ChromTech®

"your chromatography specialists"

User's Guide

Separation of chiral compounds on
Chiral-AGP • Chiral-CBH • Chiral-HSA

Second Edition

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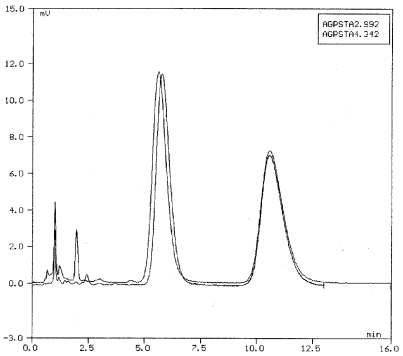
Contents

The CHIRAL-AGP column

α_1-acid glycoprotein (AGP) is a very stable protein, which tolerates pure organic solvents, high temperatures and high and low pH. AGP is the chiral selector in the CHIRAL-AGP column. The selector has been immobilized on spherical 5 µm particles. The column is used in the reversed-phase mode. The CHIRAL-AGP column can be used for the resolution of an extremely broad range of chiral compounds, such as amines (primary, secondary, tertiary and quaternary ammonium), acids, esters, sulphoxides, amides, alcohols etc. The very broad applicability is demonstrated in the application section below and in the list of publications in the last part of the guide. In the applications you can find chromatograms together with the chromatographic conditions.
The enantioselectivity and the retention can easily be regulated by the pH of the mobile phase, the buffer concentration and the nature and the concentration of the organic modifier.

Stability of the CHIRAL-AGP column

The stability of the AGP column has been tested using bumadizon, an acidic drug, as test compound. In total **30.5 liters** of mobile phase (10% isopropanol in phosph. buffer pH 6.0) was pumped through the column. ***During the test 2030 samples of bumadizon were injected.*** One of the chromatograms below is the starting chromatogram and the other one is the last chromatogram obtained in the test. No significant changes were observed.



The CHIRAL-CBH column

Cellobiohydrolase(CBH) is the chiral selector in the CHIRAL-CBH column. CBH is a very stable enzyme, which has been immobilized onto spherical 5 µm silica particles. The column is used in the reversed-phase mode. The column is preferably used for the separation of enantiomers of basic drugs from many compound classes. The retention and the enantioselectivity can be regulated by changes in pH, buffer concentration and the nature and the concentration of organic modifier.

The CHIRAL-HSA column

The chiral selector used for this stationary phase is the human serum albumin (HSA). The protein has been immobilized onto spherical 5 µm silica particles. The column is used in the reversed-phase mode. Enantiomers of preferentially acidic compounds can be resolved on the column. As for the other two columns retention and enantioselectivity can be regulated by changing the mobile phase composition, see above.

Quality control of the columns

The silica used for the manufacturing of the chiral columns is tested according to an extensive test protocol. When approved the silica surface is modified. All the chemicals used for the surface modification are either purchased against certificate or tested and approved by ChromTech. After surface modification a batch test is performed. If the test parameters are within the specifications, the batch is approved and released for production of columns. The next step is the control of the final product. Each column is tested to control separation efficiency, retention and resolution.

Column selection guide

Column	Applicability (type of samples)
CHIRAL-AGP	Extremely broad applicability. Most likely the column with the broadest applicability of all chiral columns available. Separates all types of compounds: **- amines (primary, secondary, tertiary and quaternary nitrogen)** **- acids (strong and weak)** **- non-protolytes (amides, esters, alcohols, sulphoxides, etc.)**
CHIRAL-CBH	More narrow applicability than CHIRAL-AGP. Separates preferably compounds containing **one or more nitrogens** together with **one or more hydrogen accepting or hydrogen donating groups (alcohol, phenol, carbonyl, amide, ether, ester etc.).**
CHIRAL-HSA	More narrow applicability than CHIRAL-AGP. Separates preferably **weak and strong acids, zwitterionic and non-protolytic compounds.**

As can be seen the columns overlap for some types of compounds; basic compounds can be separated on both CHIRAL-AGP and CHIRAL-CBH, acidic and non-protolytes can be separated on both CHIRAL-AGP and CHIRAL-HSA. However, as CHIRAL-AGP is a column with an extremely broad applicability, this column should be the first choice, if the analyte has not been resolved on any of the columns. There are, however, some types of componds where one of the other columns might be the first choice:

CHIRAL-HSA: very hydrophilic acids
CHIRAL-CBH: very hydrophilic amines

See p. 35 for a list of available column dimensions.

Method development

The columns described here are reversed-phase columns giving many possibilities to affect both the retention and the enantioselectivity. The solutes are retained by three types of forces; ionic binding (charged solutes), hydrophobic interaction and hydrogen bonding. The relative contribution of the different forces to the retention of the solutes, depend of the nature of the analyte. Analytes containing charged groups, hydrogen bonding groups and hydrophobic parts can be retained by interaction with corresponding groups on the chiral selector. From this follows that a separation can be affected by:

- pH
- buffer concentration
- type of buffer
- organic modifier concentration
- type of organic modifier

Method development schemes

All columns are delivered with a method development scheme that makes the method development very simple. In this scheme you will find the starting mobile phase to use for a certain type of compound. When you have the first result with the starting mobile phase you can simply follow the scheme which in most cases gives a baseline separation.

CHIRAL-AGP

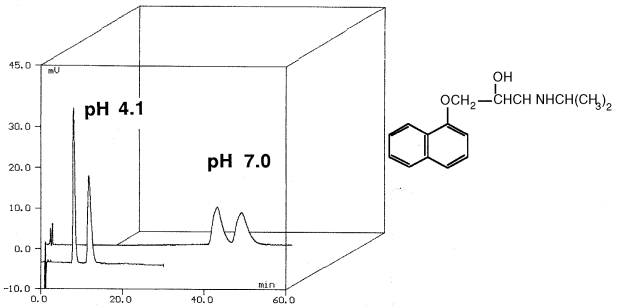
The most important tool in method development is the pH. The reason is that by changing the pH the net charge of the chiral selector as well as the charge of the solute can be changed, which affects the way the analyte interacts with the chiral selector. AGP has a low isoelectric point of 2.7. This means that using the column at pH 2.7 gives a net charge of zero of the chiral stationary phase. Increasing the pH from 2.7 up to 7 means that the degree of net negative charge of the chiral selector increases. This gives the prerequisites for ionic binding of positively charged solutes, resulting in a high affinity and high retention of the solute. Reducing the pH towards the isoelectric point reduces the negative charge of the stationary phase, resulting in lower retention of the solute. A change of the net charge of the chiral selector strongly affects the interaction between the solute and the chiral stationary phase. It has been demonstrated that ionic binding of amines to the AGP column is a very important type of interaction for retention of this category of compounds. The solutes are also retained by hydrophobic interaction and hydrogen bonding. The relative influence of the different types of binding forces depends of the nature of the solute, i.e. what kind of structure elements are present in the analyte.

Below you will find examples of the effect of changing the composition of the mobile phase, i.e. the pH, the modifier concentration and the modifier nature etc.

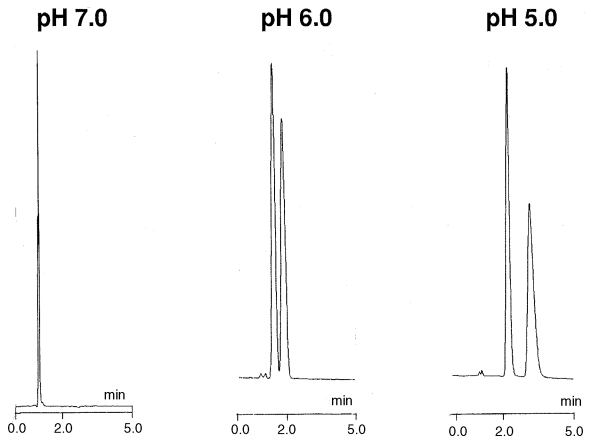
Changing the pH

When chromatographing hydrophobic amines a pH of 4-5 is preferred compared to a pH of 7. The explanation to this finding is that chromatography of the amine at a pH of 7, where the protein has a strong degree of net negative charge and the analyte is positively charged, gives a strong ionic binding of the analyte. However, reducing the pH to the range 4-5 reduces the degree of net negative charge of the protein (the analyte is still fully ionized) which gives a reduction of the ionic bonding of the analyte and the retention is strongly reduced. For some compounds even a decrease to pH 6 might give large improvements compared to pH 7.

The pH effects are demonstrated below for **propranolol**, chromatographed at pH 4 and 7. Note the very strong reduction of the retention and the improvement of the chromatographic performance at pH 4. See also the numerous application examples of compounds chromatographed at pH 4-5.

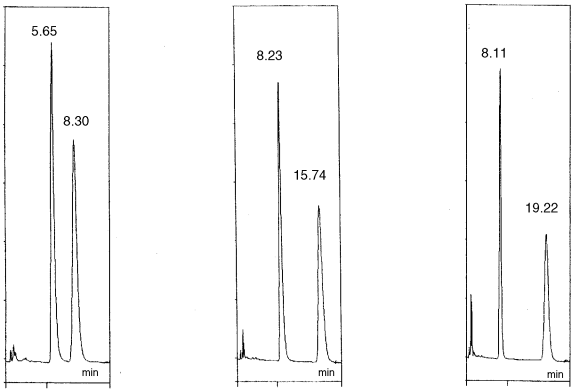


The pH can also be an effective tool for affecting the resolution of acids which is demonstreted below for **2-phenoxypropionic acid**. The compound has been chromatographed at three different pH, 5, 6 and 7. The analyte is totally ionized (negatively charged) at pH 7, but the charge is reduced at lower pH since the pKa-value is about 4. Furthermore, a decrease in pH reduces the degree of net negative charge of the protein, resulting in higher retention due to reduction of the repulsion between the analyte and the chiral stationary phase. The solute is retained by hydrophobic interaction and hydrogen bonding.



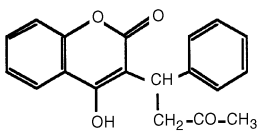
Changing the buffer concentration

By changing the buffer concentration, it is possible to affect both the retention and the enantioselectivity. Such effects have been observed for acids and for certain amines. The chromatograms below an example for the acidic drug **naproxen**.



Changing the modifier concentration

2-propanol, acetonitrile, methanol, ethanol and 1-propanol is the most frequently used organic modifiers. Higher modifier concentration reduces the retention and the enantioselectivity for both amines and acids. However, for certain types of acids the enantioselectivity can be strongly improved by increasing the modifier concentration, as is demonstrated for **warfarin** below.

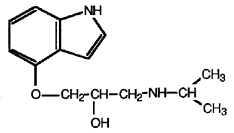


Mobile phase: 2-propanol in 0.01 M phosphate buffer, pH 7.0

Conc. 2-propanol (%)	k'_1	α
8	4.73	1.33
10	2.45	1.42
12	1.19	1.53
14	0.76	1.57

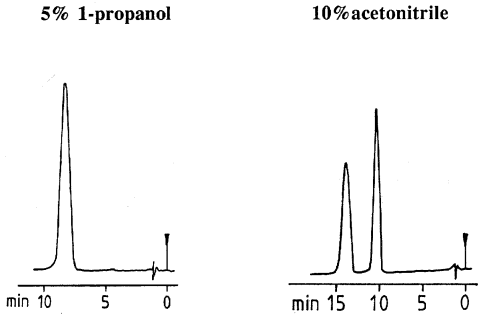
Changing the nature of the modifier

By changing from one organic modifier to another with different hydrogen bonding properties, i.e. from acetonitrile (hydrogen accepting properties) to 2-propanol (hydrogen accepting and donating properties), it is possible to strongly affect the enantioselectivity as demonstrated below for **pindolol**. Using 1-propanol results in no chiral selectivity, while acetonitrile gives a complete base-line resolution.



Column: CHIRAL-AGP

Mobile phase: 0.01 M phosphate buffer pH 7.3 with organic modifier

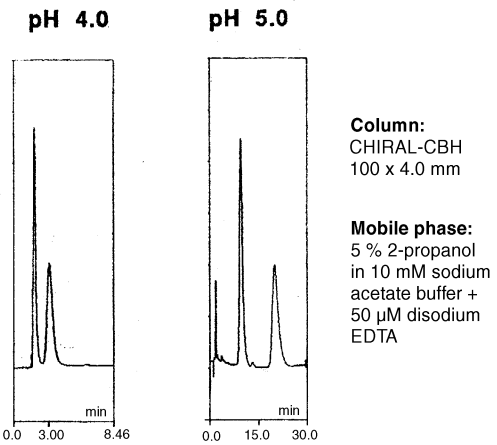


CHIRAL-CBH

The majority of the compounds chromatographed on the CHIRAL-CBH column are amines. See the applications. The CBH column is used in the reversed-phase mode.
The same type of mobile phases can be used on both the AGP and the CBH columns. The retention and the enantioselectivity is affected by the pH, the buffer concentration, the nature and the concentration of the organic modifier. The same types of forces are involved in the retention process of the solute as was described for the AGP column above.

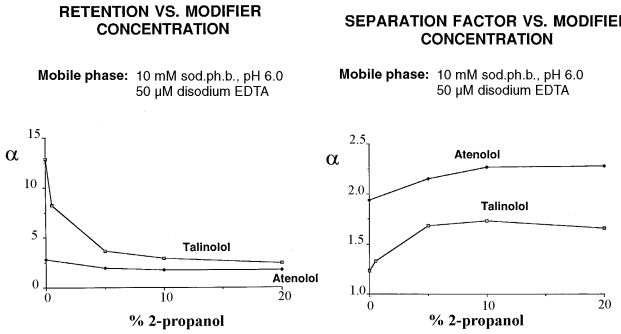
Changing the pH

A decrease in pH will result in decreasing retention and in most cases lower enantioselectivity, as is demonstrated for epanolol below.

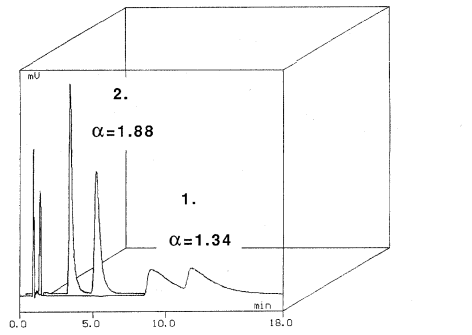


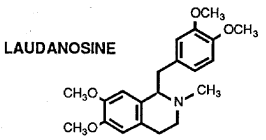
Changing the modifier concentration

The most widely used organic modifiers on the CBH column are 2-propanol and acetonitrile. Normally, increasing modifier concentration results in reduction of the retention and increasing enantioselectivity. These effects are illustrated below for **atenolol** and **talinolol**.



Addition of an organic modifier has in almost all cases a positive influence on the chromatographic performance compared to chromatography in pure buffers. See below for **laudanosine**.





Mobile phases:
1. 10 mM sod. phosph. b., pH 6.0 + 50 µM disodium EDTA
2. 10 % 2-propanol in 10 mM sod. phosph. b., pH 6.0 + 50 µM disodium EDTA

CHIRAL-HSA

The majority of the compounds that have been resolved on the CHIRAL-HSA column are acids, ampholytes and non-protolytes. See the applications. The HSA column is used in the reversed-phase mode.
The same type of mobile phases can be used on both the AGP, the CBH and the HSA columns. The retention and the enantioselectivity is affected by the pH, the buffer concentration, the nature and the concentration of the organic modifier. The same types of forces are involved in the retention process of the solute as was described for the AGP column above.

Changing the pH

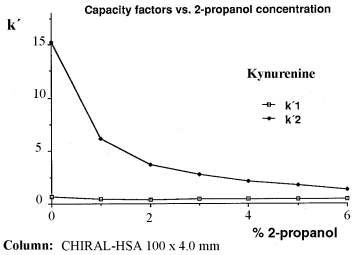
Depending of the nature of the analyte, a change in pH will have different effects. For an acid, a decreasing pH will result in higher retention and increasing resolution. If the analyte is an ampholyte as tryptophan, the result can be seen in the table:

Tryptophan, influence of pH

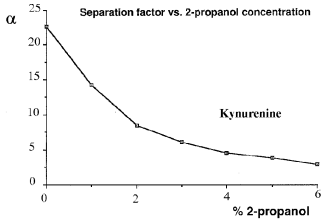
pH	k´1	k´2	α
5.0	1.44	1.82	1.26
6.0	1.30	1.87	1.44
7.0	0.75	3.72	4.97

Changing the modifier concentration

2-propanol, 1-propanol and acetonitrile are frequently used modifiers on the CHIRAL-HSA column. A higher organic modifier concentration reduces the retention. Normally, also the enantioselectivity will decrease.These effects are exemplified below for kynurenine.



Column: CHIRAL-HSA 100 x 4.0 mm
Mobile phase: 0.01 M phosphate buffer, pH 7.0 containing different concentrations of 2-propanol



Column: CHIRAL-HSA 100 x 4.0 mm
Mobile phase: 0.01 M phosphate buffer, pH 7.0 containing different concentrations of 2-propanol

However, for certain acidic compounds it has been observed that the enantioselectivity is increasing when an organic modifier is added to the mobile phase as is demonstrated below for abscisic acid.

Abscisic acid, effect of 2-propanol

Mobile phase: 100 mM sod. ph. b. pH 7.0

% 2-propanol	k´1	k´2	α
0	3.62	4.56	1.26
1	1.96	3.37	1.92

Substance	Column	Page	References
Abscisic acid	CHIRAL-AGP	11	
Acebutolol	CHIRAL-CBH	11	76, 129, 149
ß-alanin-N-[2-(3,4-dihydro-2H-1-benzo-pyran-3-yl)-ethyl] methyl ester hydro-chloride	CHIRAL-AGP	11	129
Alfuzosin	CHIRAL-AGP	11	17, 30
Alimemazine	CHIRAL-AGP	11	4, 29, 101
Alprenolol	CHIRAL-AGP	11	6, 12, 13, 29, 76, 101, 112
Aminoglutethimide	CHIRAL-AGP	11	
Amlodipine	CHIRAL-AGP	11	155
Atenolol	CHIRAL-CBH	11	14, 29, 76, 101, 149
Atropine	CHIRAL-AGP	11	8, 9, 12, 13, 25, 69
8-Azaspiro[4,5]decane-7,9-dione-8-(2-{[(2,3- dihydro-1,4-benzodioxin-2-yl)-methyl]amino}ethyl) monomethanesulfonate	CHIRAL-AGP	11	127
Bendroflumethazide	CHIRAL-AGP	11	7, 12, 13
Benflourex	CHIRAL-AGP	12	101
Benzoin	CHIRAL-AGP	12	
N-benzoyl-DL-alanine	CHIRAL-AGP	12	
N-benzoyl-DL-leucine	CHIRAL-HSA	12	
N-benzoyl-DL-valine	CHIRAL-AGP	12	
α,α′-bis[3-(N-benzyl-N-methylcarbamoyl)-piperidino]-p-xylene dihydrobromide	CHIRAL-AGP	12	82
Berabrost sodium	CHIRAL-AGP	12	66, 91
Betaxolol	CHIRAL-CBH	12	76, 87, 149
N-t-BOC-D,L-valine	CHIRAL-AGP	12	
Bumadizon	CHIRAL-AGP	12	32
Bunolol	CHIRAL-AGP	12	119
Bupivacaine	CHIRAL-AGP	12	1, 2, 7, 9, 11, 12, 13, 22, 37, 38, 44, 71, 141, 154
Bupranolol	CHIRAL-AGP	13	76, 101
Bupropion	CHIRAL-AGP	13	101
Carazolol	CHIRAL-AGP	13	76, 101
Carbuterol	CHIRAL-CBH	13	
Carprofen	CHIRAL-AGP	13	100
Carvediol	CHIRAL-CBH	13	
Cathinone	CHIRAL-CBH	13	
cis-trans-Cavinton	CHIRAL-AGP	13	70
Chlophedianol	CHIRAL-AGP	13	
Chlortalidone	CHIRAL-AGP	13	
Cimetidine sulphoxide	CHIRAL-CBH	13	
Citalopram	CHIRAL-AGP	13	145
Clenbuterol	CHIRAL-AGP	14	101
Cloperastine	CHIRAL-AGP	14	101
Cyamemazine	CHIRAL-AGP	14	138
Cyclopentolate	CHIRAL-AGP	14	
Cyclophosphamide	CHIRAL-AGP	14	140
Cyklandelate	CHIRAL-AGP	14	
Dansyl-DL-valine	CHIRAL-AGP	14	
1-Decyl-3-(N,N-diehtylcarbamoyl) piperi-dine Hydrabromide	CHIRAL-AGP	14	82
2-(2,4-Dichlorophenoxy)-propionic acid	CHIRAL-AGP	14	
Dihydrodiazepam	CHIRAL-AGP	14	125
2-(4,5-dihydro-1H-imidazol-2-yl)-2-propyl-1,2,3,4-tetrahydropyrrolo [3,2,1-hi]-indole	CHIRAL-AGP	14	63

Substanse	Column	Page	Reference
Dihydropyridines	CHIRAL-AGP	15	148
Diltiazem	CHIRAL-AGP	15	36
Dimethindene	CHIRAL-AGP	15	9, 12, 13, 112, 138
Diperodon	CHIRAL-AGP	15	9, 12, 13, 101
Disopyramide	CHIRAL-AGP	15	1, 2, 3, 4, 7, 9, 12, 13, 15, 16, 35, 71, 85, 101
Dixyrazine	CHIRAL-AGP	15	29, 101
N-2,4-DNP-DL-α-amino-n butyric acid	CHIRAL-AGP	15	
N-2,4-DNP-DL-α-amino-n-butyric acid	CHIRAL-HSA	15	
N-2,4-DNP-DL-citrulline	CHIRAL-HSA	15	
N-2,4-DNP-DL-ethionine	CHIRAL-AGP	15	
N-2,4-DNP-DL-glutamic acid	CHIRAL-HSA	15	
N-2,4-DNP-DL-methionine	CHIRAL-AGP	16	
N-2,4-DNP-DL-methionine	CHIRAL-HSA	16	
N-2,4-DNP-DL-norleucine	CHIRAL-AGP	16	
Dobutamine	CHIRAL-CBH	16	8, 12, 13
Doxazosin	CHIRAL-AGP	16	41
Dropropizine	CHIRAL-CBH	16	
Epanolol	CHIRAL-CBH	16	
Ephedrine	CHIRAL-AGP	16	8, 9, 12, 13
Epibatidine	CHIRAL-AGP	16	106
Epinephrine	CHIRAL-CBH	16	
Etodolac	CHIRAL-AGP	16	103
Felodipine	CHIRAL-AGP	16	123, 148
Fendiline	CHIRAL-AGP	17	101
Feneterol	CHIRAL-CBH	17	
Fenoprofen	CHIRAL-AGP	17	8, 32, 100, 110
Flurbiprofen	CHIRAL-AGP	17	32, 58, 72, 77, 96, 100, 110, 113
Fluoxetine	CHIRAL-AGP	17	
Folinic acid (Leucovorin)	CHIRAL-HSA	17	
H 174/48	CHIRAL-CBH	17	
H 201/68	CHIRAL-CBH	17	
H 309/40	CHIRAL-AGP	27	147
H 310/83	CHIRAL-AGP	27	147
Hesperitin	CHIRAL-AGP	17	
Hexobarbital	CHIRAL-AGP	17	7, 12, 13, 28
Hippuryl-phenyllactic acid	CHIRAL-AGP	17	
HMG-CoA reductase inhibitor	CHIRAL-AGP	17	78
Hydroxychloroquine	CHIRAL-AGP	18	62, 89, 120
3-Hydroxymethyl-2-methyl-9-phenyl-7H-8,9-dihydropyrano[2,3-c]-imidazo[1,2-a]pyridine	CHIRAL-AGP	27	147
E-10-Hydroxy nortriptyline	CHIRAL-AGP	18	
2-(p-Hydroxyphenoxy)propionic acid	CHIRAL-AGP	18	
4-Hydroxypropranolol	CHIRAL-CBH	18	
Ibuprofen	CHIRAL-AGP	18	7, 8, 12, 13, 29, 32, 42, 43, 46, 53, 72, 96, 100, 103, 110, 150, 151
Ifosfamide	CHIRAL-AGP	18	111
Isopropylidenglycerol-4-methylester	CHIRAL-AGP	18	
Isradipine	CHIRAL-AGP	18	
Ketamine	CHIRAL-AGP	18	2, 12, 13, 71, 142
Ketoconazole	CHIRAL-HSA	18	
Ketoprofen	CHIRAL-AGP	19	7, 12, 13, 32, 96, 100, 110, 131
Ketoprofen	CHIRAL-HSA	19	

Substance	Column	Page	Reference
Kynurenine	CHIRAL-HSA	19	
Laudanosine	CHIRAL-CBH	19	
Luciferin	CHIRAL-AGP	19	85
Medetomidine	CHIRAL-AGP	19	26
Mefloquine	CHIRAL-AGP	19	61, 107
Mephenytoin	CHIRAL-AGP	19	28
Mepivacaine	CHIRAL-AGP	19	1, 2, 9, 11, 12, 13, 37, 71, 141
Mepenzolate bromide	CHIRAL-AGP	19	1, 2, 8, 9, 12, 13
Meptazinol	CHIRAL-AGP	19	126
Metanephrine	CHIRAL-CBH	19	
Methadone	CHIRAL-AGP	20	9, 12, 13, 51, 84, 105, 115, 143, 146
o-Methoxymandelic acid	CHIRAL-HSA	20	
α-Methoxyphenylacetic acid	CHIRAL-HSA	20	
1-(p-Methoxyphenyl)-3-butylamine	CHIRAL-AGP	20	
3-Methylethylether-2-methyl-9-phenyl-7H-8,9-dihydropyrano[2,3-c]-imidazo[1,2-a] pyridine	CHIRAL-AGP	27	147
Methylphenobarbital	CHIRAL-AGP	20	28
Methylphenylcyanoacetic acid ethyl ester	CHIRAL-AGP	20	
Metolazone	CHIRAL-AGP	20	
Metoprolol	CHIRAL-AGP CHIRAL-CBH	20	6, 8, 9, 12, 13, 20, 21, 22, 23, 29, 69, 76, 87, 101, 112, 149
Mianserin	CHIRAL-AGP	20	130, 132
Midodrine	CHIRAL-AGP	20	
Modafinil	CHIRAL-AGP	20	75
Moprolol	CHIRAL-CBH	21	
Mosapride	CHIRAL-AGP	21	134, 152
1-(1-Naphthyl)-ethylamine	CHIRAL-AGP	21	
Naproxen	CHIRAL-AGP	21	7, 8, 12, 13, 32, 33, 49, 67, 80, 100, 117
Nefopam	CHIRAL-AGP	21	101
Nicotine	CHIRAL-AGP	21	93
Nitrendipine	CHIRAL-AGP	21	
Norepinephrine	CHIRAL-CBH	21	
Norketamin	CHIRAL-AGP		142
Normetanephrine	CHIRAL-CBH	21	
Octopamine	CHIRAL-CBH	21	
Omeprazole	CHIRAL-AGP	21	133,144
Oxamniquine	CHIRAL-AGP	22	31, 34
Oxazoline	CHIRAL-AGP	22	
Oxfendazole	CHIRAL-AGP	22	47
Oxodipine	CHIRAL-AGP	22	118
Oxprenolol	CHIRAL-AGP	22	6, 9, 12, 13, 29, 76, 101, 112
Oxybutynin	CHIRAL-CBH	22	153
Oxyphencyclimine	CHIRAL-AGP	22	1, 9, 12, 13
Oxyphenonium	CHIRAL-AGP	22	48
Pamatolol	CHIRAL-CBH	22	
Pargyline N-oxide	CHIRAL-AGP	22	
Penthiobarbital	CHIRAL-AGP	22	
Pentobarbitone	CHIRAL-AGP	22	128
Pheniramine	CHIRAL-AGP	23	101, 112, 138

Substance	Column	Page	References
2-Phenoxypropionic acid	CHIRAL-AGP	23	7, 8, 12, 13
2-Phenylbutyric acid	CHIRAL-AGP	23	8, 9, 12, 13
Phenylethanolamine	CHIRAL-CBH	23	
2-Phenylpropionic acid (Hydratropic acid)	CHIRAL-HSA	23	
Phenyramidol	CHIRAL-AGP	23	2, 12
Pindolol	CHIRAL-AGP	23	6, 12, 13, 29, 76, 87, 101, 112
3-PPP	CHIRAL-AGP	23	2, 12, 13
Practolol	CHIRAL-CBH	23	76
Prilocaine	CHIRAL-CBH	23	1
Procyclidine	CHIRAL-AGP	23	101
Proglumide	CHIRAL-AGP	23	85
Promethazine	CHIRAL-AGP	24	1, 2, 4, 5, 8, 9, 12, 13, 29, 101, 112, 138
Propafenone	CHIRAL-CBH	24	101
Propranolol	CHIRAL-AGP	24	6, 12, 13, 29, 73, 76, 87, 92, 101, 112, 114, 145, 149
Proxyphylline	CHIRAL-CBH	24	
Prozac	CHIRAL-AGP	17	
Remoxipride	CHIRAL-AGP	24	92, 101
Rosmarinic acid	CHIRAL-AGP	24	135
Salbutamol	CHIRAL-AGP	24	
Salmeterol	CHIRAL-CBH	24	
Secobarbital	CHIRAL-AGP	24	28
Solketal tosylate	CHIRAL-AGP	24	
Sotalol	CHIRAL-CBH	24	76, 149
Sulfinpyrazon	CHIRAL-AGP	24	
Suprofen	CHIRAL-AGP	25	
Talinolol	CHIRAL-CBH	25	76
Terbutaline	CHIRAL-AGP	25	7, 8, 9, 12, 13, 22
Terodiline	CHIRAL-AGP	25	29, 71
1,2,3,4-tetrahydro-1-naphthol	CHIRAL-AGP	25	
Tetrahydropapaveroline	CHIRAL-CBH	25	
Tetrahydrozoline	CHIRAL-AGP	25	8, 12, 13, 101
Tetramisole	CHIRAL-CBH	25	
Thalidomide	CHIRAL-CBH	25	
Thiopentone	CHIRAL-AGP	25	128
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Tiaprofenic acid	CHIRAL-AGP	25	32, 100, 137
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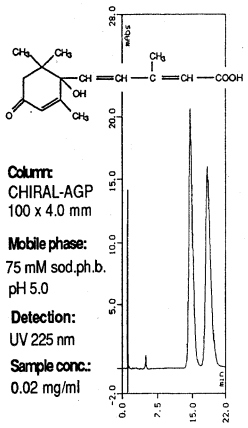
Tiprenolol	CHIRAL-AGP	26	101
Tofisopam	CHIRAL-AGP	26	125
Tolamolol	CHIRAL-CBH	26	
Toliprolol	CHIRAL-CBH	26	76
Tolperisone	CHIRAL-AGP	26	101
Trihexyphenidyl	CHIRAL-AGP	26	101
Trimipramine	CHIRAL-AGP	26	4, 29, 81, 92, 101
Tropicamide	CHIRAL-AGP	26	2, 12
Uxepam	CHIRAL-AGP	26	125
Vamicamide	CHIRAL-AGP	26	104
Verapamil	CHIRAL-AGP	26	8, 12, 13, 24, 50, 68, 86, 90, 139
Warfarin	CHIRAL-AGP	27	27, 74, 94, 99
Reference 19	CHIRAL-AGP	27	19
Reference 83	CHIRAL-AGP	27	83
Reference 97	CHIRAL-AGP	27	97

Abscisic acid



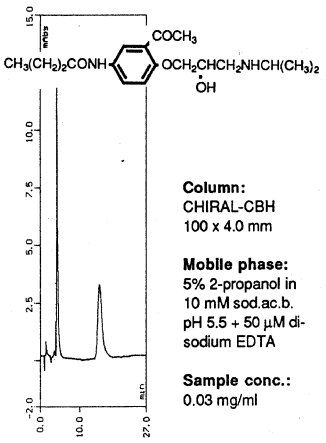
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 75 mM sod.ph.b. pH 5.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Acebutolol

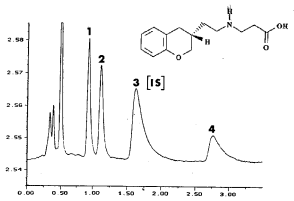


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ac.b. pH 5.5 + 50 µM di-sodium EDTA

Sample conc.: 0.03 mg/ml

ß-alanin-N-[2-(3,4-dihydro-2H-1-benzopyran-3-yl)-ethyl] methylester hydro-chloride (Ref. 129)

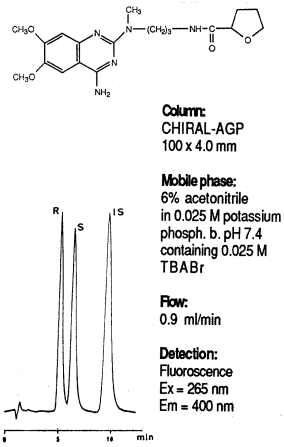


Column: CHIRAL-AGP 150x4.0 mm + guard column 10 x 3.0 mm

Mobile phase: phosph. buffer, pH 7.0 2.5 mM TBA

1. (-)-beta-alanin-N-[2-(3,4-dihydro-2H-1-benzopyran-3-yl)-ethyl] carboxylic acid
2. (+)-beta-alanin-N-[2-(3,4-dihydro-2H-1-benzopyran-3- yl)-ethyl] carboxylic acid
3. (-)-beta-alanin-N-[2-(3,4-dihydro-2H-1-benzopyran-3- yl)-ethyl] methylester

Alfuzosin (Ref. 30)



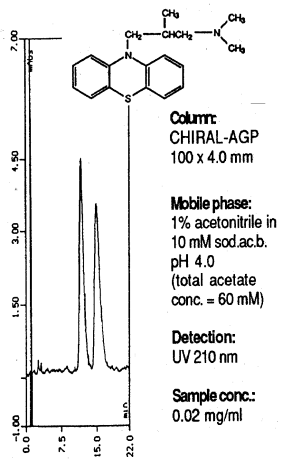
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 6% acetonitrile in 0.025 M potassium phosph. b. pH 7.4 containing 0.025 M TBABr

Flow: 0.9 ml/min

Detection: Fluoroscence Ex = 265 nm Em = 400 nm

Alimemazine



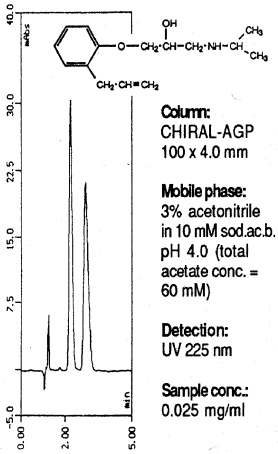
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1% acetonitrile in 10 mM sod.ac.b. pH 4.0 (total acetate conc. = 60 mM)

Detection: UV 210 nm

Sample conc.: 0.02 mg/ml

Alprenolol



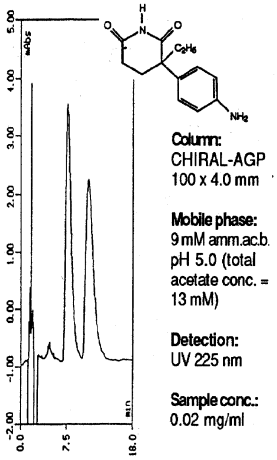
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 3% acetonitrile in 10 mM sod.ac.b. pH 4.0 (total acetate conc. = 60 mM)

Detection: UV 225 nm

Sample conc.: 0.025 mg/ml

Aminoglutethimide



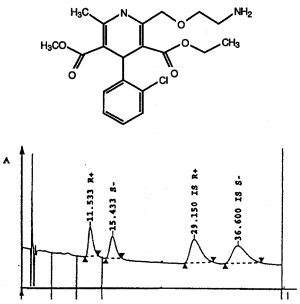
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 9 mM amm.ac.b. pH 5.0 (total acetate conc. = 13 mM)

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Amlodipine (Ref. 155)



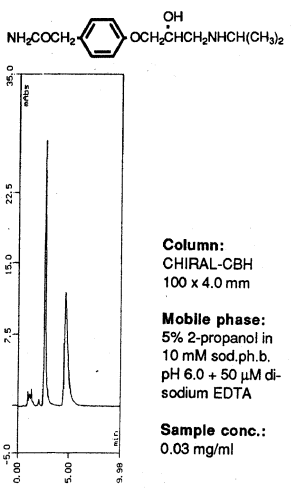
Column: CHIRAL-AGP 150 x 4.0 mm

Mobile phase: 1 % 1-propanol in 10 mM acetat buffer, pH 4.5

Temp.: 30 °C

Column switching system

Atenolol

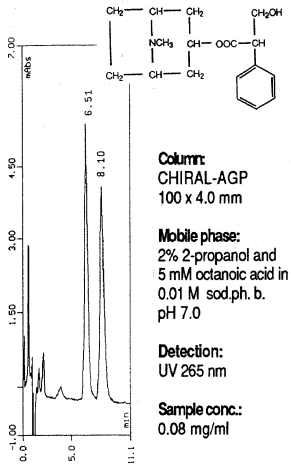


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ph.b. pH 6.0 + 50 µM di-sodium EDTA

Sample conc.: 0.03 mg/ml

Atropine



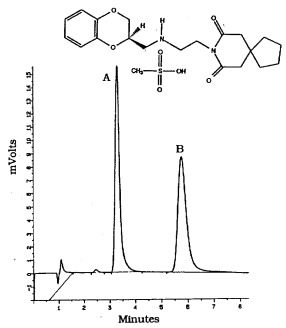
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 2% 2-propanol and 5 mM octanoic acid in 0.01 M sod.ph. b. pH 7.0

Detection: UV 265 nm

Sample conc.: 0.08 mg/ml

8-Azaspiro[4,5]decane-7,9-dione-8-(2-{[(2,3-dihydro-1,4-benzodioxin-2-yl)-methyl]amino}ethyl) monomethanesulfonate (Ref. 127)



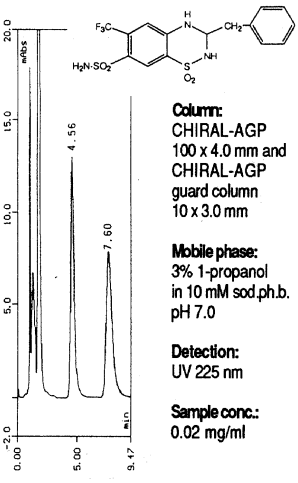
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 27.5% methanol in 50 mM phos. buffer, pH 5.0

Flow: 1.0 ml/min

Detection: UV 210 nm

Bendroflumethazide



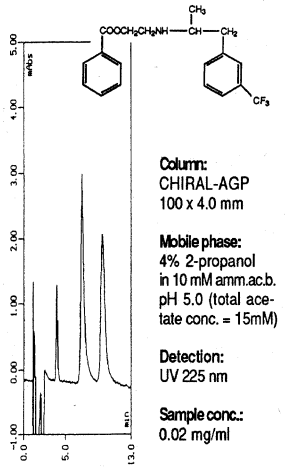
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 3% 1-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Benflourex



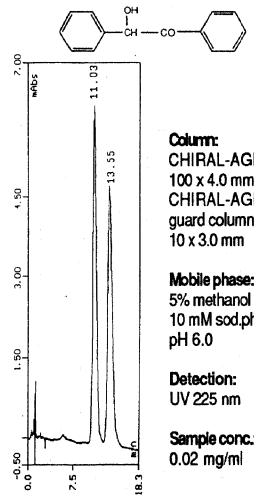
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 4% 2-propanol in 10 mM amm.ac.b. pH 5.0 (total acetate conc. = 15mM)

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Benzoin



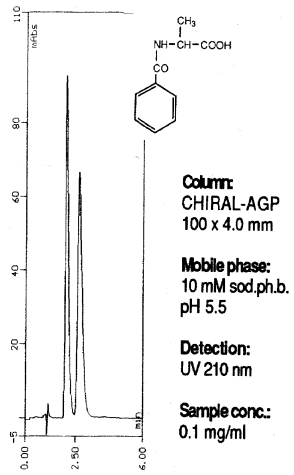
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 5% methanol in 10 mM sod.ph.b. pH 6.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

N-benzoyl-DL-alanine



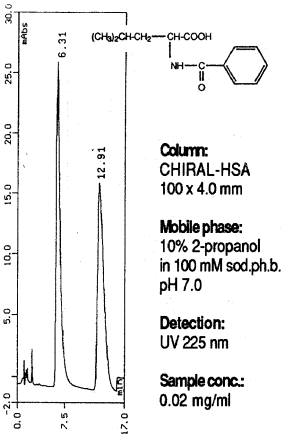
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10 mM sod.ph.b. pH 5.5

Detection: UV 210 nm

Sample conc.: 0.1 mg/ml

N-benzoyl-DL-leucine



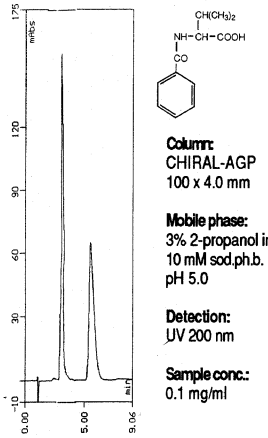
Column: CHIRAL-HSA 100 x 4.0 mm

Mobile phase: 10% 2-propanol in 100 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

N-benzoyl-DL-valine



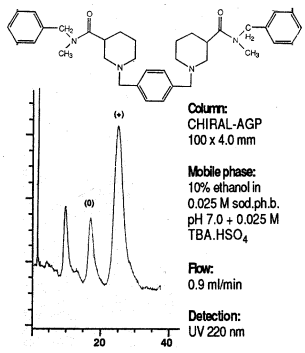
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 3% 2-propanol in 10 mM sod.ph.b. pH 5.0

Detection: UV 200 nm

Sample conc.: 0.1 mg/ml

α,α′-bis[3-(N-benzyl-N-methylcarbamoyl)-piperidino]-p-xylene dihydrobromide (Ref. 82)



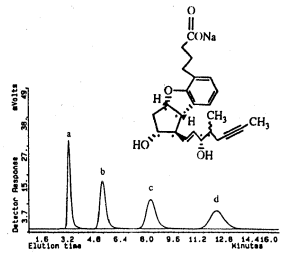
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10% ethanol in 0.025 M sod.ph.b. pH 7.0 + 0.025 M TBA.HSO_4

Flow: 0.9 ml/min

Detection: UV 220 nm

Berabrost sodium (Ref. 91)



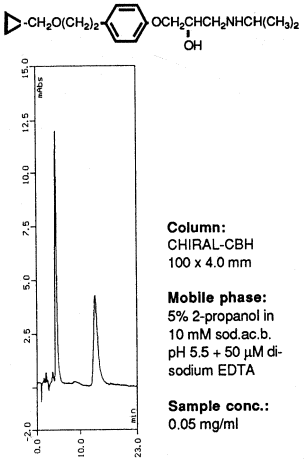
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 0.5% acetontrile in 20 mM Na_2HPO_4 pH 7.0

Flow: 1.0 ml/min

Detection: Fluorescence, Ex = 282 nm, Em = 304 nm

Betaxolol

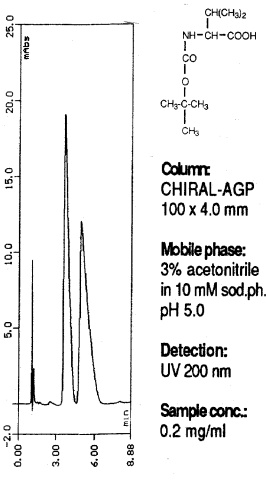


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ac.b. pH 5.5 + 50 µM disodium EDTA

Sample conc.: 0.05 mg/ml

N-t-BOC-DL-valine



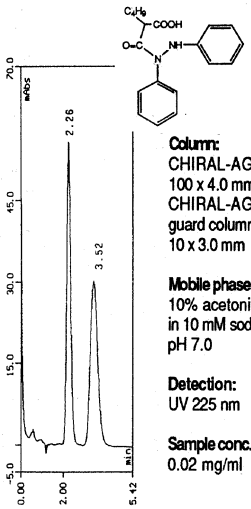
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 3% acetonitrile in 10 mM sod.ph.b. pH 5.0

Detection: UV 200 nm

Sample conc.: 0.2 mg/ml

Bumadizon



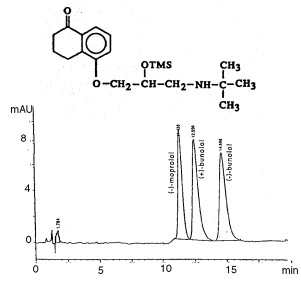
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 10% acetonitrile in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Bunolol (Ref. 119)



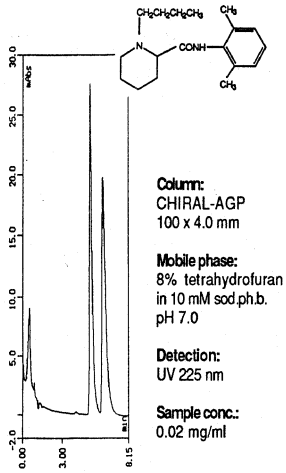
Column: CHIRAL-AGP 150 x 4.0 mm

Mobile phase: 2% 2-propanol in 10 mM ph. b., pH 7.0, 1mM DMOA

Flow: 0.9 ml/min

Detection: UV 223 nm

Bupivacaine



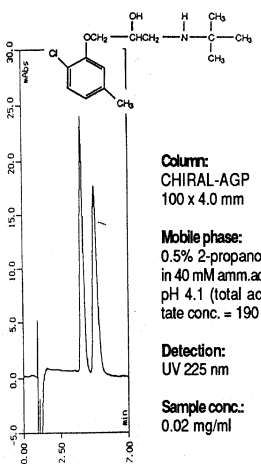
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 8% tetrahydrofuran in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Bupranolol



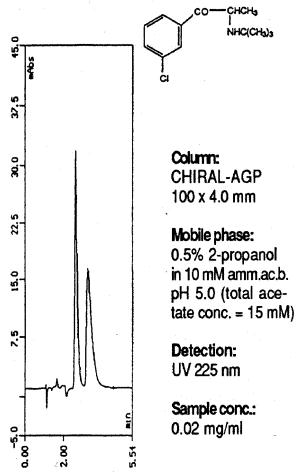
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
0.5% 2-propanol
in 40 mM amm.ac.b.
pH 4.1 (total ace-
tate conc. = 190 mM)

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Bupropion



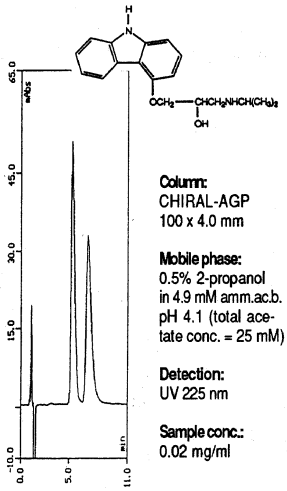
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
0.5% 2-propanol
in 10 mM amm.ac.b.
pH 5.0 (total ace-
tate conc. = 15 mM)

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Carazolol



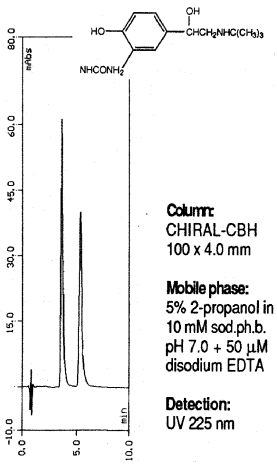
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
0.5% 2-propanol
in 4.9 mM amm.ac.b.
pH 4.1 (total ace-
tate conc. = 25 mM)

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Carbuterol

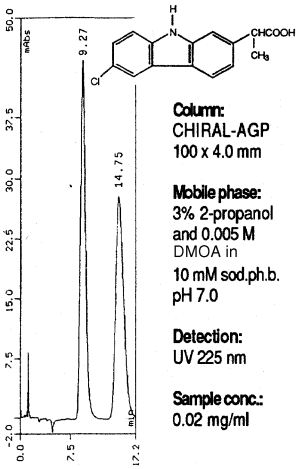


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 7.0 + 50 µM
disodium EDTA

Detection:
UV 225 nm

Carprofen



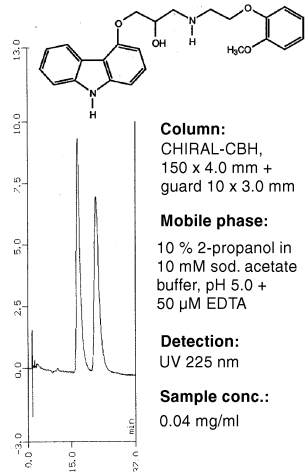
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
3% 2-propanol
and 0.005 M
DMOA in
10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Carvediol



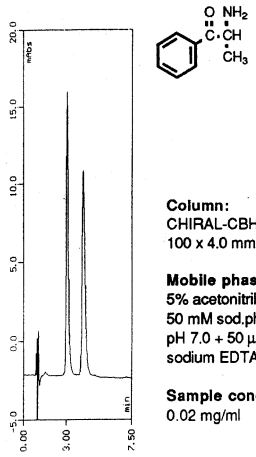
Column:
CHIRAL-CBH,
150 x 4.0 mm +
guard 10 x 3.0 mm

Mobile phase:
10 % 2-propanol in
10 mM sod. acetate
buffer, pH 5.0 +
50 µM EDTA

Detection:
UV 225 nm

Sample conc.:
0.04 mg/ml

Cathinone

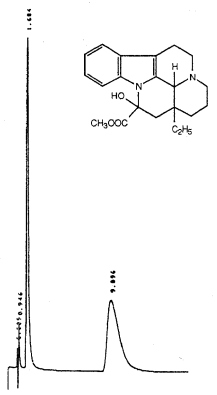


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% acetonitrile in
50 mM sod.ph.b.
pH 7.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.02 mg/ml

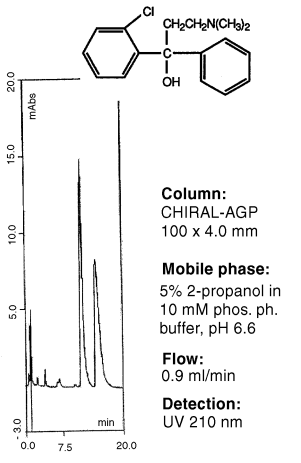
cis-trans-Cavintone (Ref. 70)



Column: CHIRAL-AGP 50 x 4.0 mm

Mobile phase: 35% acetonitrile in 10 mM sod.ph.b.
pH 6.0

Chlophedianol



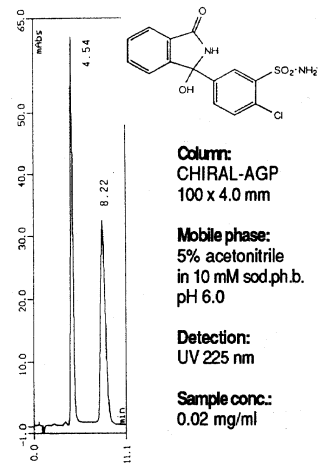
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM phos. ph.
buffer, pH 6.6

Flow:
0.9 ml/min

Detection:
UV 210 nm

Chlortalidone



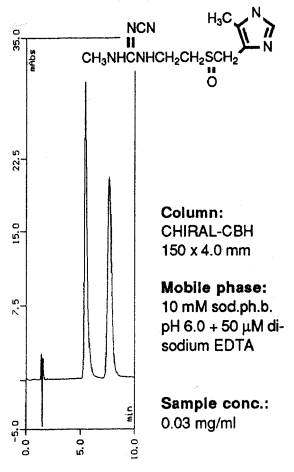
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
5% acetonitrile
in 10 mM sod.ph.b.
pH 6.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Cimetidine sulphoxide

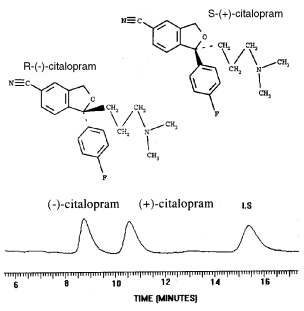


Column:
CHIRAL-CBH
150 x 4.0 mm

Mobile phase:
10 mM sod.ph.b.
pH 6.0 + 50 µM di-
sodium EDTA

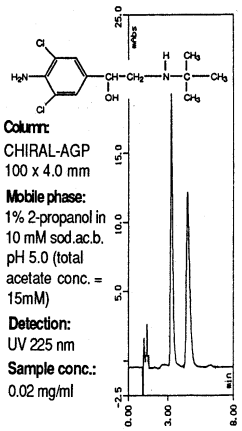
Sample conc.:
0.03 mg/ml

Citalopram (Ref. 145)



Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 10 mM hexanoic acid + 3.0 mM SB-12 in ph. b., pH 6.5
Flow: 0.9 ml/min
Temp.: 32.7 °C

Clenbuterol



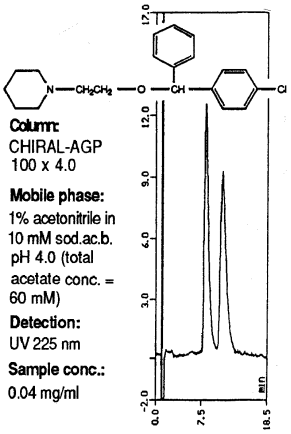
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1% 2-propanol in 10 mM sod.ac.b. pH 5.0 (total acetate conc. = 15mM)

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Cloperastine



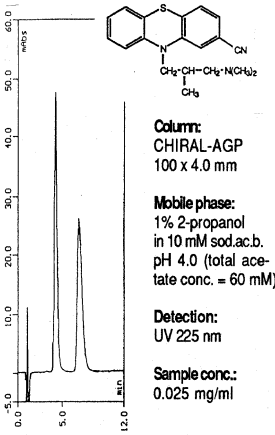
Column: CHIRAL-AGP 100 x 4.0

Mobile phase: 1% acetonitrile in 10 mM sod.ac.b. pH 4.0 (total acetate conc. = 60 mM)

Detection: UV 225 nm

Sample conc.: 0.04 mg/ml

Cyamemazine



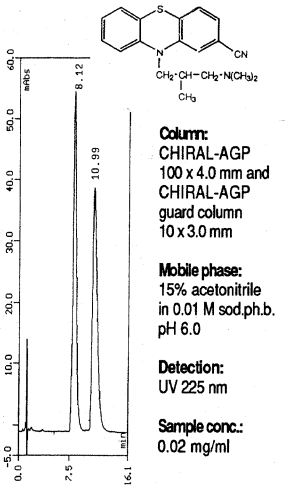
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1% 2-propanol in 10 mM sod.ac.b. pH 4.0 (total acetate conc. = 60 mM)

Detection: UV 225 nm

Sample conc.: 0.025 mg/ml

Cyamemazine



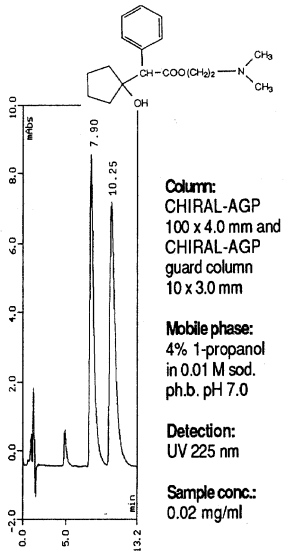
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 15% acetonitrile in 0.01 M sod.ph.b. pH 6.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Cyclopentolate



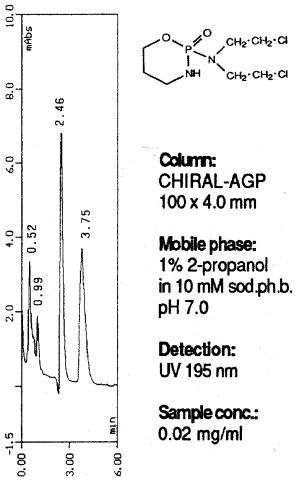
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 4% 1-propanol in 0.01 M sod. ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Cyclophosphamide



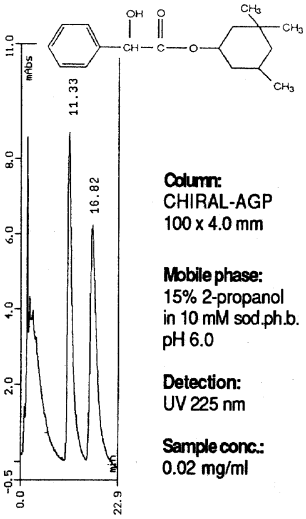
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 195 nm

Sample conc.: 0.02 mg/ml

Cyklandelate



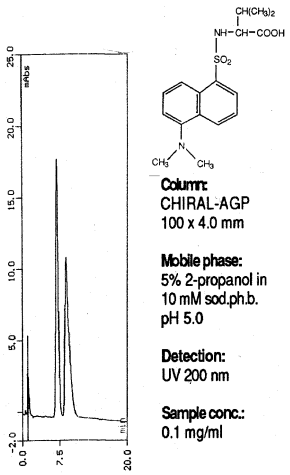
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 15% 2-propanol in 10 mM sod.ph.b. pH 6.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Dansyl-DL-valine



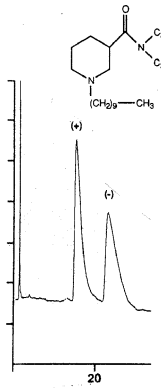
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ph.b. pH 5.0

Detection: UV 200 nm

Sample conc.: 0.1 mg/ml

1-Decyl-3-(N,N-diethyl-carbamoyl) piperidine hydrobromide (Ref. 82)



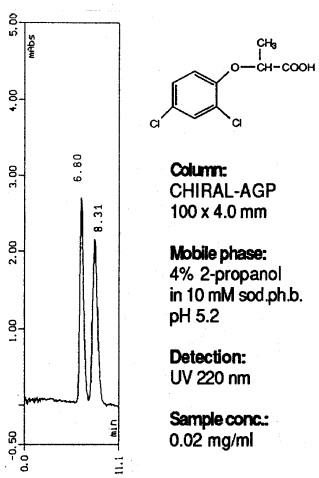
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10% ethanol in 0.025 M sod.ph.b. pH 7.0 + 0.025 M TBA.HSO_4

Flow: 0.9 ml/min

Detection: UV 225 nm

2-(2,4-dichlorophenoxy)-propionic acid



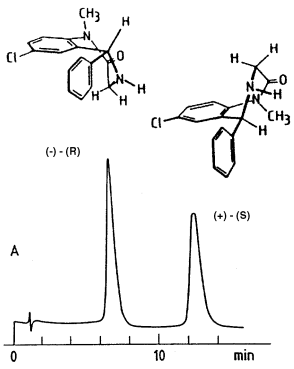
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 4% 2-propanol in 10 mM sod.ph.b. pH 5.2

Detection: UV 220 nm

Sample conc.: 0.02 mg/ml

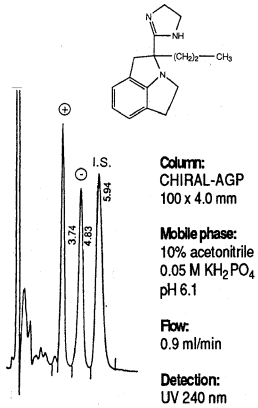
Dihydrodiazepam (Ref. 125)



Column: CHIRAL-AGP 100 x 4.0 mm + guard 10 x 3.0 mm

Mobile phase: 10% acetonitrile in 10 mM phosph. buffer, pH 7.0

2-(4,5-dihydro-1H-imidazol-2-yl)-2-propyl 1,2,3,4-tetrahydropyrrolo [3,2,1-hi]-indole (Ref. 63)



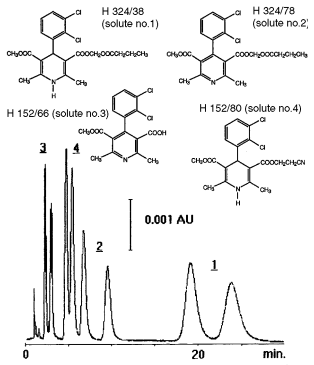
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10% acetonitrile in 0.05 M KH_2PO_4 pH 6.1

Flow: 0.9 ml/min

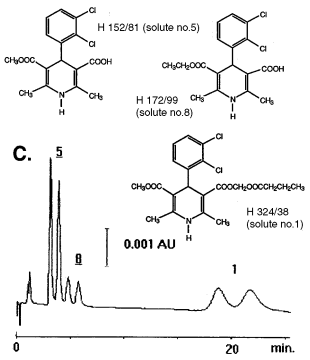
Detection: UV 240 nm

Dihydropyridines
H 324/38, H 324/78,
H 125/66 and H 152/80
(Ref. 148)



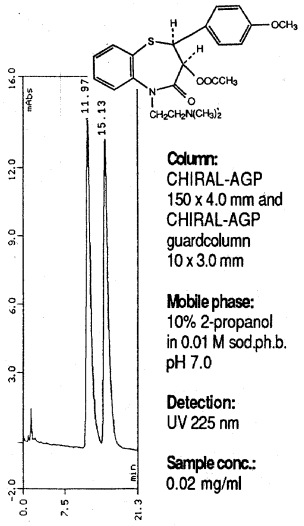
Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 25 % methanol in 10 mM phosph. b., pH 4.51
Detection: UV 242 nm
Flow: 1 ml/min

Dihydropyridines
H 152/81, H 172/99 and
H 324/38
(Ref. 148)



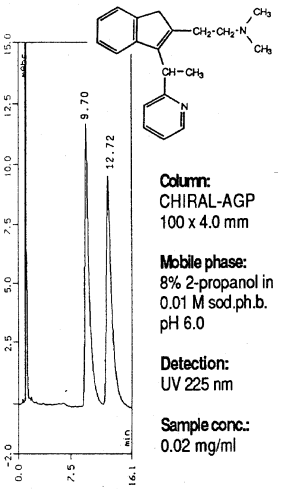
Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 4% acetonitrile, 18% methanol in 10 mM ph.b., pH 5.5
Detection: UV 242 nm

Diltiazem



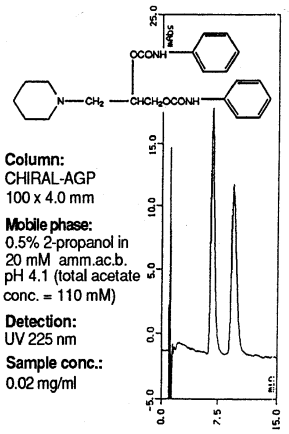
Column: CHIRAL-AGP 150 x 4.0 mm and CHIRAL-AGP guardcolumn 10 x 3.0 mm
Mobile phase: 10% 2-propanol in 0.01 M sod.ph.b. pH 7.0
Detection: UV 225 nm
Sample conc.: 0.02 mg/ml

Dimethindene



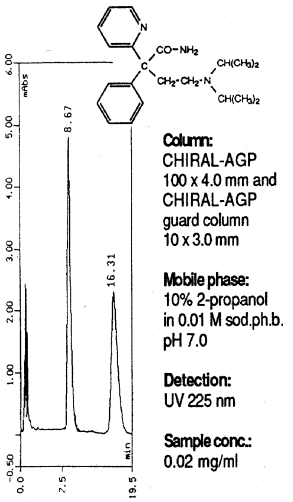
Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 8% 2-propanol in 0.01 M sod.ph.b. pH 6.0
Detection: UV 225 nm
Sample conc.: 0.02 mg/ml

Diperodon



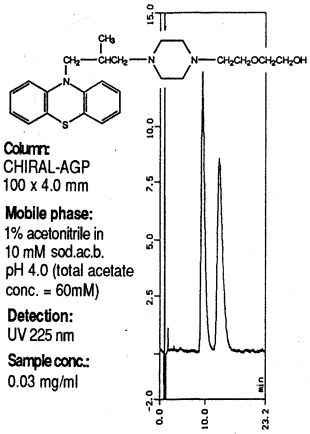
Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 0.5% 2-propanol in 20 mM amm.ac.b. pH 4.1 (total acetate conc. = 110 mM)
Detection: UV 225 nm
Sample conc.: 0.02 mg/ml

Disopyramide



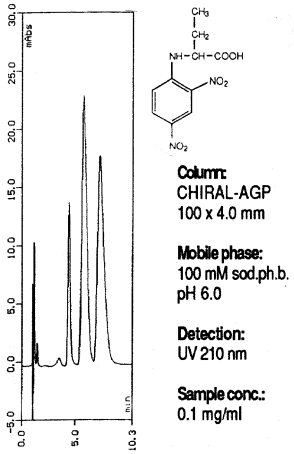
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm
Mobile phase: 10% 2-propanol in 0.01 M sod.ph.b. pH 7.0
Detection: UV 225 nm
Sample conc.: 0.02 mg/ml

Dixyrazine



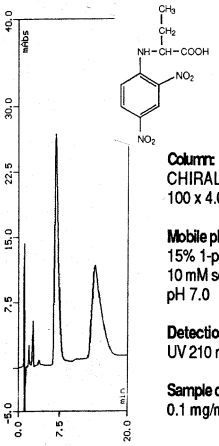
Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 1% acetonitrile in 10 mM sod.ac.b. pH 4.0 (total acetate conc. = 60mM)
Detection: UV 225 nm
Sample conc.: 0.03 mg/ml

N-2,4-DNP-DL-a-amino-n-butyric acid



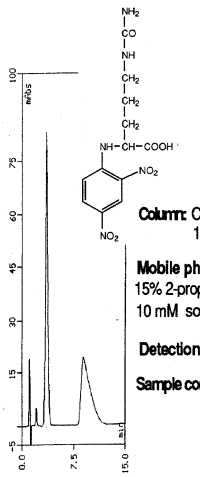
Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 100 mM sod.ph.b. pH 6.0
Detection: UV 210 nm
Sample conc.: 0.1 mg/ml

N-2,4-DNP-DL-a-amino-n-butyric acid



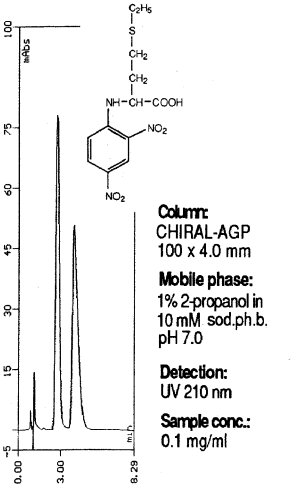
Column: CHIRAL-HSA 100 x 4.0 mm
Mobile phase: 15% 1-propanol in 10 mM sod.ph.b. pH 7.0
Detection: UV 210 nm
Sample conc.: 0.1 mg/ml

N-2,4-DNP-DL-citrulline



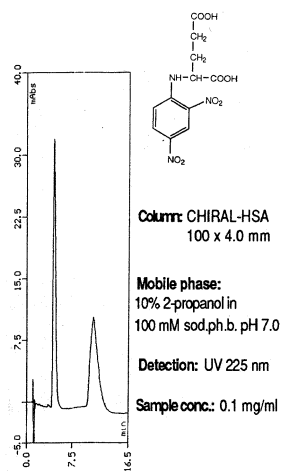
Column: CHIRAL-HSA 100 x 4.0 mm
Mobile phase: 15% 2-propanol in 10 mM sod.ph.b. pH 7.0
Detection: UV 210 nm
Sample conc.: 0.1 mg/ml

N-2,4-DNP-DL-ethionine



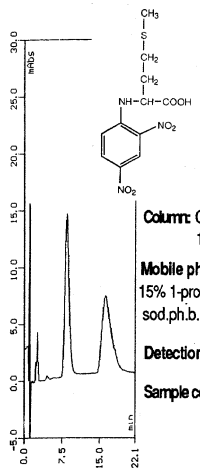
Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 1% 2-propanol in 10 mM sod.ph.b. pH 7.0
Detection: UV 210 nm
Sample conc.: 0.1 mg/ml

N-2,4-DNP-DL-glutamic acid



Column: CHIRAL-HSA 100 x 4.0 mm
Mobile phase: 10% 2-propanol in 100 mM sod.ph.b. pH 7.0
Detection: UV 225 nm
Sample conc.: 0.1 mg/ml

N-2,4-DNP-DL-methionine



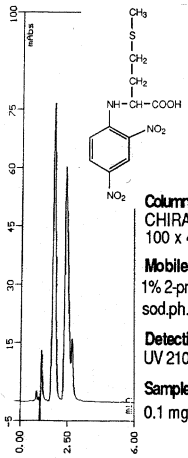
Column: CHIRAL-HSA
100 x 4.0 mm

Mobile phase:
15% 1-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 210 nm

Sample conc.: 0.1 mg/ml

N-2,4-DNP-DL-methionine



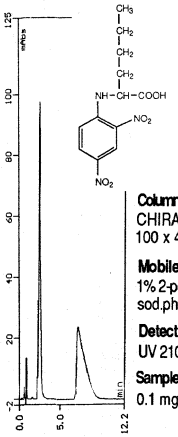
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection:
UV 210 nm

Sample conc.:
0.1 mg/ml

N-2,4-DNP-DL-norleucine



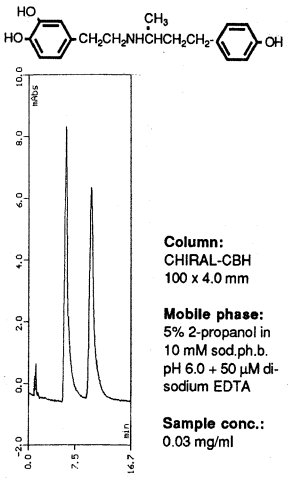
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection:
UV 210 nm

Sample conc.:
0.1 mg/ml

Dobutamine

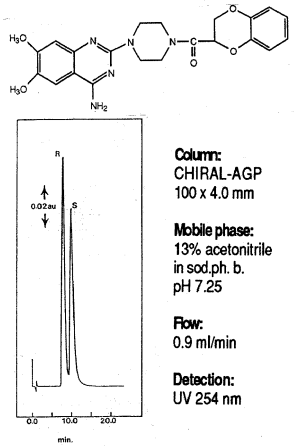


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in 10 mM sod.ph.b. pH 6.0 + 50 µM di-sodium EDTA

Sample conc.:
0.03 mg/ml

Doxazosin (Ref. 41)



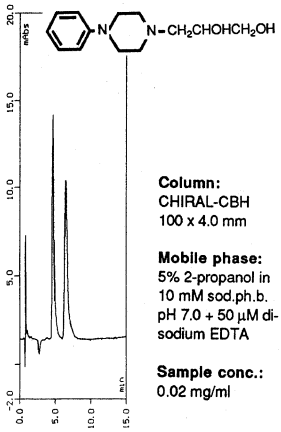
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
13% acetonitrile in sod.ph. b. pH 7.25

Flow:
0.9 ml/min

Detection:
UV 254 nm

Dropropizine

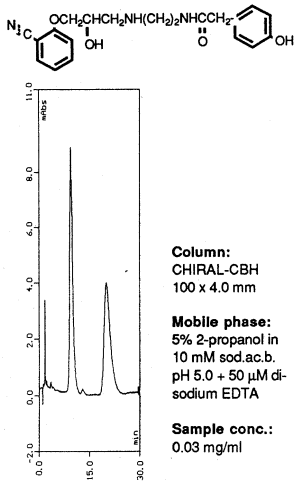


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in 10 mM sod.ph.b. pH 7.0 + 50 µM di-sodium EDTA

Sample conc.:
0.02 mg/ml

Epanolol

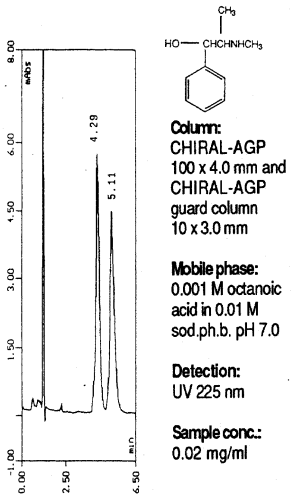


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in 10 mM sod.ac.b. pH 5.0 + 50 µM di-sodium EDTA

Sample conc.:
0.03 mg/ml

Ephedrine



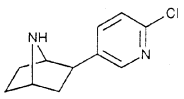
Column:
CHIRAL-AGP
100 x 4.0 mm and CHIRAL-AGP guard column
10 x 3.0 mm

Mobile phase:
0.001 M octanoic acid in 0.01 M sod.ph.b. pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Epibatidine (Ref. 106)



Column:
CHIRAL-AGP
100 x 4.0 mm

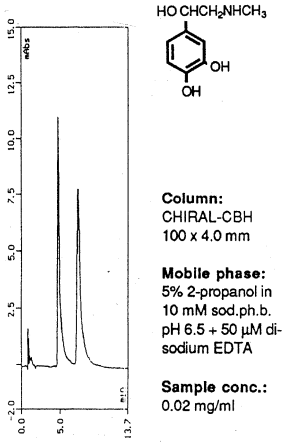
Mobile phase:
3% acetonitrile in 10 mM disodiumphosph. b. + 5 mM pentane sulphonic acid adj. to pH 7.4 with ortho-phosph. acid

Flow: 0.9 ml/min

Retention time:
(-)-epibatidine t_r = 6.68
(+)-epibatidine t_r = 8.34
Separation factor = 1.28
Resolution (R_s) =2.32

Detection: UV 215 nm

Epinephrine

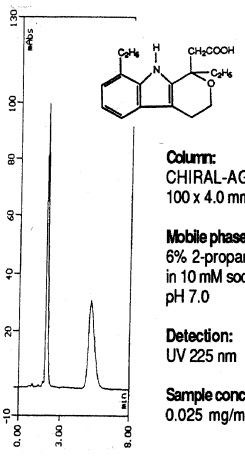


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in 10 mM sod.ph.b. pH 6.5 + 50 µM di-sodium EDTA

Sample conc.:
0.02 mg/ml

Etodolac



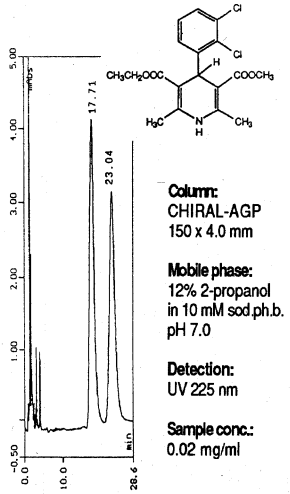
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
6% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.025 mg/ml

Felodipine



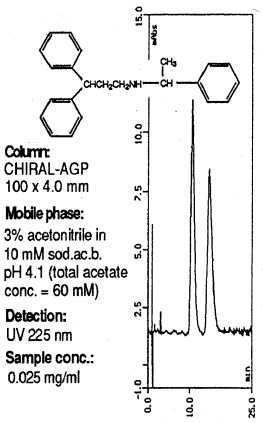
Column:
CHIRAL-AGP
150 x 4.0 mm

Mobile phase:
12% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Fendiline



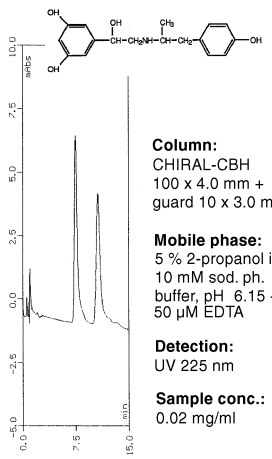
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
3% acetonitrile in
10 mM sod.ac.b.
pH 4.1 (total acetate
conc. = 60 mM)

Detection:
UV 225 nm

Sample conc.:
0.025 mg/ml

Feneterol



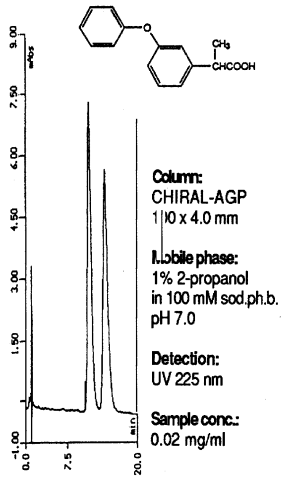
Column:
CHIRAL-CBH
100 x 4.0 mm +
guard 10 x 3.0 mm

Mobile phase:
5 % 2-propanol in
10 mM sod. ph.
buffer, pH 6.15 +
50 µM EDTA

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Fenoprofen



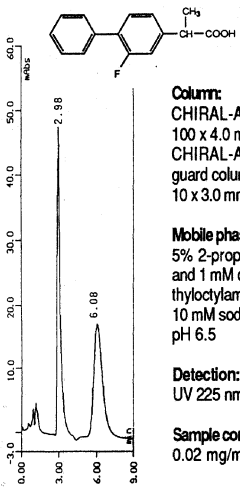
Column:
CHIRAL-AGP
1[illegible]0 x 4.0 mm

Mobile phase:
1% 2-propanol
in 100 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Flurbiprofen



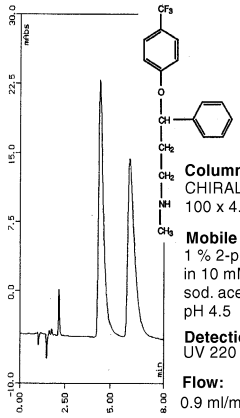
Column:
CHIRAL-AGP
100 x 4.0 mm and
CHIRAL-AGP
guard column
10 x 3.0 mm

Mobile phase:
5% 2-propanol
and 1 mM dime-
thyloctylamine in
10 mM sod.ph.b.
pH 6.5

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Fluoxetine (Prozac)



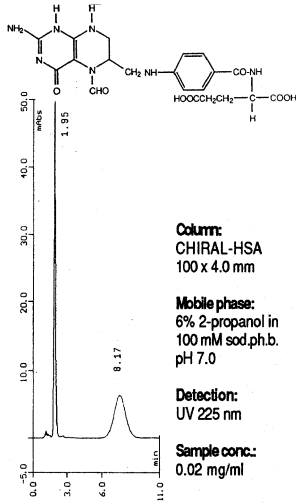
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1 % 2-propanol
in 10 mM
sod. acet. b.
pH 4.5

Detection:
UV 220 nm

Flow:
0.9 ml/min

Folinic acid (Leucovorin)



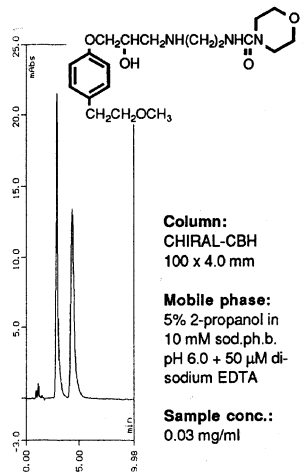
Column:
CHIRAL-HSA
100 x 4.0 mm

Mobile phase:
6% 2-propanol in
100 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

H 174/48

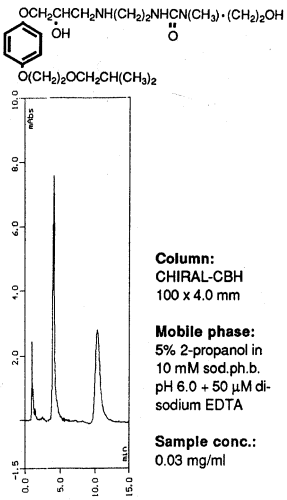


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.03 mg/ml

H 201/68

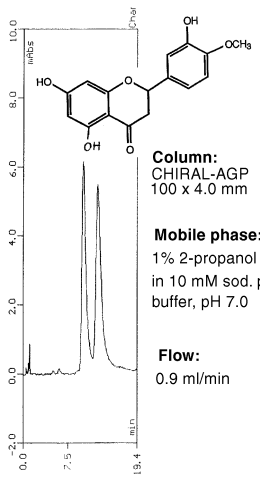


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.03 mg/ml

Hesperitin

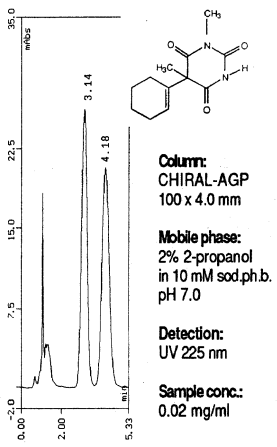


Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% 2-propanol
in 10 mM sod. ph.
buffer, pH 7.0

Flow:
0.9 ml/min

Hexobarbital



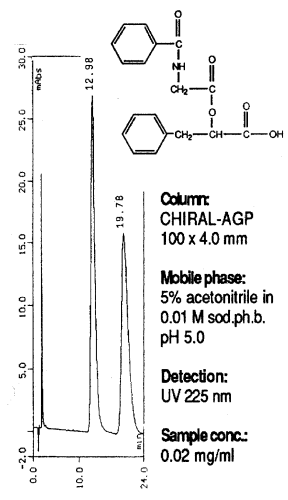
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
2% 2-propanol
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Hippuryl-phenyllactic acid



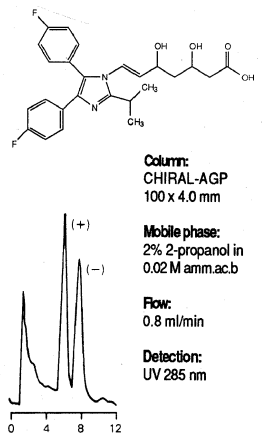
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
5% acetonitrile in
0.01 M sod.ph.b.
pH 5.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

HMG-CoA Reductase inhibitor (Ref. 78)



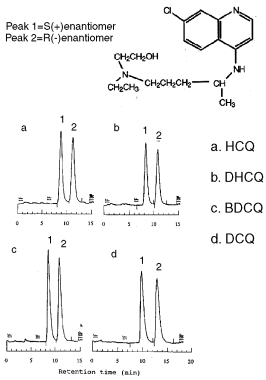
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
2% 2-propanol in
0.02 M amm.ac.b

Flow:
0.8 ml/min

Detection:
UV 285 nm

Hydroxychloroquine (Ref. 120)

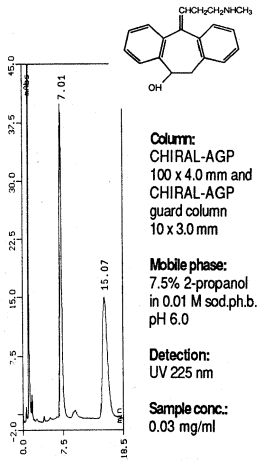


Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1 % acetonitrile, 5% 2-propanol in 50 mM sod.ph.b., pH 7.0

Flow: 1.0 ml/min

E-10-Hydroxy nortriptyline



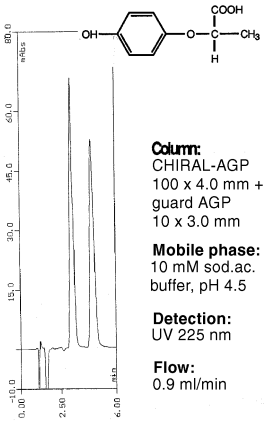
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 7.5% 2-propanol in 0.01 M sod.ph.b. pH 6.0

Detection: UV 225 nm

Sample conc.: 0.03 mg/ml

2-(p-Hydroxyphenoxy) propionic acid



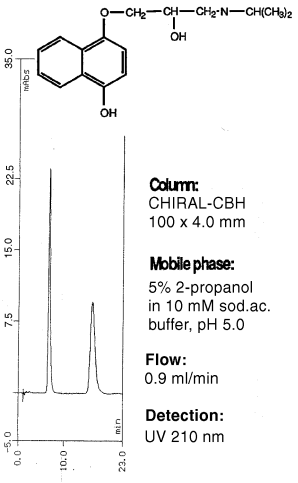
Column: CHIRAL-AGP 100 x 4.0 mm + guard AGP 10 x 3.0 mm

Mobile phase: 10 mM sod.ac. buffer, pH 4.5

Detection: UV 225 nm

Flow: 0.9 ml/min

4-Hydroxypropranolol



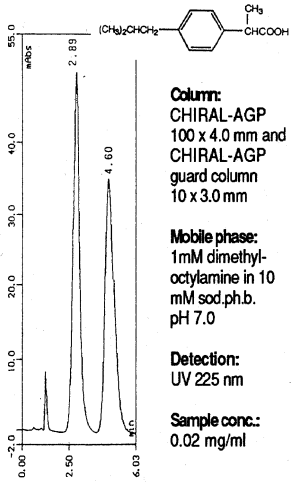
Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ac. buffer, pH 5.0

Flow: 0.9 ml/min

Detection: UV 210 nm

Ibuprofen



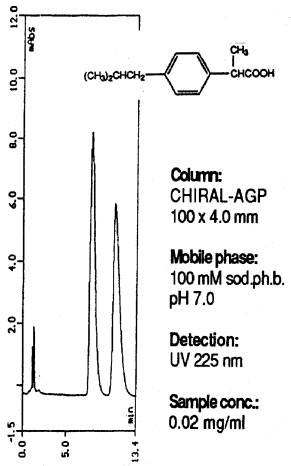
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 1mM dimethyl-octylamine in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Ibuprofen



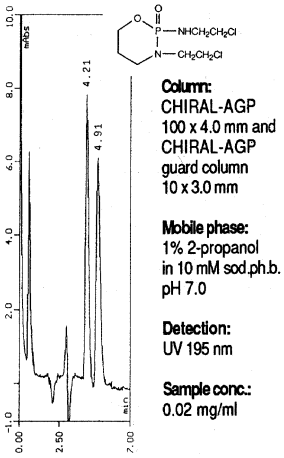
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 100 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Ifosfamide



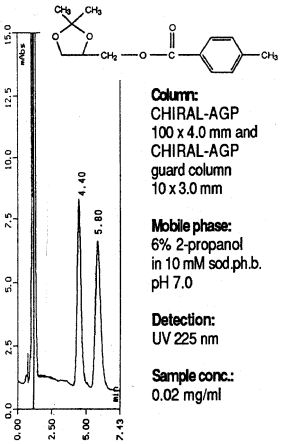
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 1% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 195 nm

Sample conc.: 0.02 mg/ml

Isopropylidenglycerol-4-methylester



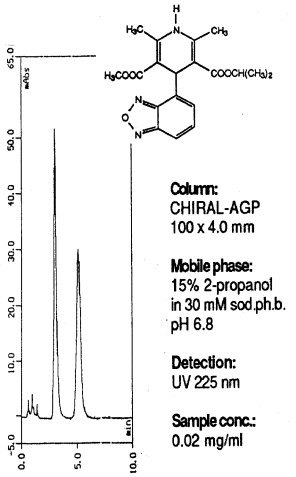
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 6% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Isradipine



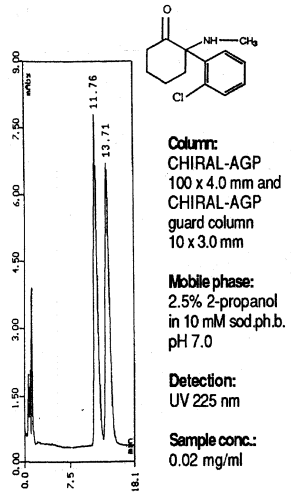
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 15% 2-propanol in 30 mM sod.ph.b. pH 6.8

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Ketamine



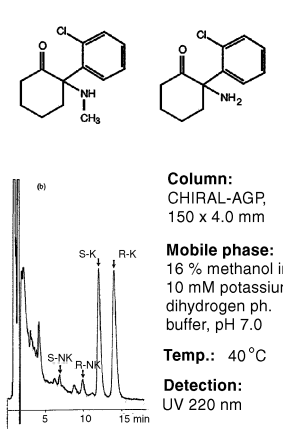
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 2.5% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Ketamine and norketamine (Ref. 142)



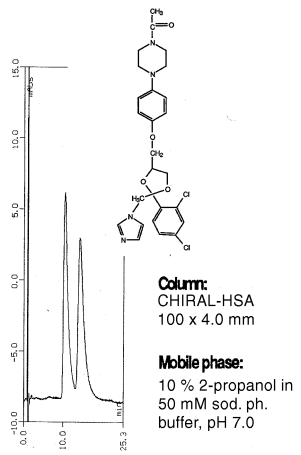
Column: CHIRAL-AGP, 150 x 4.0 mm

Mobile phase: 16 % methanol in 10 mM potassium dihydrogen ph. buffer, pH 7.0

Temp.: 40°C

Detection: UV 220 nm

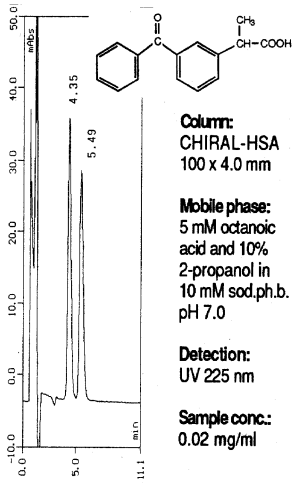
Ketoconazole



Column: CHIRAL-HSA 100 x 4.0 mm

Mobile phase: 10 % 2-propanol in 50 mM sod. ph. buffer, pH 7.0

Ketoprofen



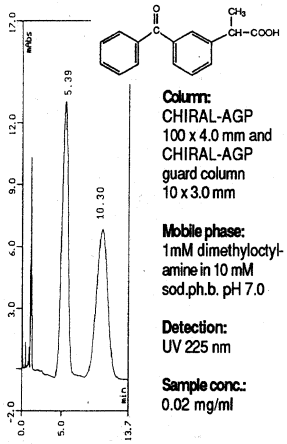
Column: CHIRAL-HSA 100 x 4.0 mm

Mobile phase: 5 mM octanoic acid and 10% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Ketoprofen



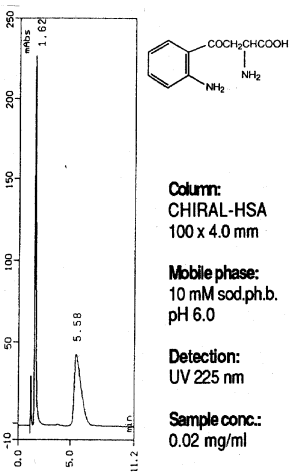
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 1mM dimethyloctylamine in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Kynurenine



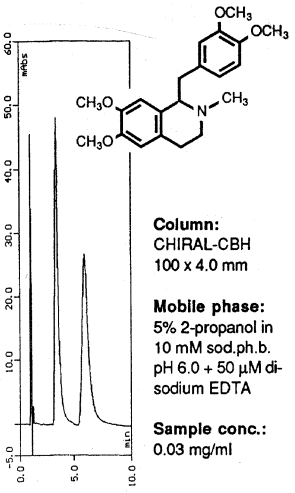
Column: CHIRAL-HSA 100 x 4.0 mm

Mobile phase: 10 mM sod.ph.b. pH 6.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Laudanosine

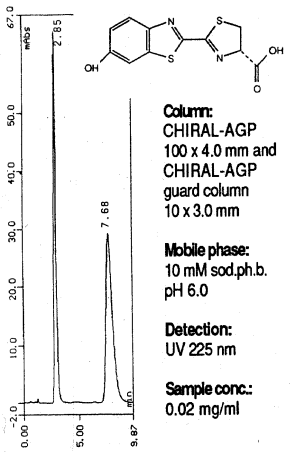


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ph.b. pH 6.0 + 50 µM disodium EDTA

Sample conc.: 0.03 mg/ml

Luciferin



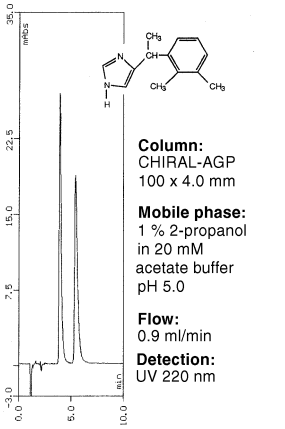
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 10 mM sod.ph.b. pH 6.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Medetomidine



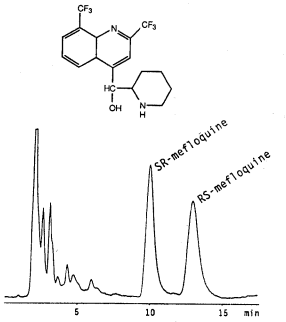
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1 % 2-propanol in 20 mM acetate buffer pH 5.0

Flow: 0.9 ml/min

Detection: UV 220 nm

Mefloquine (Ref. 107)



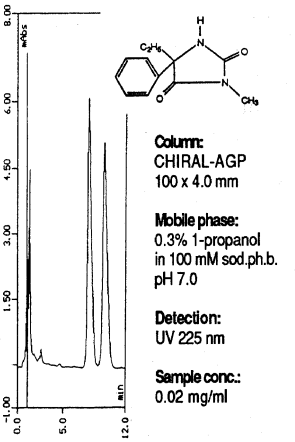
Column: CHIRAL-AGP 150 x 4.0 mm

Mobile phase: 10% 1-propanol in 0.05 M sod.ph. b. pH 4.85

Flow: 0.9 ml/min

Detection: UV 222 nm

Mephenytoin



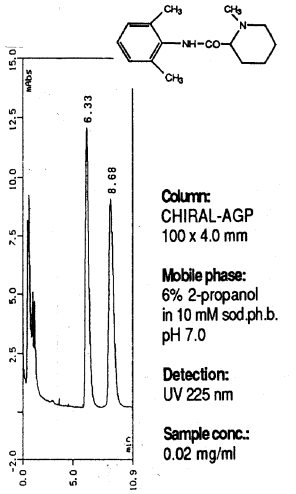
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 0.3% 1-propanol in 100 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Mepivacaine



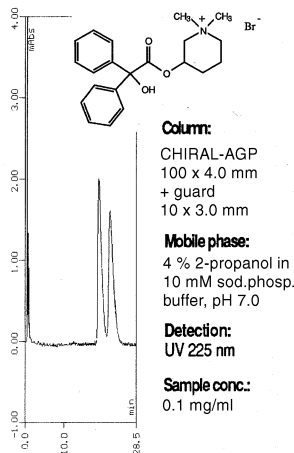
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 6% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Mepenzolate bromide



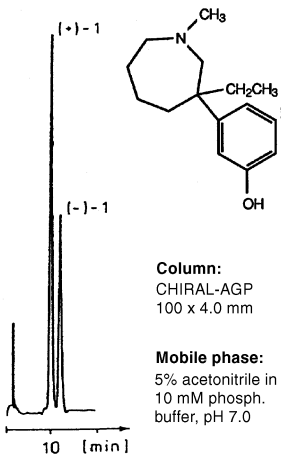
Column: CHIRAL-AGP 100 x 4.0 mm + guard 10 x 3.0 mm

Mobile phase: 4 % 2-propanol in 10 mM sod.phosp. buffer, pH 7.0

Detection: UV 225 nm

Sample conc.: 0.1 mg/ml

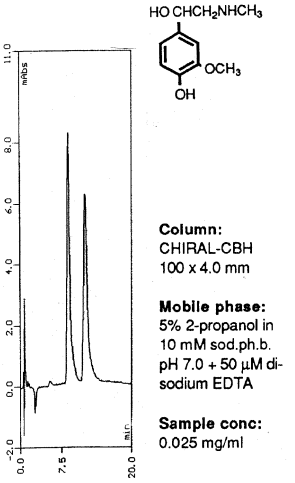
Meptazinol (Ref. 126)



Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 5% acetonitrile in 10 mM phosph. buffer, pH 7.0

Methanephrine

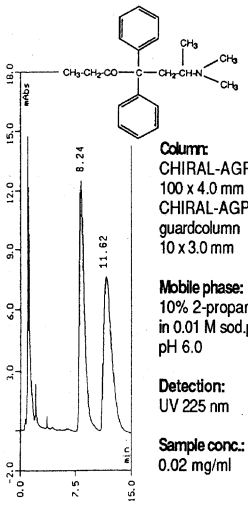


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ph.b. pH 7.0 + 50 µM disodium EDTA

Sample conc: 0.025 mg/ml

Methadone



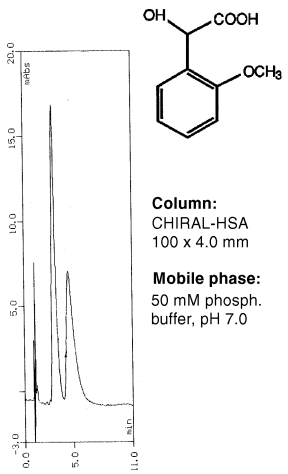
Column:
CHIRAL-AGP
100 x 4.0 mm and
CHIRAL-AGP
guardcolumn
10 x 3.0 mm

Mobile phase:
10% 2-propanol
in 0.01 M sod.ph.b.
pH 6.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

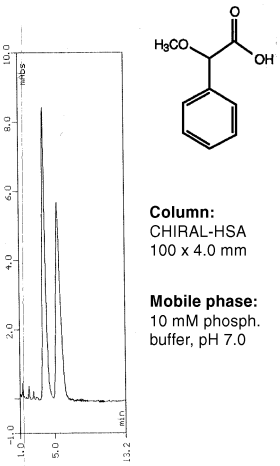
o-Methoxymandelic acid



Column:
CHIRAL-HSA
100 x 4.0 mm

Mobile phase:
50 mM phosph.
buffer, pH 7.0

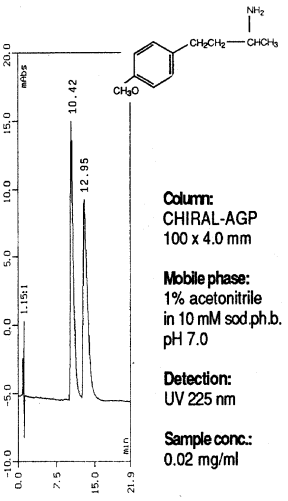
α-Methoxyphenylacetic acid



Column:
CHIRAL-HSA
100 x 4.0 mm

Mobile phase:
10 mM phosph.
buffer, pH 7.0

1-(p-Methoxyphenyl)-3-butylamine



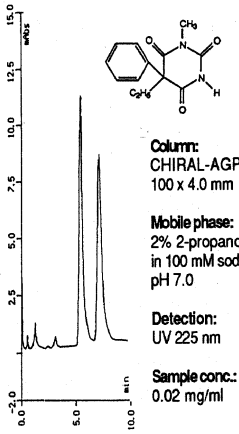
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% acetonitrile
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Methylphenobarbital



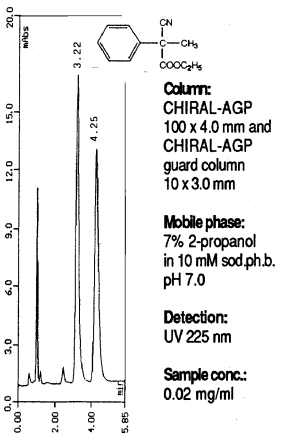
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
2% 2-propanol
in 100 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Methylphenylcyanoacetic acid ethyl ester



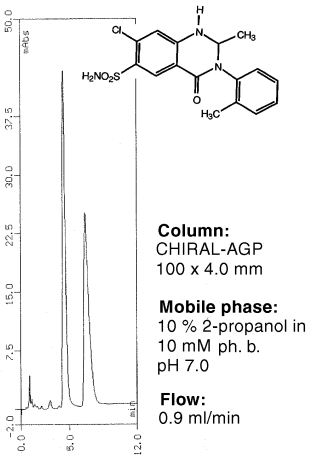
Column:
CHIRAL-AGP
100 x 4.0 mm and
CHIRAL-AGP
guard column
10 x 3.0 mm

Mobile phase:
7% 2-propanol
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Metolazone

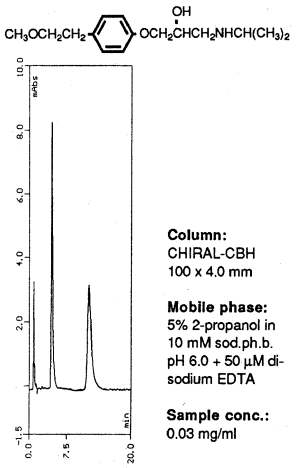


Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
10 % 2-propanol in
10 mM ph. b.
pH 7.0

Flow:
0.9 ml/min

Metoprolol

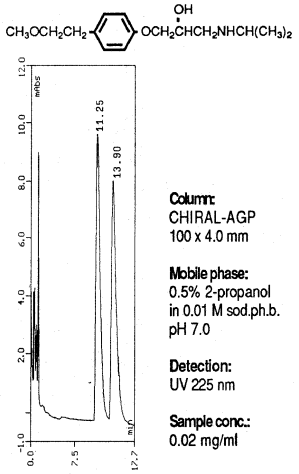


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.03 mg/ml

Metoprolol



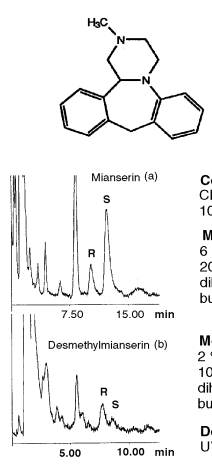
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
0.5% 2-propanol
in 0.01 M sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Mianserin (Ref. 130)
Analysis of mianserin and desmethylmianserin in plasma



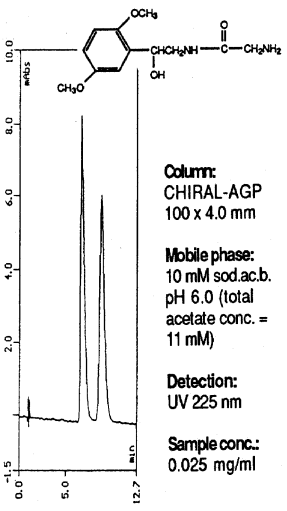
Column:
CHIRAL-AGP,
100 x 4.0 mm

Mobile phase (a):
6 % acetonitrile in
20 mM potassium
dihydrogen ph.
buffer, pH 5.30

Mobile phase (b):
2 % acetonitrile in
10 mM potassium
dihydrogen ph.
buffer, pH 4.70

Detection:
UV 214 nm

Midodrine



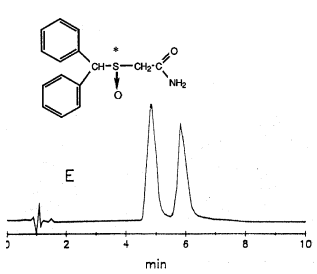
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
10 mM sod.ac.b.
pH 6.0 (total
acetate conc. =
11 mM)

Detection:
UV 225 nm

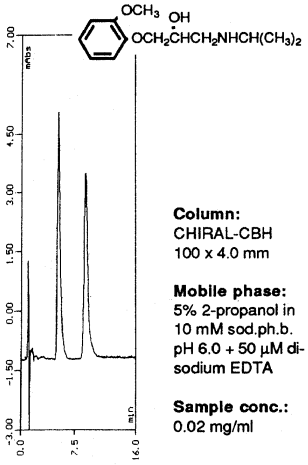
Sample conc.:
0.025 mg/ml

Modafinil (Ref. 75)



Column: CHIRAL-AGP 100 x 4.6 mm
Mobile phase: 0.1 % 1-pentanol in
100 mM ammonium acetate buffer
pH 6.75
Flow: 1.0 ml/min
Detection: UV 267 nm

Moprolol

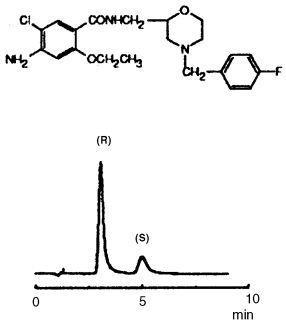


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.02 mg/ml

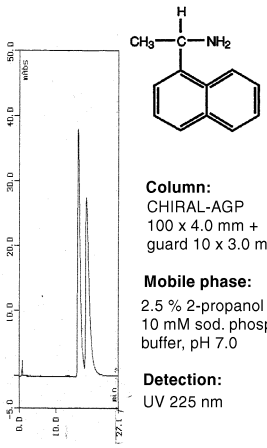
Mosapride (Ref. 134)



Column: CHIRAL-AGP

Mobile phase:
Acetate buffer, pH 4.0/
methanol (7:3)

1-(1-Naphthyl)-ethylamine

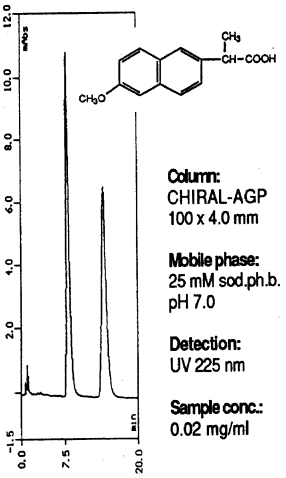


Column:
CHIRAL-AGP
100 x 4.0 mm +
guard 10 x 3.0 mm

Mobile phase:
2.5 % 2-propanol in
10 mM sod. phosph.
buffer, pH 7.0

Detection:
UV 225 nm

Naproxen



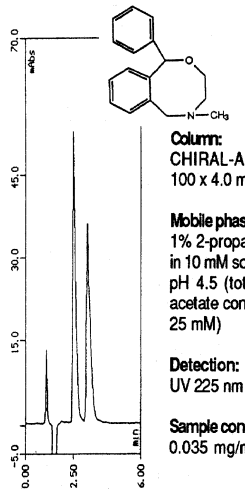
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
25 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Nefopam



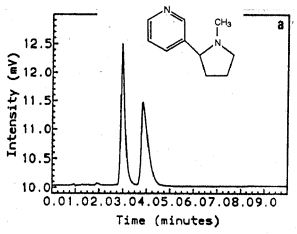
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% 2-propanol
in 10 mM sod.ac.b.
pH 4.5 (total
acetate conc. =
25 mM)

Detection:
UV 225 nm

Sample conc.:
0.035 mg/ml

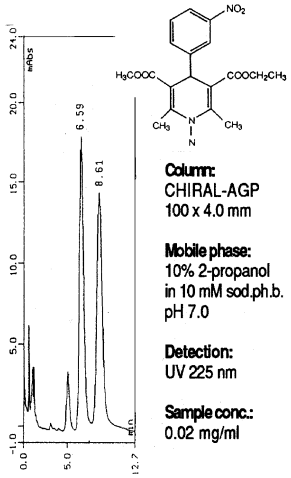
Nicotine (Ref. 93)



Column:
CHIRAL-AGP
100 x 4.0 mm

For conditions see reference no. 93

Nitrendipine



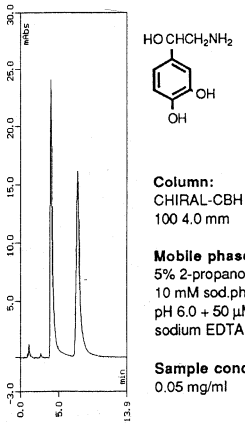
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
10% 2-propanol
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Norepinephrine

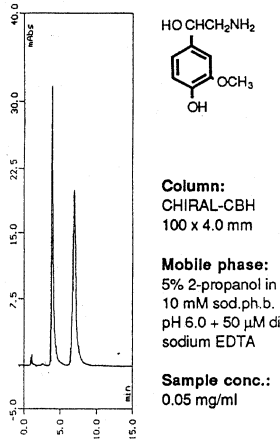


Column:
CHIRAL-CBH
100 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.05 mg/ml

Normethanephrine

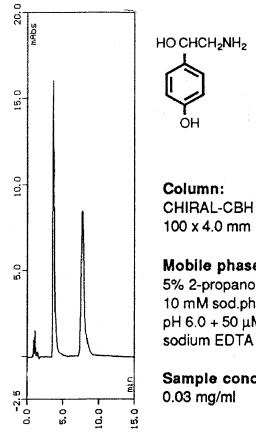


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.05 mg/ml

Octopamine

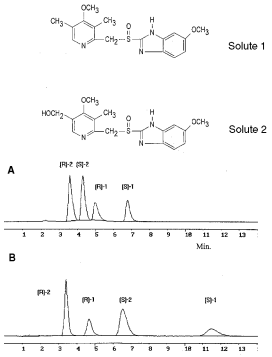


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.03 mg/ml

Omeprazole (Ref. 144)

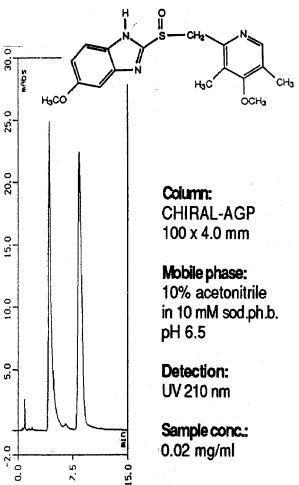


Column: CHIRAL-AGP 100 x 4.0 mm

A. Temp.: 45 °C, Mobile phase: ph.b., ph 6.3,
ionic strength=0.03 : acetonitrile (87.5:12.5)

B. Temp.:20 °C,Mobile phase: ph.b., pH 5.7,
ionic strength=0.01 : acetonitrile (90:10)

Omeprazole



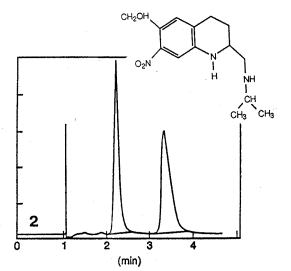
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
10% acetonitrile
in 10 mM sod.ph.b.
pH 6.5

Detection:
UV 210 nm

Sample conc.:
0.02 mg/ml

Oxamniquine (Ref. 34)



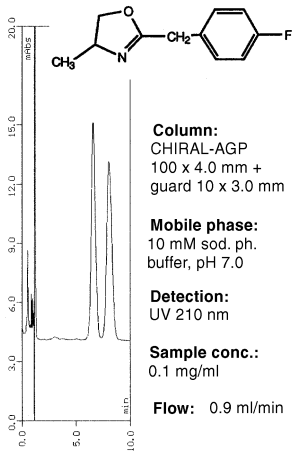
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 0.6% acetonitrile in 10 mM sod.ph.b. pH 5.2

Flow: 0.9 ml/min

Detection: UV 246 nm

Oxazoline



Column: CHIRAL-AGP 100 x 4.0 mm + guard 10 x 3.0 mm

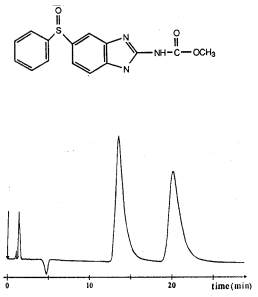
Mobile phase: 10 mM sod. ph. buffer, pH 7.0

Detection: UV 210 nm

Sample conc.: 0.1 mg/ml

Flow: 0.9 ml/min

Oxfendazole (Ref. 47)



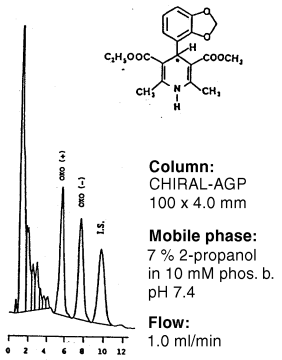
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 8 mM sod.ph.b pH 7.0

Flow: 0.9 ml/min

Detection: UV 220 nm

Oxodipine (Ref. 118)



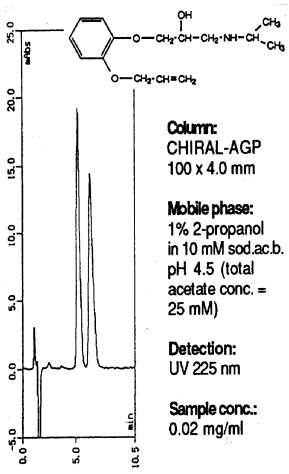
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 7 % 2-propanol in 10 mM phos. b. pH 7.4

Flow: 1.0 ml/min

Detection: UV 236 nm

Oxprenolol



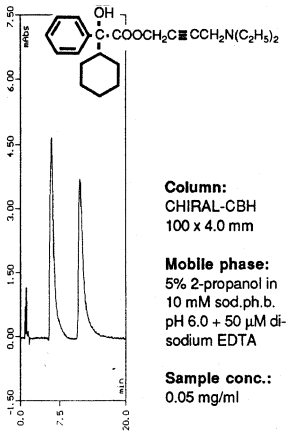
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1% 2-propanol in 10 mM sod.ac.b. pH 4.5 (total acetate conc. = 25 mM)

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Oxybutynin

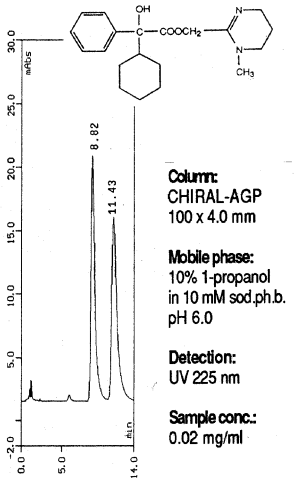


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ph.b. pH 6.0 + 50 µM di-sodium EDTA

Sample conc.: 0.05 mg/ml

Oxyphencyclimine



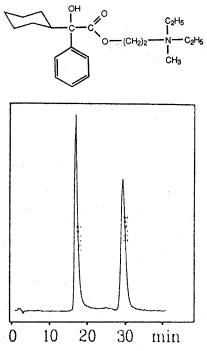
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10% 1-propanol in 10 mM sod.ph.b. pH 6.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

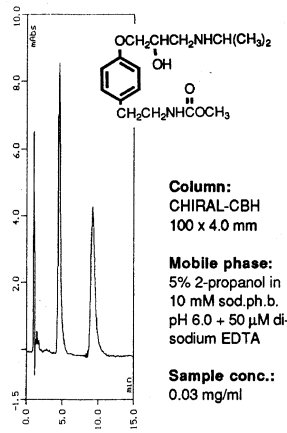
Oxyphenonium (Ref. 48)



Column: CHIRAL-AGP 100 x 4.0 mm

Conditions see reference no. 48

Pamatolol

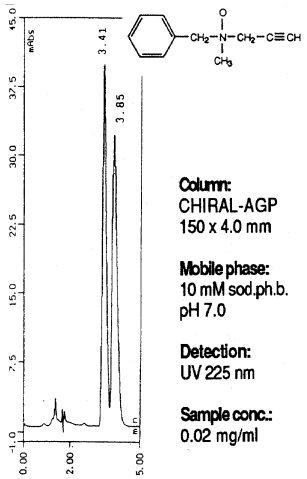


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ph.b. pH 6.0 + 50 µM di-sodium EDTA

Sample conc.: 0.03 mg/ml

Pargyline N-oxide



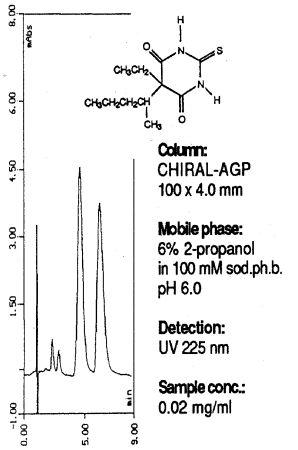
Column: CHIRAL-AGP 150 x 4.0 mm

Mobile phase: 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Penthiobarbital



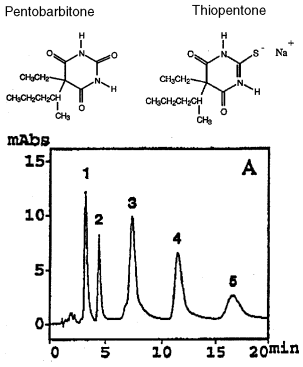
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 6% 2-propanol in 100 mM sod.ph.b. pH 6.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Pentobarbitone (Ref. 128)

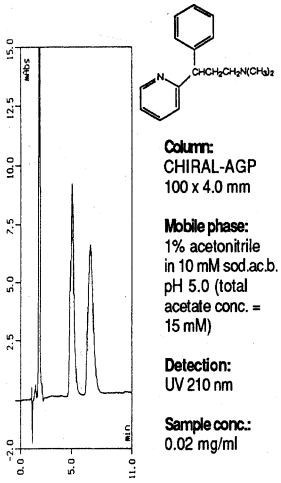


Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 4.5 % 2-propanol in 100 mM phosp. buffer, pH 6.2

1. R-pentobarbitone
2. S-pentobarbitone
3. R-thiopentone
4. S-thiopentone

Pheniramine



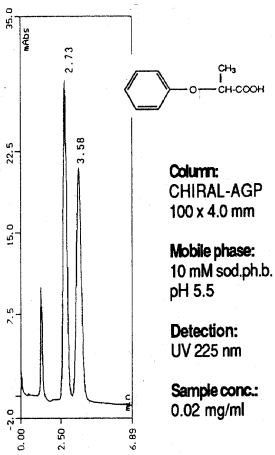
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% acetonitrile
in 10 mM sod.ac.b.
pH 5.0 (total
acetate conc. =
15 mM)

Detection:
UV 210 nm

Sample conc.:
0.02 mg/ml

2-Phenoxypropionic acid



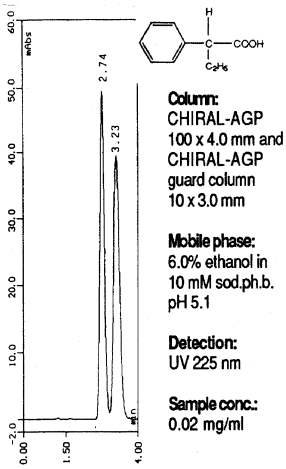
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
10 mM sod.ph.b.
pH 5.5

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

2-Phenylbutyric acid



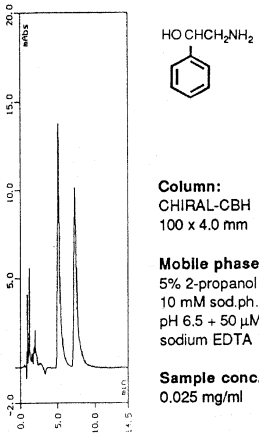
Column:
CHIRAL-AGP
100 x 4.0 mm and
CHIRAL-AGP
guard column
10 x 3.0 mm

Mobile phase:
6.0% ethanol in
10 mM sod.ph.b.
pH 5.1

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Phenylethanolamine

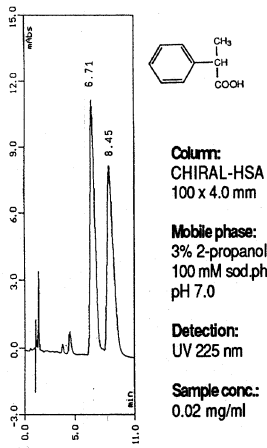


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.5 + 50 µM di-
sodium EDTA

Sample conc.:
0.025 mg/ml

2-Phenylpropionic acid (Hydratropic acid)



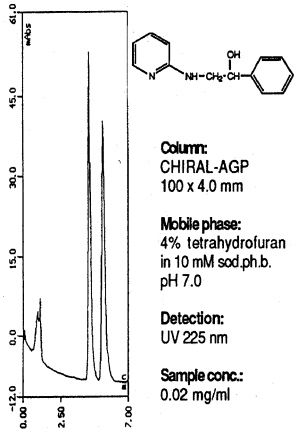
Column:
CHIRAL-HSA
100 x 4.0 mm

Mobile phase:
3% 2-propanol in
100 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Phenyramidol



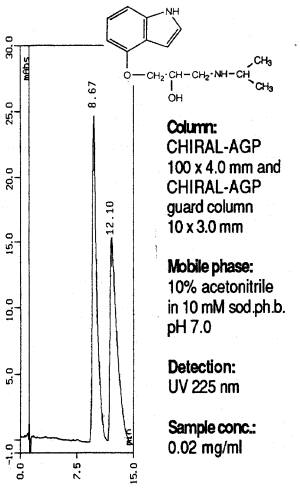
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
4% tetrahydrofuran
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Pindolol



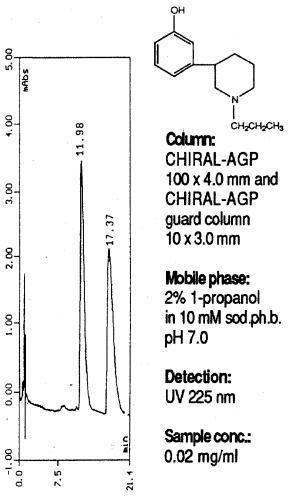
Column:
CHIRAL-AGP
100 x 4.0 mm and
CHIRAL-AGP
guard column
10 x 3.0 mm

Mobile phase:
10% acetonitrile
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

3-PPP



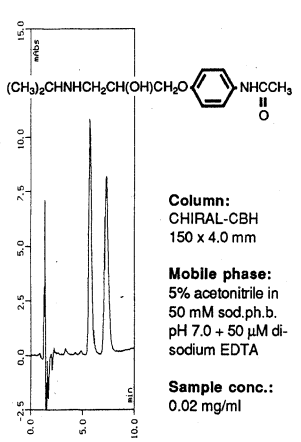
Column:
CHIRAL-AGP
100 x 4.0 mm and
CHIRAL-AGP
guard column
10 x 3.0 mm

Mobile phase:
2% 1-propanol
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Practolol

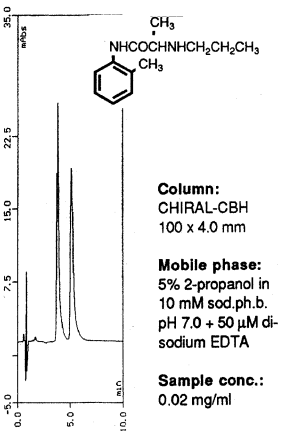


Column:
CHIRAL-CBH
150 x 4.0 mm

Mobile phase:
5% acetonitrile in
50 mM sod.ph.b.
pH 7.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.02 mg/ml

Prilocaine

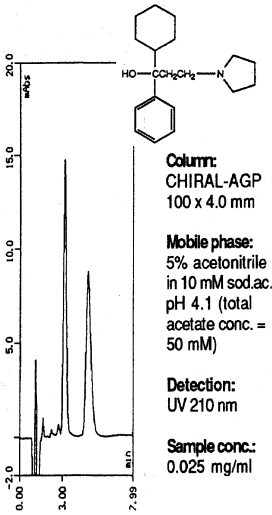


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 7.0 + 50 µM di-
sodium EDTA

Sample conc.:
0.02 mg/ml

Procyclidine



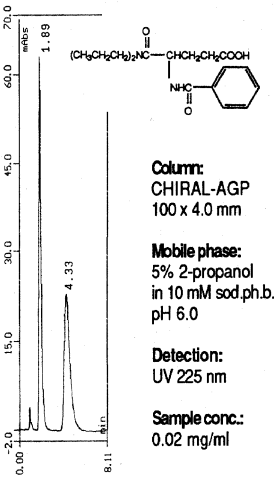
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
5% acetonitrile
in 10 mM sod.ac.b.
pH 4.1 (total
acetate conc. =
50 mM)

Detection:
UV 210 nm

Sample conc.:
0.025 mg/ml

Proglumide



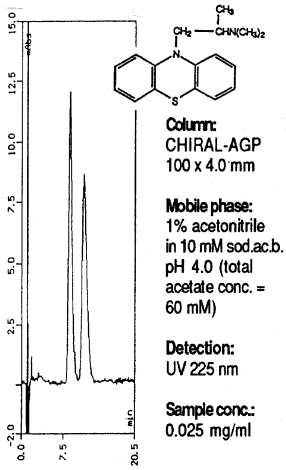
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
5% 2-propanol
in 10 mM sod.ph.b.
pH 6.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Promethazine



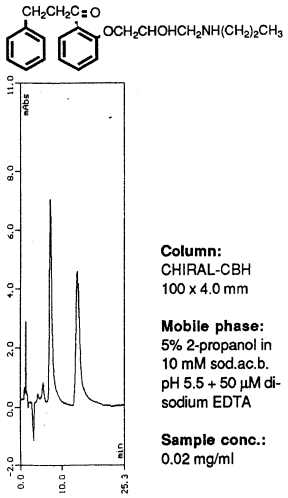
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% acetonitrile in 10 mM sod.ac.b. pH 4.0 (total acetate conc. = 60 mM)

Detection:
UV 225 nm

Sample conc.:
0.025 mg/ml

Propafenone

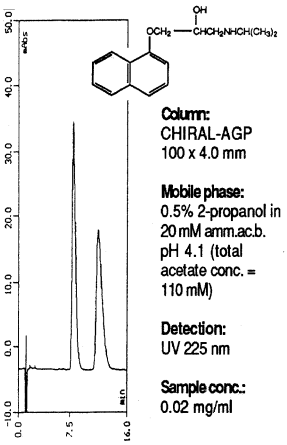


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in 10 mM sod.ac.b. pH 5.5 + 50 µM di-sodium EDTA

Sample conc.:
0.02 mg/ml

Propranolol



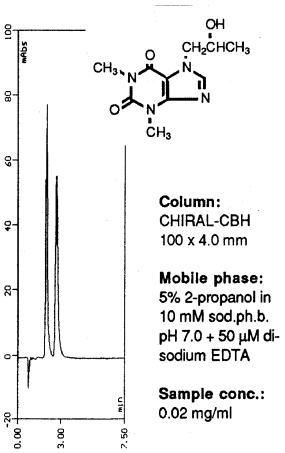
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
0.5% 2-propanol in 20 mM amm.ac.b. pH 4.1 (total acetate conc. = 110 mM)

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Proxyphylline

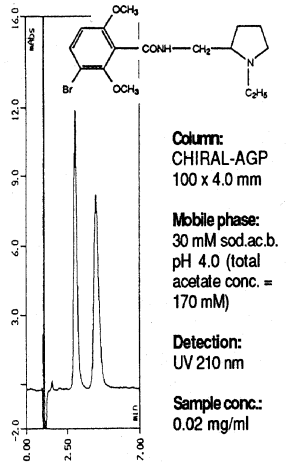


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in 10 mM sod.ph.b. pH 7.0 + 50 µM di-sodium EDTA

Sample conc.:
0.02 mg/ml

Remoxipride



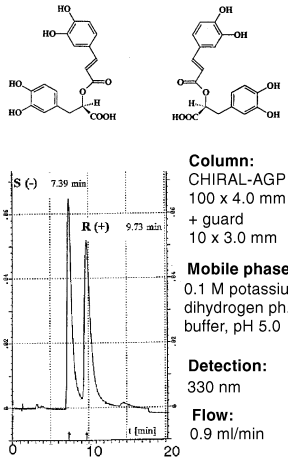
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
30 mM sod.ac.b. pH 4.0 (total acetate conc. = 170 mM)

Detection:
UV 210 nm

Sample conc.:
0.02 mg/ml

Rosmarinic acid (Ref. 135)



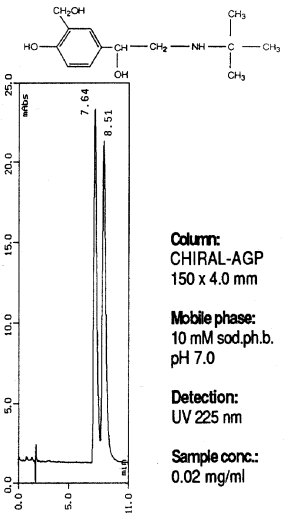
Column:
CHIRAL-AGP
100 x 4.0 mm
+ guard
10 x 3.0 mm

Mobile phase:
0.1 M potassium dihydrogen ph. buffer, pH 5.0

Detection:
330 nm

Flow:
0.9 ml/min

Salbutamol



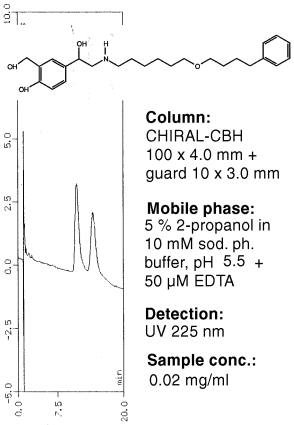
Column:
CHIRAL-AGP
150 x 4.0 mm

Mobile phase:
10 mM sod.ph.b. pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Salmeterol



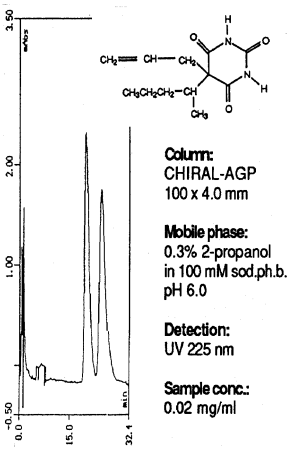
Column:
CHIRAL-CBH
100 x 4.0 mm + guard 10 x 3.0 mm

Mobile phase:
5 % 2-propanol in 10 mM sod. ph. buffer, pH 5.5 + 50 µM EDTA

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Secobarbital



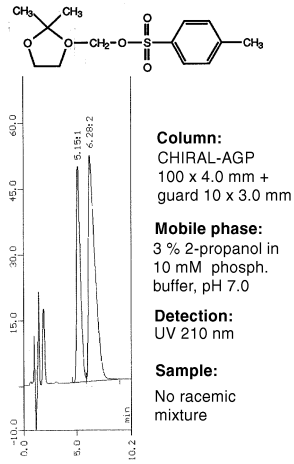
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
0.3% 2-propanol in 100 mM sod.ph.b. pH 6.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Solketal tosylate



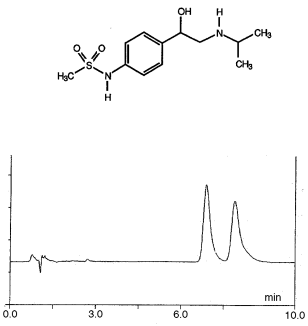
Column:
CHIRAL-AGP
100 x 4.0 mm + guard 10 x 3.0 mm

Mobile phase:
3 % 2-propanol in 10 mM phosph. buffer, pH 7.0

Detection:
UV 210 nm

Sample:
No racemic mixture

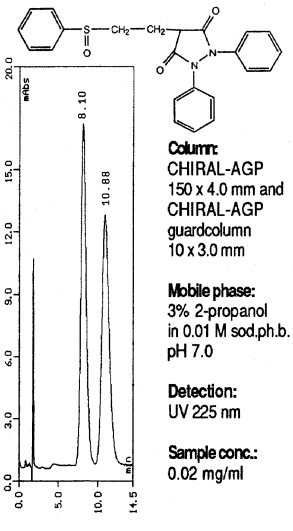
Sotalol



Column: CHIRAL-CBH 150 x 4.0 mm

Mobile phase: 10 % acetonitrile in 10 mM phosph. buffer pH7.0 + 50 µM EDTA

Sulfinpyrazon



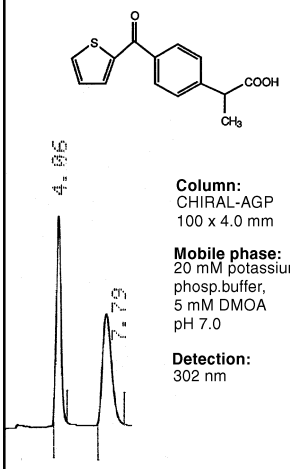
Column:
CHIRAL-AGP
150 x 4.0 mm and CHIRAL-AGP guardcolumn
10 x 3.0 mm

Mobile phase:
3% 2-propanol in 0.01 M sod.ph.b. pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Suprofen

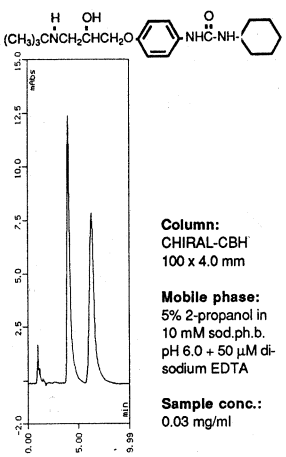


Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
20 mM potassium phosp.buffer,
5 mM DMOA
pH 7.0

Detection:
302 nm

Talinolol

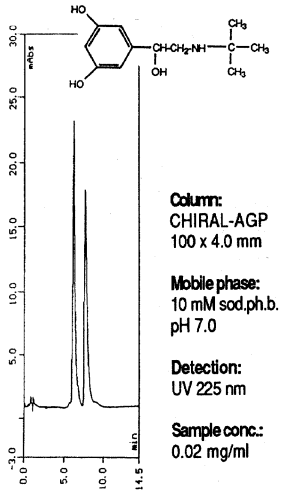


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-sodium EDTA

Sample conc.:
0.03 mg/ml

Terbutaline



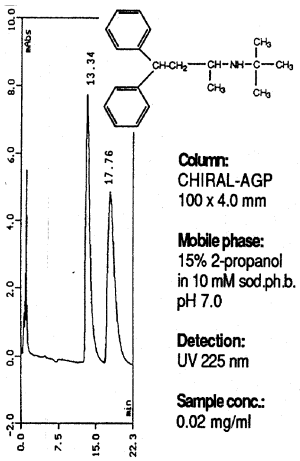
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Terodiline



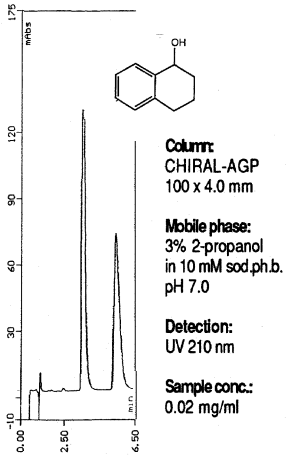
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
15% 2-propanol
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

1,2,3,4-tetrahydro-1-naphthol



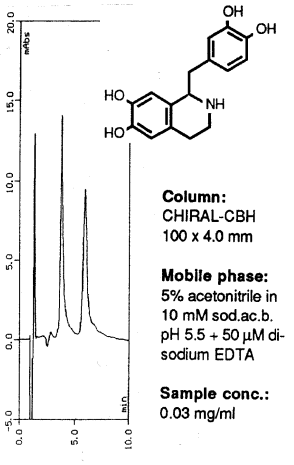
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
3% 2-propanol
in 10 mM sod.ph.b.
pH 7.0

Detection:
UV 210 nm

Sample conc.:
0.02 mg/ml

Tetrahydropapaveroline

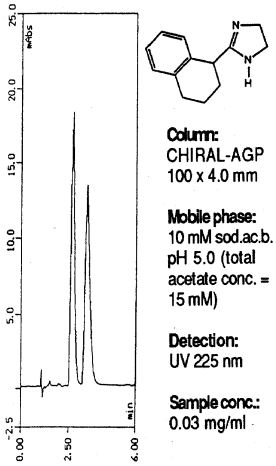


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% acetonitrile in
10 mM sod.ac.b.
pH 5.5 + 50 µM di-sodium EDTA

Sample conc.:
0.03 mg/ml

Tetrahydrozoline



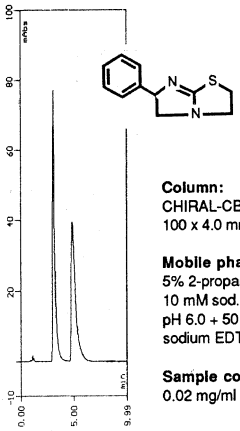
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
10 mM sod.ac.b.
pH 5.0 (total acetate conc. = 15 mM)

Detection:
UV 225 nm

Sample conc.:
0.03 mg/ml

Tetramisole

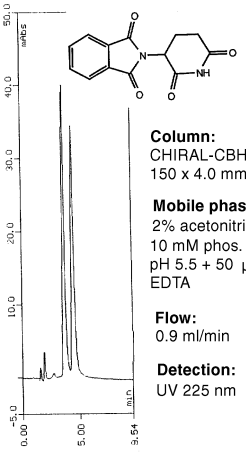


Column:
CHIRAL-CBH
100 x 4.0 mm

Mobile phase:
5% 2-propanol in
10 mM sod.ph.b.
pH 6.0 + 50 µM di-sodium EDTA

Sample conc.:
0.02 mg/ml

Thalidomide



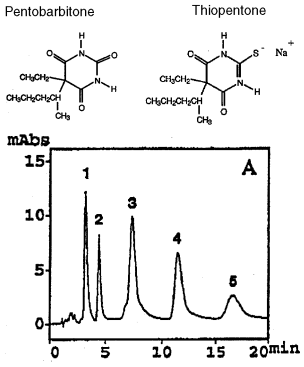
Column:
CHIRAL-CBH
150 x 4.0 mm

Mobile phase:
2% acetonitrile in
10 mM phos. buffer,
pH 5.5 + 50 µM EDTA

Flow:
0.9 ml/min

Detection:
UV 225 nm

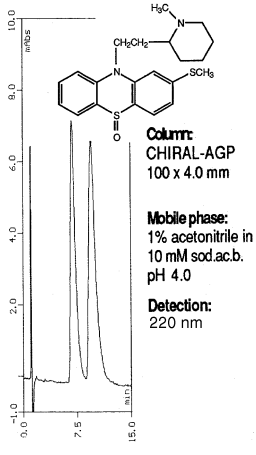
Thiopentone (Ref. 128)



Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 4.5 % 2-propanol in 100 mM phosp. buffer, pH 6.2

1. R-pentobarbitone
2. S-pentobarbitone
3. R-thiopentone
4. S-thiopentone

Thioridazine sulfoxide

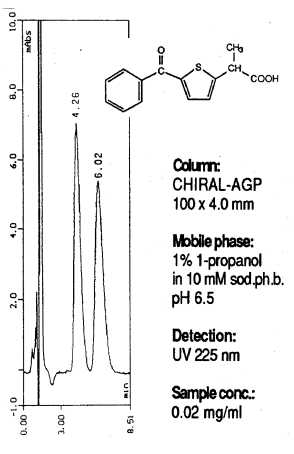


Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% acetonitrile in
10 mM sod.ac.b.
pH 4.0

Detection:
220 nm

Tiaprofenic acid



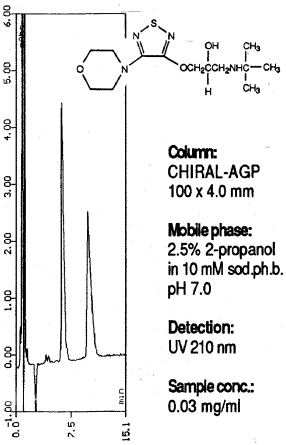
Column:
CHIRAL-AGP
100 x 4.0 mm

Mobile phase:
1% 1-propanol
in 10 mM sod.ph.b.
pH 6.5

Detection:
UV 225 nm

Sample conc.:
0.02 mg/ml

Timolol



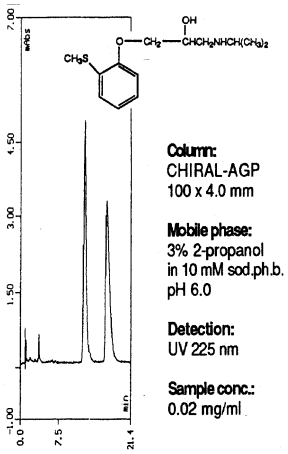
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 2.5% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 210 nm

Sample conc.: 0.03 mg/ml

Tiprenolol



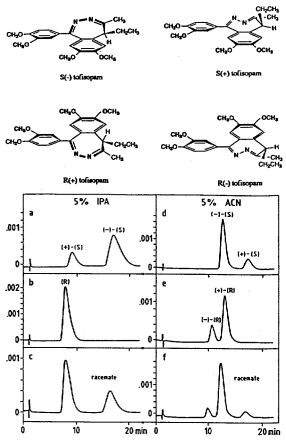
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 3% 2-propanol in 10 mM sod.ph.b. pH 6.0

Detection: UV 225 nm

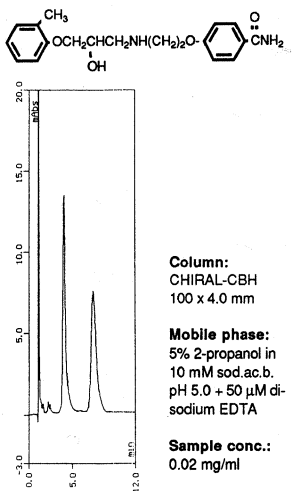
Sample conc.: 0.02 mg/ml

Tofisopam (Ref. 125)



Column: CHIRAL-AGP 100 x 4.0 mm
Mobile phase: 10 mM phosp. b., pH 7.0 with 5% IPA (a,b,c) and 5% ACN (d,e,f)
Detection: UV 220 nm

Tolamolol

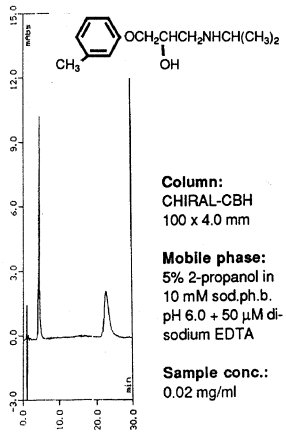


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ac.b. pH 5.0 + 50 µM di-sodium EDTA

Sample conc.: 0.02 mg/ml

Toliprolol

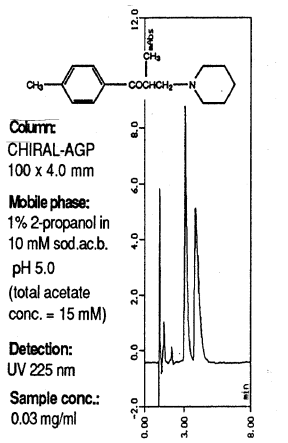


Column: CHIRAL-CBH 100 x 4.0 mm

Mobile phase: 5% 2-propanol in 10 mM sod.ph.b. pH 6.0 + 50 µM di-sodium EDTA

Sample conc.: 0.02 mg/ml

Tolperisone



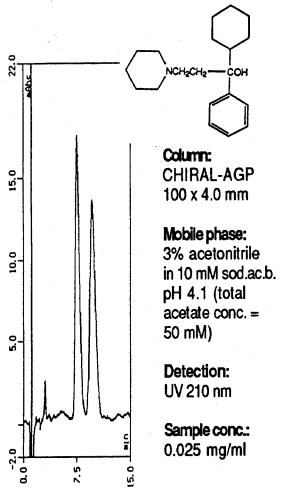
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1% 2-propanol in 10 mM sod.ac.b. pH 5.0 (total acetate conc. = 15 mM)

Detection: UV 225 nm

Sample conc.: 0.03 mg/ml

Trihexyphenidyl



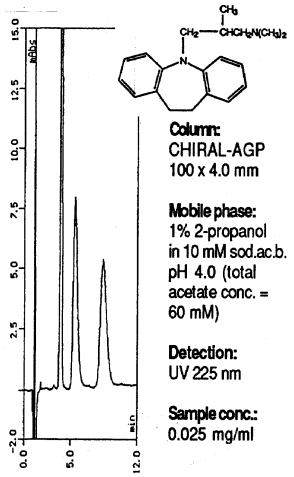
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 3% acetonitrile in 10 mM sod.ac.b. pH 4.1 (total acetate conc. = 50 mM)

Detection: UV 210 nm

Sample conc.: 0.025 mg/ml

Trimipramine



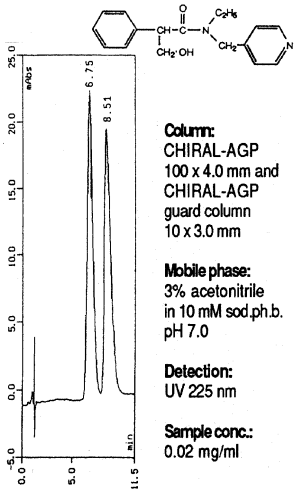
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1% 2-propanol in 10 mM sod.ac.b. pH 4.0 (total acetate conc. = 60 mM)

Detection: UV 225 nm

Sample conc.: 0.025 mg/ml

Tropicamide



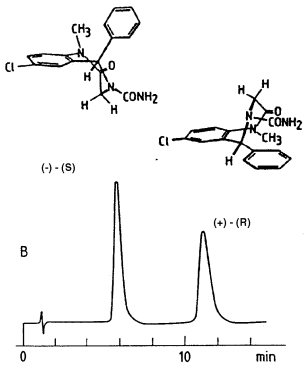
Column: CHIRAL-AGP 100 x 4.0 mm and CHIRAL-AGP guard column 10 x 3.0 mm

Mobile phase: 3% acetonitrile in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

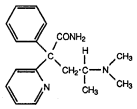
Uxepam (Ref. 125)



Column: CHIRAL-AGP 100 x 4.0 mm + guard 10 x 3.0 mm

Mobile phase: 10% acetonitrile in 10 mM phosph. buffer, pH 7.0

Vamicamide (Ref. 104)



Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 0.02 M sod.ph. b. pH 6.3/ acetonitrile (20 : 1)

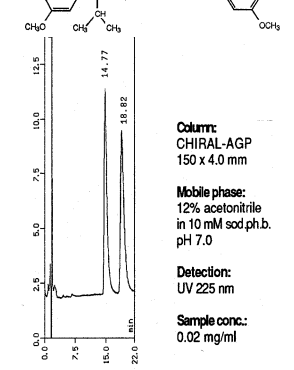
Flow: 0.9 ml/min

Retention time: S,S Vamicamide, t_r = 5.9 min R,R-Vamicamide, t_r = 8.34 min

Resolution (R_s) = 2.7

Detection: UV 260 nm

Verapamil



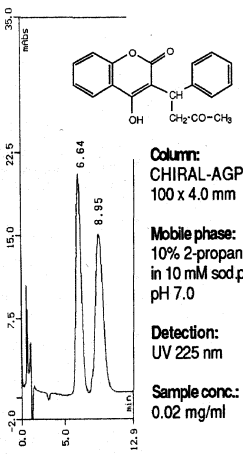
Column: CHIRAL-AGP 150 x 4.0 mm

Mobile phase: 12% acetonitrile in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Warfarin



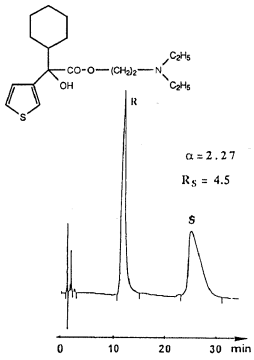
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10% 2-propanol in 10 mM sod.ph.b. pH 7.0

Detection: UV 225 nm

Sample conc.: 0.02 mg/ml

Reference 19



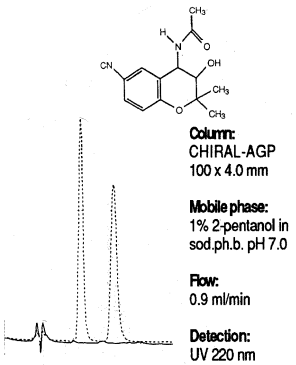
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10% 2-propanol in 8 mM sod.ph.b. pH 7.0

Flow: 0.9 ml/min

Detection: UV 230 nm

Reference 83



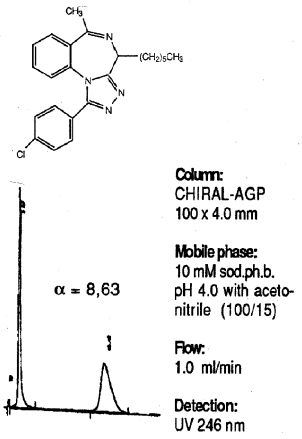
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 1% 2-pentanol in sod.ph.b. pH 7.0

Flow: 0.9 ml/min

Detection: UV 220 nm

Reference 97



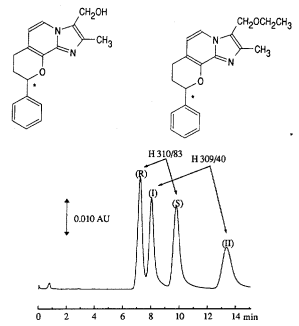
Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10 mM sod.ph.b. pH 4.0 with aceto-nitrile (100/15)

Flow: 1.0 ml/min

Detection: UV 246 nm

H 310/83 and H 309/40 (Ref. 147)



Column: CHIRAL-AGP 100 x 4.0 mm

Mobile phase: 10 % acetonitrile in phosphate buffer, ionic strength I=0.01, pH 7.5

Temp.: 40 °C

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Chiral Column Ordering Guide

Chiral-AGP

Cat.No.	Description
CT-20054	Chiral-AGP, 4.0 x 50mm, 5µm
CT-20104	Chiral-AGP, 4.0 x 100mm, 5µm
CT-20154	Chiral-AGP, 4.0 x 150mm, 5µm
CT-20103	Chiral-AGP, 3.0 x 100mm, 5µm
CT-20153	Chiral-AGP, 3.0 x 150mm, 5µm
CT-20052	Chiral-AGP, 2.0 x 50mm, 5µm
CT-20102	Chiral-AGP, 2.0 x 100mm, 5µm
CT-20152	Chiral-AGP, 2.0 x 150mm, 5µm
CT-201010	Chiral-AGP, 10.0 x 100mm, 5µm
CT-201510	Chiral-AGP, 10.0 x 150mm, 5µm
CT-200122	Chiral-AGP, 2.0 x 10mm, Guard cart, 2/pk
CT-200132	Chiral-AGP, 3.0 x 10mm, Guard cart, 2/pk

Chiral-CBH

CT-25054	Chiral-CBH, 4.0 x 50mm, 5µm
CT-25104	Chiral-CBH, 4.0 x 100mm, 5µm
CT-25154	Chiral-CBH, 4.0 x 150mm, 5µm
CT-25103	Chiral-CBH, 3.0 x 100mm, 5µm
CT-25153	Chiral-CBH, 3.0 x 150mm, 5µm
CT-25052	Chiral-CBH, 2.0 x 50mm, 5µm
CT-25102	Chiral-CBH, 2.0 x 100mm, 5µm
CT-25152	Chiral-CBH, 2.0 x 150mm, 5µm
CT-251010	Chiral-CBH, 10.0 x 100mm, 5µm
CT-251510	Chiral-CBH, 10.0 x 150mm, 5µm
CT-250122	Chiral-CBH, 2.0 x 10mm, Guard cart, 2/pk
CT-250132	Chiral-CBH, 3.0 x 10mm, Guard cart, 2/pk

Chiral-HSA

CT-29054	Chiral-HSA, 4.0 x 50mm, 5µm
CT-29104	Chiral-HSA, 4.0 x 100mm, 5µm
CT-29154	Chiral-HSA, 4.0 x 150mm, 5µm
CT-29103	Chiral-HSA, 3.0 x 100mm, 5µm
CT-29153	Chiral-HSA, 3.0 x 150mm, 5µm
CT-29052	Chiral-HSA, 2.0 x 50mm, 5µm
CT-29102	Chiral-HSA, 2.0 x 100mm, 5µm
CT-29152	Chiral-HSA, 2.0 x 150mm, 5µm
CT-291010	Chiral-HSA, 10.0 x 100mm, 5µm
CT-291510	Chiral-HSA, 10.0 x 150mm, 5µm
CT-290122	Chiral-HSA, 2.0 x 10mm, Guard cart, 2/pk
CT-290132	Chiral-HSA, 3.0 x 10mm, Guard cart, 2/pk

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