

# SUMICHIRAL OA™ CHIRAL COLUMNS

by Sumika Chemical Analysis Service, Ltd.

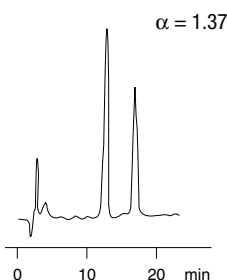
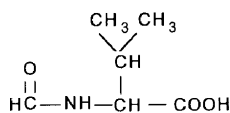
- High chromatographic efficiency
- Rapid recovery from overload
- Reverse elution order by using "opposite-handed" chiral phase
- Wide range of applications in both normal and reversed phase
- Crown Ether column available
- 3 Different types of chiral packings

Sumichiral OA™ columns, include Pirkle-type, cavity type (cyclodextrin and crown ether), as well as ligand-exchange-type columns for the separation of enantiomers by HPLC. A wide diversity of optically active compounds of biological importance can be resolved directly with these columns, including many pharmaceuticals, biochemicals and pesticides. A variety of chiral selectors bonded to 5 μm silica gives you a choice of selectivity for virtually all your chiral applications. If you have an interest in any Sumichiral OA™ column not listed here, please call one of our technical representatives for more information.

App ID 5616

## N-Formylvaline

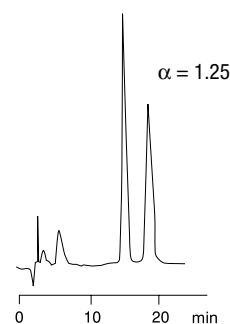
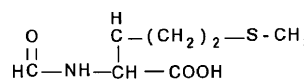
**Column:** OA-5000  
**Dimensions:** 150 x 4.6 mm  
**Part No.:** CHO-1859  
**Mobile Phase:** 1 mM copper(II) sulfate in water/acetonitrile (85:15)  
**Flow Rate:** 1.0 mL/min  
**Detector:** UV @ 254 nm



App ID 5617

## N-Formylmethionine

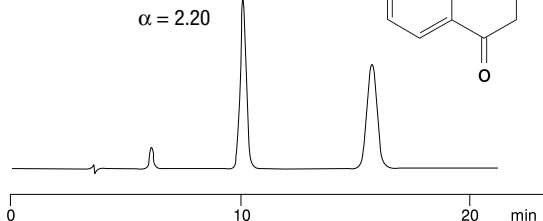
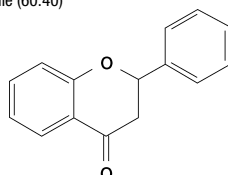
**Column:** OA-5000  
**Dimensions:** 150 x 4.6 mm  
**Part No.:** CHO-1859  
**Mobile Phase:** 2 mM copper(II) sulfate in water/acetonitrile (85:15)  
**Flow Rate:** 1.0 mL/min  
**Detector:** UV @ 254 nm



App ID 14564

## Flavanone

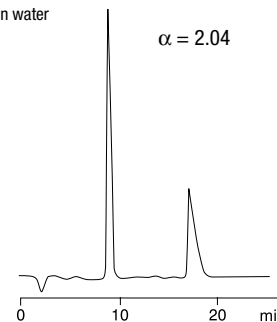
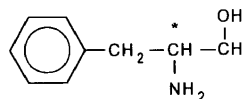
**Column:** OA-7000  
**Dimensions:** 250 x 4.6 mm  
**Part No.:** CHO-5649  
**Mobile Phase:** 20 mM KH<sub>2</sub>PO<sub>4</sub> (pH 2.0)/Acetonitrile (60:40)  
**Flow Rate:** 0.85 mL/min  
**Detector:** UV @ 254 nm



App ID 5619

## Phenylalaninol

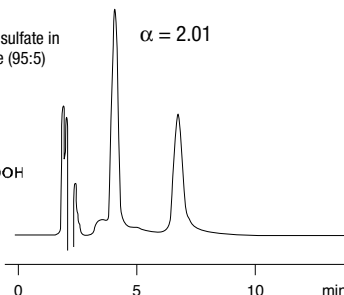
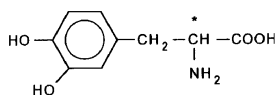
**Column:** OA-5500  
**Dimensions:** 150 x 4.6 mm  
**Part No.:** CHO-1861  
**Mobile Phase:** 1 mM copper(II) sulfate in water  
**Flow Rate:** 1.0 mL/min  
**Detector:** UV @ 254 nm



App ID 5620

## DOPA

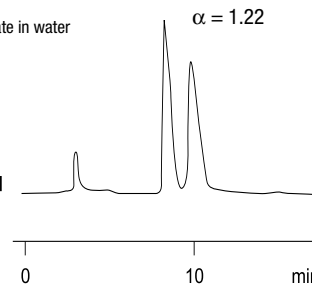
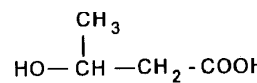
**Column:** OA-6100  
**Dimensions:** 150 x 4.6 mm  
**Part No.:** CHO-1863  
**Mobile Phase:** 2 mM copper(II) sulfate in water/acetonitrile (95:5)  
**Flow Rate:** 1.0 mL/min  
**Detector:** UV @ 280 nm



App ID 5621

## 3-Hydroxybutyric Acid

**Column:** OA-6100  
**Dimensions:** 150 x 4.6 mm  
**Part No.:** CHO-1863  
**Mobile Phase:** 1 mM copper(II) sulfate in water  
**Flow Rate:** 1.0 mL/min  
**Detector:** UV @ 254 nm



See p. 108 for additional Chiral stationary phases.

# SUMICHIRAL OA™ CHIRAL COLUMNS

by Sumika Chemical Analysis Service, Ltd.

## Sumichiral Applications

### OA-5000 Phase, (D)-penicillamine

Compound	Alpha ( $\alpha$ )
N-Acetylalanine	1.17
N-Acetylleucine	1.39
N-Acetylmethionine	1.27
N-Acetylvaline	1.50
Alanine	1.66
Alloisoleucine	1.67
Allothreonine	1.19
1-Aminoethylphosphonic acid	1.30
2-Amino-4-phosphonobutyric acid	1.31
2-Amino-n-butyric acid	1.80
Arginine	2.15
Asparagine	1.12
Aspartic acid	1.42
Baclofen	1.23
p-Boronophenylalanine	1.36
2-Bromopropionic acid	1.05
Cystine	2.47
2,6-Diaminopimelic acid	2.77
3,4-Dihydro-2H-pyran-2-carboxylic acid	1.09
1,2-Diphenylethylenediamine	1.09
N-Formylmethionine	1.25
Glutamic acid	1.11
Glutamine	1.71
Histidine	1.32
2-Hydroxybutyric acid	1.51
Isoleucine	1.70
Lactic acid	1.33
Leucine	1.56
Lysine	1.83
Mandelic acid	1.24
Methionine	1.42
Naphthylglycine	1.42
Norphenylephrine	1.27
Norvaline	1.95
Ornithine	1.38
Pantoic acid	1.63
Phenylalanine	1.44
Phenylglycine	1.78
3-Phenyllactic acid	1.26
DL-threo-3-Phenylserine	1.15
Pipecolic acid	1.82
Proline	2.50
Serine	1.17
Synephrine	1.19
Tetrahydro-2-furancarboxylic acid	1.06
Tetrahydro-3-furancarboxylic acid	1.05
Threonine	1.20
Tryptophan	1.11
Tyrosine	1.34
Valine	1.91
trans-1,2-Diaminocyclohexane	1.10
3-(3,4-dihydroxyphenyl)-alanine (DOPA)	1.22

### OA-5500 Phase, chiral Schiff base

Compound	Alpha ( $\alpha$ )
Alloisoleucine	1.20
Allothreonine	1.72
8-Aminobutyric acid	1.20
1-Aminoethylphosphonic acid	1.50
2-Amino-4-phosphonobutyric acid	1.86
3-Amino-e-caprolactum	1.91
3-Amino-2-methylpropionic acid	1.08
2-Amino-1-phenylethanol	1.19
Aspartic acid	1.11
Atenolol	1.07
1,2-Diphenylethylamine	1.64
erythro-2-Amino-1,2-diphenylethanol	1.13
Glyceric acid	1.13
Histidine	1.18
Homocysteine thiolactone	1.19
2-Hydroxybutyric acid	2.19
3-Hydroxybutyric acid	1.16
p-Hydroxynorephedrine	1.13
Isoleucine	1.15
Ketamine	1.26
Lactic acid	1.56
Leucine	1.09
tert-Leucine	1.32
Methionine	1.30
Norephedrine	1.11
Normetanephrine	1.15
Norphenylephrine	1.23
Octopamine	1.30
Phenylalanine	1.74
Phenylalaninol	2.04
Phenylglycine	1.24
Phenylglycinol	1.35
1-Phenyl-2-(p-toyl)ethylamine	1.62
Pipecolic acid	1.80
Proline	1.22
Pyroglutamic acid	1.32
2-Pyrrolidone-5-carboxylic acid	1.32
Serine	1.19
Tryptophan	2.05
Tyrosine	2.06
Valine	1.29

### OA-6100 Phase, (L)-tartaric acid-mono-(L)-valine-(S)-1( $\alpha$ -naphthyl) ethylamide

Compound	Alpha ( $\alpha$ )
Alanine	2.09
3-Amino-n-butyric acid	1.27
3-Aminopyrrolidine	1.74
Arginine	4.49
Asparagine	1.54
Aspartic acid	1.00
3,4-Dihydro-2H-pyran-2-carboxylic acid	1.18
DOPA	2.01
Glutamic acid	1.00
Glutamine	2.45
Glyceric Acid	1.10
Histidine	1.48
2-Hydroxy-n-butyric acid	2.17
3-Hydroxy-n-butyric acid	1.22
p-Hydroxynorephedrine	1.29
Lactic acid	1.84
Leucine	2.19
Lysine	3.89
Mandelic acid	2.40
Methionine	4.01
Normetanephrine	1.14
Norphenylephrine	1.14
Octopamine	1.38
Ornithine	2.11
Phenylalanine	2.58
Proline	1.56
Serine	1.78
Tetrahydro-2-furancarboxylic acid	1.28
Threonine	1.97
Tryptophan	1.33
Tyrosine	1.62
Valine	4.37

### OA-7000 Phase, $\beta$ -cyclodextrin

Compound	Alpha ( $\alpha$ )
Chlorthalidone	1.46
Cyclopentolate	1.32
Flavanone	2.22
Naproxen	1.35

### OA-8000 Phase, Chiral Pseudo 18-Crown-6-Ether

Compound	Alpha ( $\alpha$ )
Alanine- $\beta$ -naphthylamide	1.31
DOPA, 3-(3,4-dihydroxyphenyl)-DL-alanine	1.58
1-(1-Naphthyl)-Ethylamine	1.45
Phenylpropanolamine	1.57

Alpha ( $\alpha$ ) = Separation factor =  $k_2/k_1$



See p. 108 for additional  
Chiral stationary phases.

# SUMICHIRAL OA™ CHIRAL COLUMNS

by Sumika Chemical Analysis Service, Ltd.

## ORDERING INFORMATION

Sumichiral OA Chiral Columns (mm)							
Phases	Description	Type	250 x 4.0	250 x 4.6	250 x 10	250 x 20	
OA-2000	(R)-phenylglycine and 3,5-dinitrobenzoic acid	Covalent	CHO-1751	CHO-1752	CHO-1754	CHO-1755	
OA-2000-l	(R)-phenylglycine and 3,5-dinitrobenzoic acid	Ionic	—	CHO-1758	CHO-1760	CHO-1761	
OA-3100	(S)-valine and 3,5-dinitroaniline	Covalent	—	CHO-1770	CHO-1772	CHO-1773	
OA-3200	(S)-tert-leucine and 3,5-dinitroaniline	Covalent	CHO-1775	CHO-1776	—	—	
OA-3300	(R)-phenylglycine and 3,5-dinitroaniline	Covalent	CHO-1781	CHO-1782	CHO-1784	CHO-1785	
OA-4000	(S)-valine and (S)-1-( $\alpha$ -naphthyl)-ethylamine	Covalent	CHO-1787	CHO-1788	—	—	
OA-4100	(S)-valine and (R)-1-( $\alpha$ -naphthyl)-ethylamine	Covalent	—	CHO-1794	CHO-1796	CHO-1797	
OA-4400	(S)-proline and (S)-1-( $\alpha$ -naphthyl)-ethylamine	Covalent	—	CHO-1800	—	—	
OA-4500	(S)-proline and (R)-1-( $\alpha$ -naphthyl)-ethylamine	Covalent	—	CHO-1806	CHO-1808	CHO-1809	
OA-4600	(S)-tert-leucine and (S)-1-( $\alpha$ -naphthyl)-ethylamine	Covalent	—	CHO-1812	—	—	
OA-4700	(S)-tert-leucine and (R)-1-( $\alpha$ -naphthyl)-ethylamine	Covalent	—	CHO-1818	CHO-1820	CHO-1821	
OA-4800	(S)-indoline-2-carboxylic acid and (S)-1-( $\alpha$ -naphthyl)ethylamine	Covalent	CHO-1823	CHO-1824	—	—	
OA-4900	(S)-indoline-2-carboxylic acid and (R)-1-( $\alpha$ -naphthyl)ethylamine	Covalent	—	CHO-1830	CHO-1832	CHO-1833	
			<b>250 x 4.0</b>	<b>250 x 4.6</b>	<b>250 x 10</b>	<b>250 x 20</b>	
OA-2500	(R)-1-naphthylglycine and 3,5-dinitrobenzoic acid	Covalent	CHO-1835	CHO-1836	CHO-1838	CHO-1839	
OA-2500-l	(R)-1-naphthylglycine and 3,5-dinitrobenzoic acid	Ionic	—	CHO-1848	CHO-1850	CHO-1851	
			<b>150 x 4.6</b>	<b>250 x 4.6</b>			
OA-5000	(D)-penicillamine	Ligand Exchange	CHO-1859	—	—	—	
OA-5500	chiral Schiff base	Ligand Exchange	CHO-1861	—	—	—	
OA-6100	(L)-tartaric acid-mono-(L)-valine-(S)-1-( $\alpha$ -naphthyl)ethylamide	Ligand Exchange	CHO-1863	—	—	—	
OA-7000	$\beta$ -Cyclodextrin (derivatized)	Cavity	—	CHO-5649	—	—	
			<b>150 x 4.6</b>				
OA-8000	Crown ether	Cavity	CHO-7050	—	—	—	

HPLC

Sumichiral OA



See p. 88 for Chiral Column Performance Check Standards.



See p. 108 for additional Chiral stationary phases.



See p. 345 for HPLC Chiller/Heater System (8-70°C).