reserves the right to change product specifications, designs or prices without notice and without liability for such changes.

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