

AXIFLOW HPLC COLUMNS

The AXIFLOW HPLC columns are offered with the C18, C8 and silica chemistries and a wide range of particle sizes, dimensions, pore sizes, pH stability to cater to a great number of analytes.

- The C18 or RP18 or ODS (USP L1) columns are used for retention and selectivity of a number of non-polar compounds.
- The C8 or RP8 or octylsilane (USP L7) columns are used for retention and selectivity of a number of non-polar compounds (but relatively polar to the compounds normally used in C18 columns) to expedite the separation.
- The silica (USPL3) columns are used for retention and selectivity of a number of polar compounds.

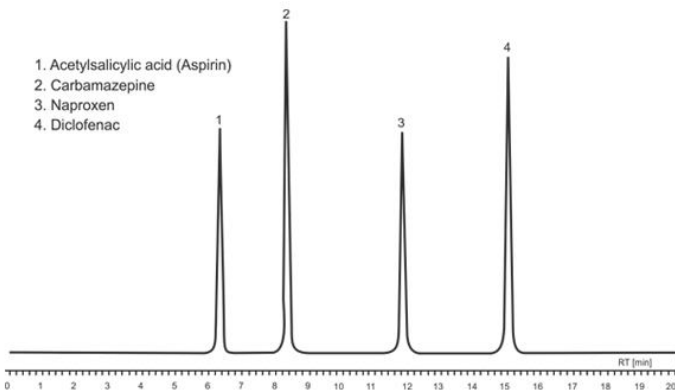
The **AXIFLOW high-performance liquid chromatography column** solutions can help research in the following sectors (including but not limited to):

- Pharmaceuticals (Pharma)
- Contract research and manufacturing services (CRAMS)
- Environmental and food safety (EFS)
- Academic researches (universities and colleges)
- Extractables & leachables (E&L)
- Biopharma and biotech
- Clinical research organizations (CROs)
- Agricultural laboratories

GRAV C18 HPLC Column

The GRAV C18 columns can offer ideal retentions of components of complex mixtures. An ultrapure (99.999%) and high surface area (440 m²/g) silica is used in the preparation of GRAV C18. The column has a high carbon load of about 24% and a unique bonding technology to achieve a high performance over a wide pH range. It comes with protective endcapping to give symmetrical peaks without tailing. The GRAV C18 columns are designed to increase productivity as they offer maximum loadability, excellent stability while maintaining superior resolutions. These analytical columns provide consistent performance that gives rise to an uncompromising chromatography. The GRAV C18 columns deliver the best results with an extended column life even under the most demanding conditions. These are ideal choices for nonpolar compounds.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore " Size(Å)	pH Range	"Particle Size(µm)"	"Dimensions Length x ID"	Applications
GRAV C18	Spherical	99.999	24	440	-	2-10	Multi	Multi	"Analgesics, antipsychotics, beta-blockers, TCAs, water soluble vitamins Cold medicine, cough medicine Methocarbamol injection RS, aripiprazole RS EP Cefpodoxime proxetil SS"



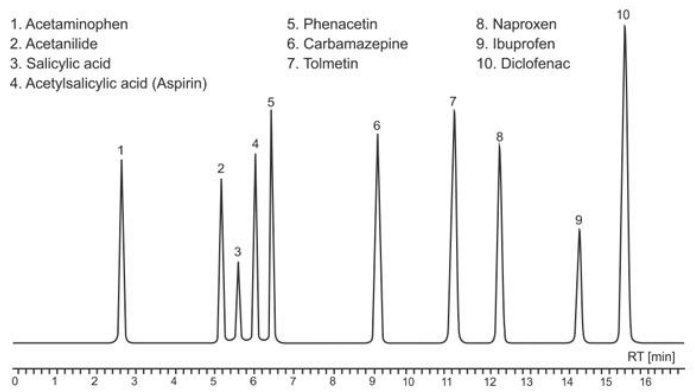
ANALYSIS OF ANALGESICS COMPOUND BY HPLC

Column : GRAV C18 | **Size :** 250mm x 4.6mm, 5µm

Mobile Phase : A: H₂O+0.1% HCOOH, B: CH₃CN+0.15% HCOOH

Gradient : 30%-80% in 15 mins, hold at 80% B for 15 mins.

Flow : 1.0 ml/min | **Detection :** UV@254nm

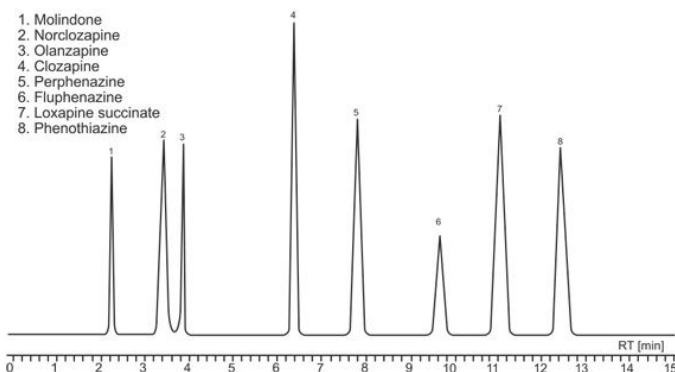


HPLC SEPARATION OF ANALGESICS

Column : GRAV C18 | **Size :** 150mm x 4.6mm, 5µm

Mobile Phase : A: H₂O+0.1% HCOOH, B: CH₃CN+0.1% HCOOH A:B - 60:40 |

Flow : 1.0 ml/min | **Detection :** UV@254 nm

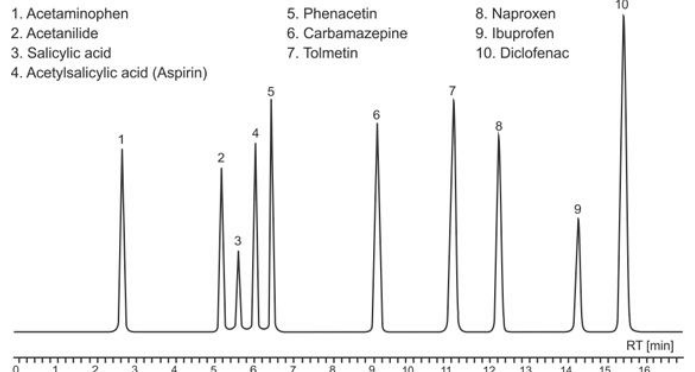


ANTI-PSYCHOTICS

Column : GRAV C18 | **Size :** 150mm x 4.6mm, 5µm

Mobile Phase : CH₃CN: 5mM NH₄HCO₃, pH10, 55:45

Flow : 1.0 ml/min | **Detedtion :** UV @ 220 nm

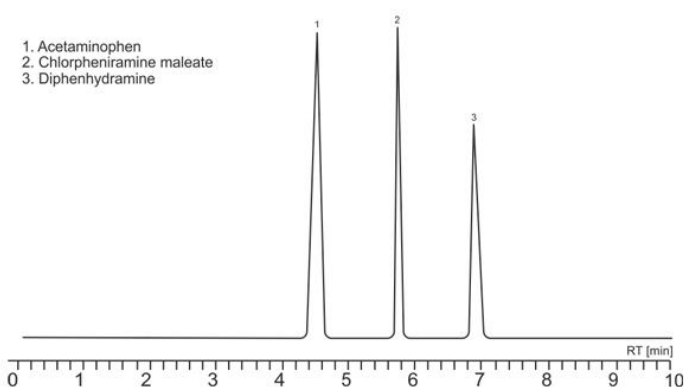


B-BLOCKERS

Column : GRAV C18 | **Size :** 150mm x 4.6mm, 5µm

Mobile Phase : CH₃OH:5 mM NH₄HCO₃, pH 10, 70:30

Flow : 1.0ml/min | **Detection :** UV @ 220 nm



1. Acetaminophen
2. Chlorpheniramine maleate
3. Diphenhydramine

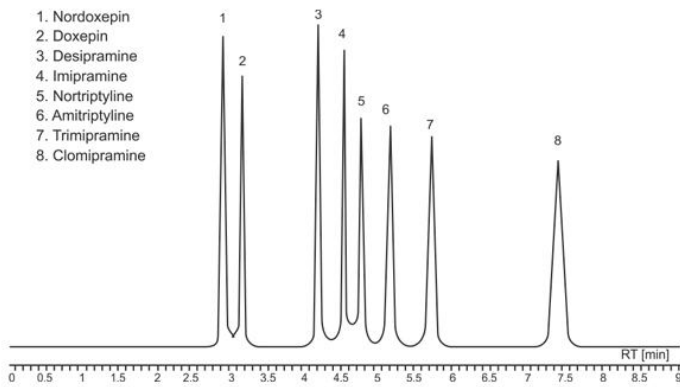
COLD MEDICINE

Column : GRAV C18 | **Size :** 250mm x 4.6mm, 10 μ m

Mobile Phase : A: H₂O + 0.1% HCOOH,
B: CH₃CN + 0.1% HCOOH

Gradient : 15% - 70% B in 10 mins |

Flow : 1.0 ml/min **Detection :** UV @ 254 nm



1. Nordoxepin
2. Doxepin
3. Desipramine
4. Imipramine
5. Nortriptyline
6. Amitriptyline
7. Trimipramine
8. Clomipramine

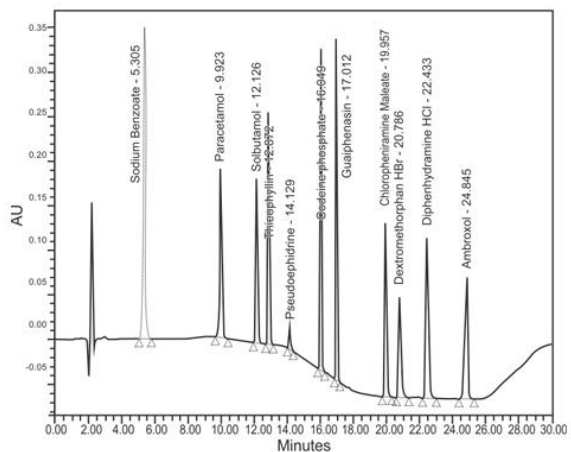
CYCLIC ANTIDEPRESSANTS

Column : GRAV C18 | **Size :** 150mm x 4.6mm, 5 μ m

Mobile Phase : A: H₂O + 0.1% HCOOH,
B: CH₃CN + 0.1% HCOOH

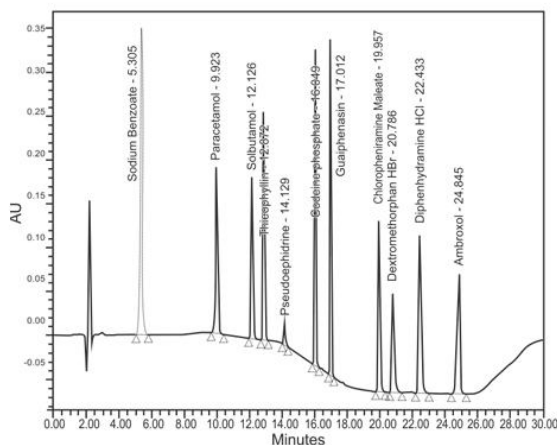
Gradient : 30% - 40% B in 15 mins |

Flow : 1.0 ml/min **Detection :** UV @ 254 nm



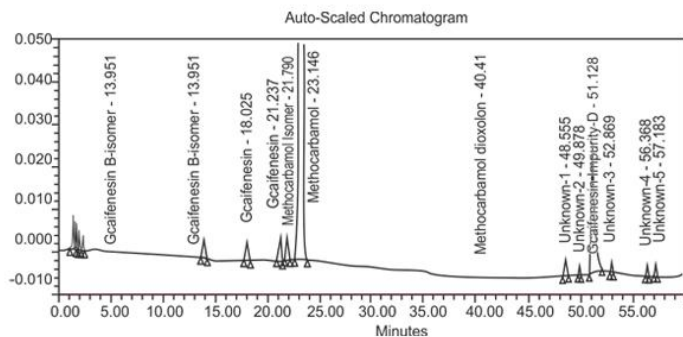
WATER SOLUBLE VITAMINS

Column : GRAV C18; 250mm x 4.6mm, 5 μ m



ANALYSIS OF COUGH AND ANALGESIC RELATED COMPOUNDS

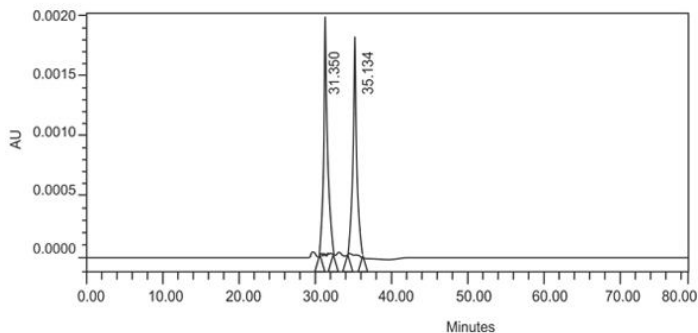
Column : GRAV C18; 150mm x 4.6mm, 3 μ m



METHOCARBOMOL INJECTION-RS METHOD

Column Name : GRAV C18 Column

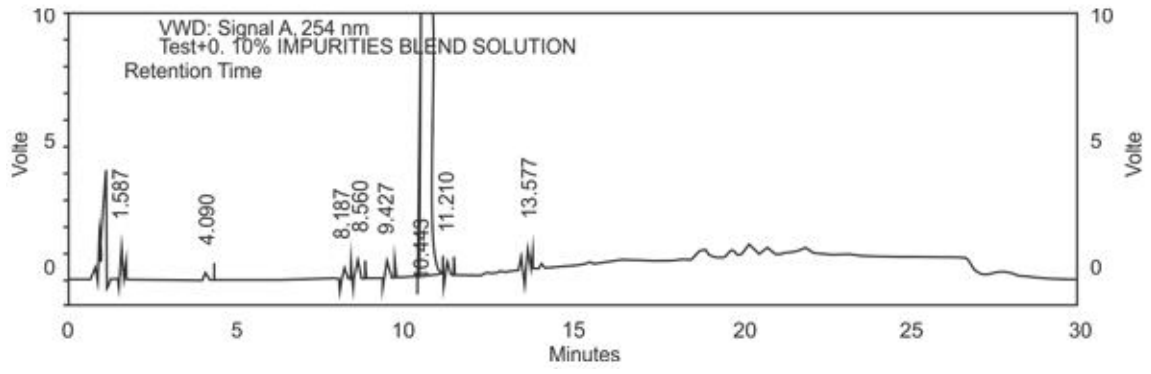
Compound Name : Methocarbamol | Guaifenesin isomer
Methocarbamol dioxolon | Guaifacol



CEFPODOXIME PROXETIL SYSTEM SUITABILITY METHOD

Column Name : GRAV C18 Column

Compound Name : Cefpodoxime Proxetil S-epimer
Cefpodoxime Proxetil R-epimer



Related Substance of Aripiprazole - EP
Column; GRAV C18; 100mm x 4.6mm, 3 μ m

ITAL 100 C18 HPLC Column

Why should the ratio of the carbon load (%C) to the surface area of HPLC columns be carefully selected especially when using the C18 (ODS) and C8 stationary phases? Because a change in this ratio for different column types may change the column selectivity; those with a lower ratio are likely to offer better differentiation among structurally similar compounds whose hydrophobicity does not differ much. This is why the ITAL 100 C18 columns are designed to have a carbon load of about 19% and a 340 m²/g surface area that offer a reasonably good pH range of 2-9.

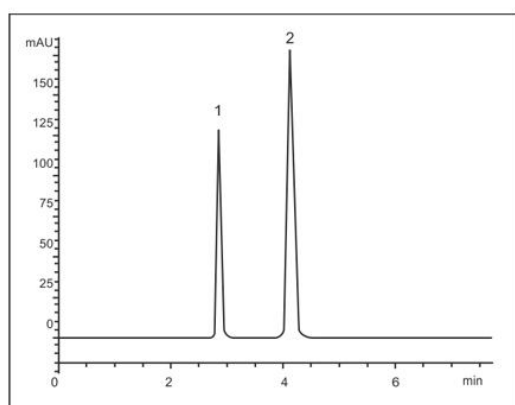
Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore Size(Å)"	pH Range	"Particle Size(µm)"	"Dimensions Length x ID"	Applications
ITAL 100 C18	Spherical	99.999	19	340	100	2-9	Multi	Multi	-

Cross Reference : Symmetry C18 (100 Å)

OXAL C18 (1) HPLC Column

The OXAL C18 (1) columns speed up the separation with the intended retentions and selectivity. An ultrapure (99.999%) and high enough surface area (200 m²/g) silica is used in the preparation of OXAL C18 (1). The column has a reduced carbon load of about 13% (therefore, reduced hydrophobicity) and a unique bonding technology to achieve a high performance over a wide pH range. It comes with protective endcapping to give symmetrical peaks without tailing. The OXAL C18 (1) columns possess high reliability, durability, and offer superior resolutions. These are great choices for all-round applications in the analyses of acidic, basic and neutral compounds.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore Size(Å)"	pH Range	"Particle Size(µm)"	"Dimensions Length x ID"	Applications
OXAL C18 (1)	Spherical	99.999	13	200	190	1.5-10	Multi	Multi	"Reduced and oxidized glutathione Acidic compounds"



Samples : 1. L-Glutathione Reduced (g-Glu-Cys.Gly)
2. L-Glutathione Oxidized (g-Glu-Cys.Gly) (g-Glu-Cys.Gly)

REDUCED AND OXIDIZED GLUTATHIONE

Column Name : OXAL C18(1) HPLC Column

Column : OXAL C18(1), 150 x 4.6 mm, 5µm

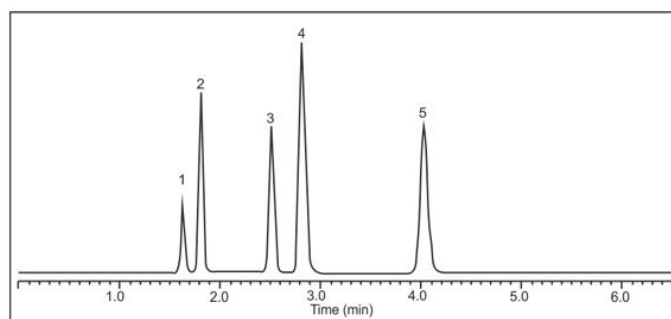
Mobile Phase : H₂O + 0.1% TFA, pH 2.0:CH₃OH - 90:10

Flow Rate : 1.0 ml/min |

Temperature : Ambient | **Detection :** 215 nm

Technique : HPLC
Column : OXAL 5µm C18(1), 150 x 4.6mm
Temperature : Ambient
Eluent : A: MeCN
B: Water + 0.1% TFA
A:B - 50:50
Flow rate : 1.0 mL/min
Detection : UV @ 254 nm

Samples : 1. Uracil
2. Caffeine
3. Sorbic acid
4. Salicylic acid
5. Propyl Paraben



ACIDIC COMPOUNDS

Column Name : OXAL C18(1) HPLC Column

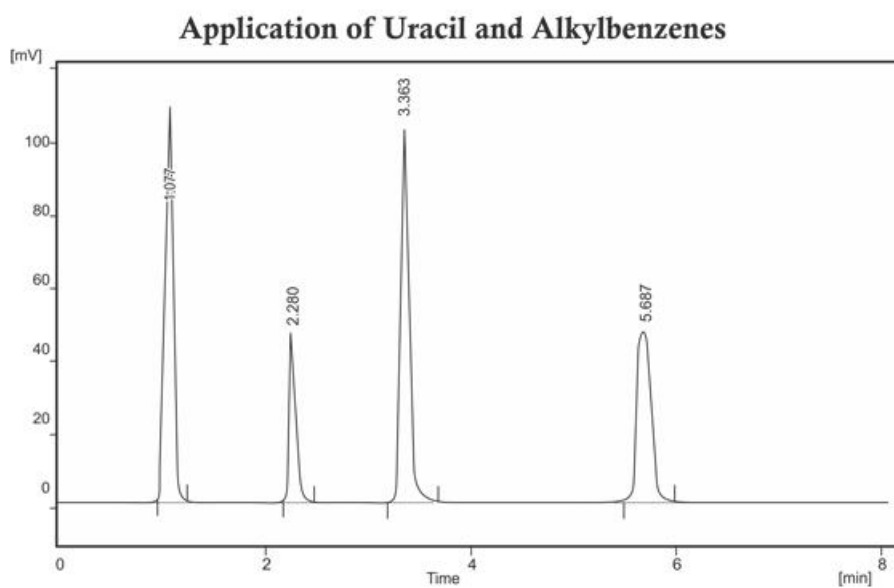
Compound Name : Sorbic acid, Salicylic acid,

Uracil Caffeine, Propyl paraben

ECIP C18-i3 HPLC Column

The ECIP C18-i3 columns are prepared with ultrapure silica (99.999%) with a narrow particle size distribution. These have a carbon load of about 17% and a unique bonding technology to achieve a high performance over the standard pH range. The column comes with protective endcapping to give symmetrical peaks without tailing. The ECIP C18-i3 columns are designed to increase productivity as they offer maximum loadability, excellent stability while maintaining superior resolutions. For nonpolar compounds these are long-life all-purpose columns that deliver the best results.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore Size(Å)"	pH Range	"Particle Size(μm)"	"Dimensions Length x ID"	Applications
ECIP C18-i3	Spherical	99.999	17	340	-	2-8	Multi	Multi	Uracil and alkylbenzenes

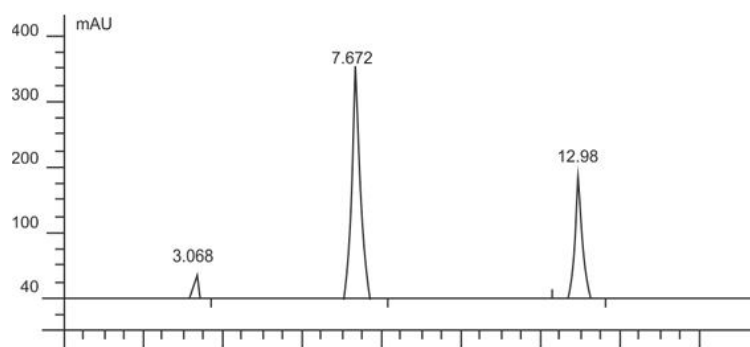


Column : ECIP C18; **Dimension :** 150mm x 4.6mm, 5μm
Mobile Phase : ACN/H₂O; 85:15 **Flow Rate :** 1.3ml/min
Temperature : Ambient **Detection :** UV @ 254 nm

AXISIL ODS 3V HPLC Column

The AXISIL ODS3V columns provide excellent peak shapes with simple eluents & at low back-pressure.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore " Size(Å)"	pH Range	"Particle Size(µm)"	"Dimensions Length x ID"	Applications
AXISIL ODS 3V	Spherical	99.999	18	300	-	-	Multi	Multi	Organics



Column : Axisil ODS 3V **Dimension :** 250mm x 4.6mm, 5µm
Mobile Phase : ACN/H₂O; 80:20 **Flow Rate :** 1ml/min
Temperatue : Ambient **Detection :** UV @ 254 nm
 Phenol, Naphthalene, Anthracene

ANA Spheriyoke ODS 2 HPLC Column

The ANA Spheriyoke ODS 2 HPLC column is based on the type A silica, and has the same physical and chemical properties and bonding density as the original reversed phase support (Waters Spherisorb ODS2 C18 Column). The selectivity of the two packings is the same. The typical application field of this classical packing with a moderate silanophilic activity is pharmaceutical analytes.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore " Size(Å)"	pH Range	"Particle Size(µm)"	"Dimensions Length x ID"	Applications
ANA Spheriyoke ODS 2	Spherical	99.999	12	220	80	2-7	Multi	Multi	-

Cross Reference : Zorbax SB C18 (80 Å), Zorbax Eclipse XDB C18 (80 Å)

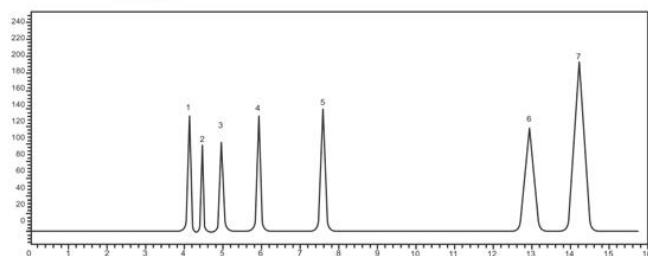
ENSO C8 HPLC Column

The ENSO C8 column has more polar phase than a C18 column, and is used for typical separations. It has a high surface area (440 m²/g). This column is an ideal choice when analytical laboratories need more speed than what C18 columns offer. The superior resolution of the ENSO C8 column speeds up the method development and validation. These columns are highly stable, and produce reproducible and reliable results with an extended column life. The column comes with protective endcapping for symmetrical peaks without tailing. The column packing sustains any pH between 1.5 and 10.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore " Size(Å)"	pH Range	"Particle Size(µm)"	"Dimensions Length x ID"	Applications
ENSO C8	Spherical	99.999	15	440	100	1.5-10	Multi	Multi	"Positional isomers Cold medicine Furosemide RS TCAs and benzos mix"

Caffeine Metabolites on ENSO C8

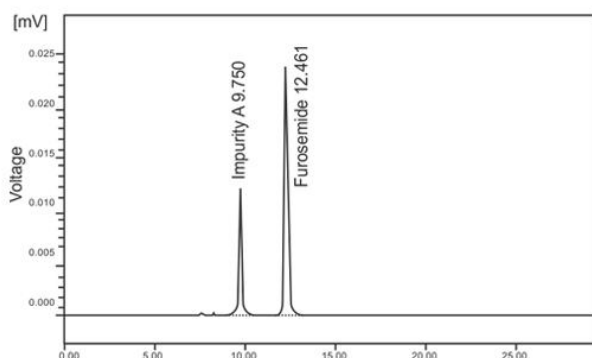
Column: ENSO C8
 Dimensions: 150×4.6mm, 5µ
 Mobile Phase: CH₃OH:1% CH₃COOH in H₂O - 10:90
 Flow Rate: 1.0 ml/min
 Temperature: Ambient
 Detection: 254 nm



SEPARATION OF POSITIONAL ISOMERS

Compound Name : 1. 7-Methylxanthine | 2. 1-Methyluric acid
 3. 3-Methylxanthine 4. 1-Methylxanthine
 5. 3,7-Dimethylxanthine
 6. 1,7-Dimethylxanthine 7. 1,3-DimethylxanthineM

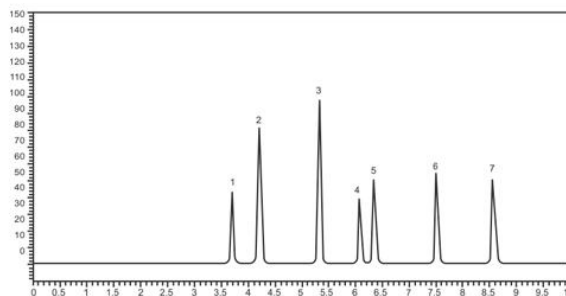
Column Name: ENSO C8 250×4.6mm, 5µm
 Samples: 1. Impurity A
 2. Furosemide



RELATED SUBSTANCES OF FUROSEMIDE (FRUSEMIDE) BY HPLC

Compound Name : 1. Furosemide | 2. Impurity A

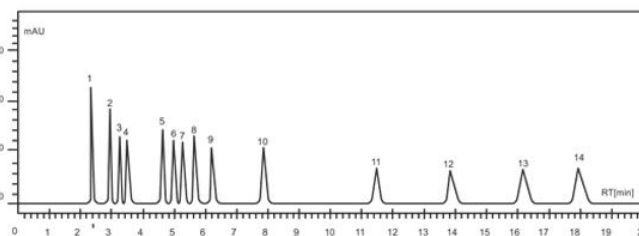
Column: ENSO C8
 Dimensions: 150×4.6mm, 5µ
 Mobile Phase: A:CH₃ + 0.1% HCOOH, B: CH₃CN + 0.1% HCOOH
 Gradient: 10% - 75% B in 10 mins
 Flow Rate: 1.0 ml/min
 Temperature: Ambient
 Detection: 254 nm



APPLICATION OF COLD MEDICINE

Compound Name : 1. Acetylsalicylic acid (Aspirin) |
 2. Salicylic acid | 3. Acetaminophen
 4. Chlorpheniramine maleate |
 5. Dextromethorphan Hbr 6. Diphenhydramine Hcl |
 7. Doxylamine succinate

Column: ENSO C8
 Dimensions: 150×4.6mm, 5µ
 Mobile Phase: A: H₂O + 0.1% HCOOH, B: CH₃CN + 0.1% HCOOH
 Gradient 30% - 40% B in 15 mins, hold at 40% B for 15 min
 Flow Rate: 1.0 ml/min
 Temperature: Ambient
 Detection: 254 nm



APPLICATION OF TCAS AND BENZOS MIX

Compound Name : 1. 7-Aminoclonazepam
 2. 7-Aminoflunitrazepam | 3. Nordoxepin 4. Doxepin
 5. Desipramine | 6. Imipramine | 7. Nortriptyline 8. Amitriptyline
 9. Trimipramine | 10. Clomipramine 11. Nordiazepam
 12. Clonazepam | 13. Flunitrazepam | 14. Diazepam

Cross Reference : AquaSep (100 Å)

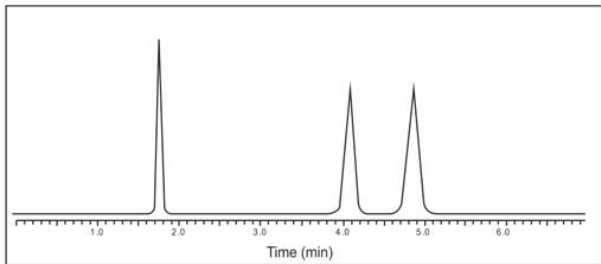
OUSA C8 (1) HPLC Column

The OUSA C8 (1) column offers faster separation than the C18 columns do. The ultrapure silica used here has a surface area of 200 m²/g, and a carbon load of about 7%. The column comes with protective endcapping for symmetrical peaks without tailing and high durability. The column chemistry is suitable for working in the wide pH range of 1.5 to 10 due to its outstanding stability.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore Size(Å)"	pH Range	"Particle Size(µm)"	"Dimensions Length x ID"	Applications
OUSA C8 (1)	Spherical	99.999	7.4	200	190	1.5-10	Multi	Multi	"Cephalosporin antibiotics Peptides, fatty acids Furosemide RS"

Technique : HPLC
 Column : OUSA C8(1) 150×4.6mm 5µ
 Temperature : Ambient
 Eluent : A:MeOH
 B: 25mm KH₂PO₄, pH3
 A:B 20:80
 Flow rate : 1.5 mL/min
 Detection : UV @ 230nm

Samples : 1. Cefadroxil
 2. Cefaclor
 3. Cephalexin

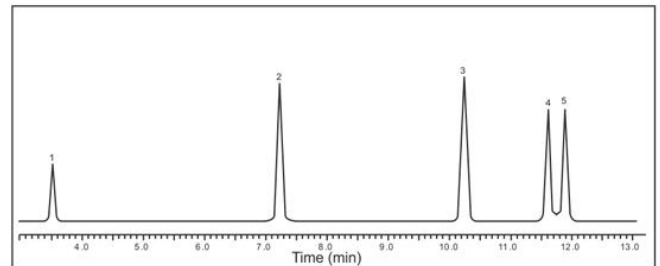


CEPHALOSPORIN ANTIBIOTICS DRUGS

Compound Name : 1. Cefadroxil | 2. Cefaclor | 3. Cephalexin

Technique : HPLC
 Column : OUSA C8(1), 150×4.6mm 5µ
 Temperature : Ambient
 Eluent : A:0.1% TFA in water
 B: 0.1% TFA in MeCN
 Gradient : 10 – 40% B in 15 min.
 Flow rate : 1.0 ml/min
 Detection : UV @ 220nm

Samples : 1. Gly-Tyr
 2. Val-Tyr-Val
 3. Methionin-Enkephalin
 4. Angiotensin II
 5. Leucine Enkephalin

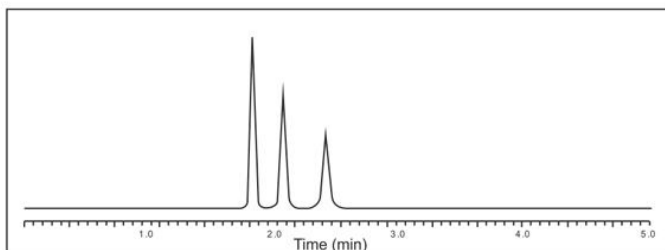


PEPTIDES

Compound Name : 1. Gly-Tyr | 2. Val-Tyr-Val
 3. Methionin-Enkephalin 4. Angiotensin II
 5. Leucine Enkephalin

Technique : HPLC
 Column : OUSA C8(1), 150×4.6mm 5µ
 Temperature : Ambient
 Eluent : A:MeOH + 0.1% HCOOH
 B: Water + 0.1% HCOOH
 A:B=95:5
 Flow rate : 1.5 mL/min
 Detection : UV @ 205nm

Samples : 1. Linolenic acid
 2. Linoleic acid
 3. Oleic acid

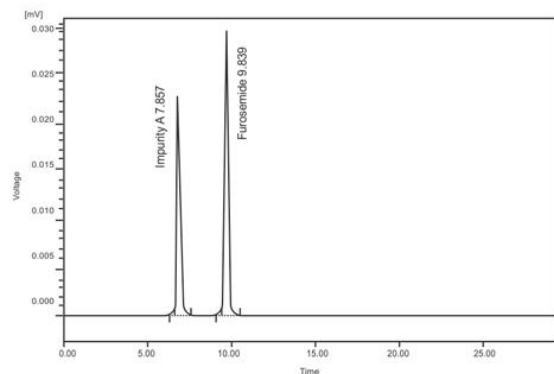


FATTY ACIDS

Compound Name : 1. Linolenic acid
 2. Linoleic acid | 3. Oleic acid

Column Name: OUSA C8(1)250×4.6mm 5µm

Samples : 1. Impurity A
 2. Furosemide



RELATED SUBSTANCES OF FUROSEMIDE (FRUSEMIDE) BY HPLC

Compound Name : 1. Impurity A | 2. Furosemide

Cross Reference : Polaris, C8-A (180 Å)

VAIC C8-i3 HPLC Column

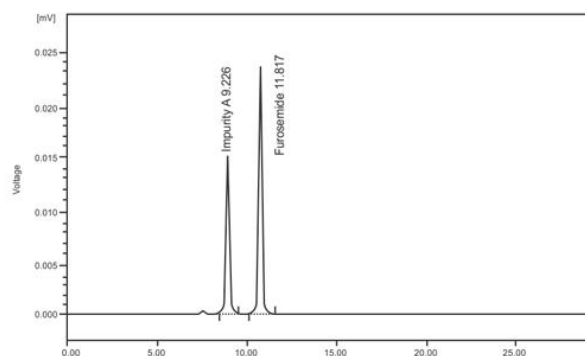
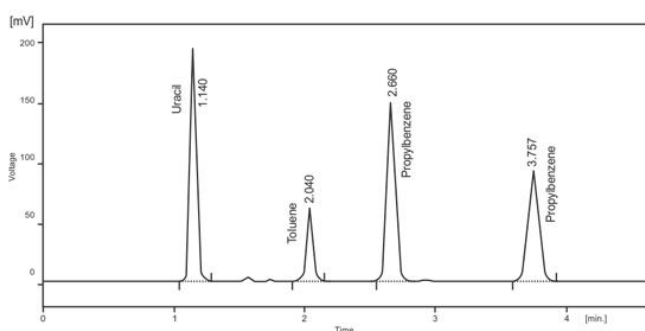
The VAIC C8-i3 column is less hydrophobic (marginally more polar than C18) with high surface area, optimal carbon load and uniquely bonded silica packing. It offers faster analysis (compared to C18), excellent resolutions and exceptional reproducibility. These columns are highly stable, and produce reliable results. The column comes with protective endcapping for symmetrical peaks without tailing and high durability. The column is suitable for working in the pH range of 2 to 8.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore Size(Å)"	pH Range	"Particle Size(μm)"	"Dimensions Length x ID"	Applications
VAIC C8-i3	Spherical	99.999	12	340	100	2-8	Multi	Multi	"Furosemide RS Peptides"

Column : VAIC C8-i3
 Dimension : 150×4.6mm, 5μm
 Mobile Phase : ACN/H₂O ; 85:15
 Flow rate : 1.3ml/min
 Temperature : Ambient
 Detection : UV @ 254 nm

Column Name: VAIC C8-i3 250×4.6mm 5μm

Samples : 1. Impurity A
 2. Furosemide



RELATED SUBSTANCES OF FUROSEMIDE (FRUSEMIDE) BY HPLC

Compound Name : 1. Cefadroxil | 2. Cefaclor | 3. Cephalixin | 3. Methionin-Enkephalin | 4. Angiotensin II | 5. Leucine Enkephalin

PEPTIDES

Compound Name : 1. Gly-Tyr | 2. Val-Tyr-Val

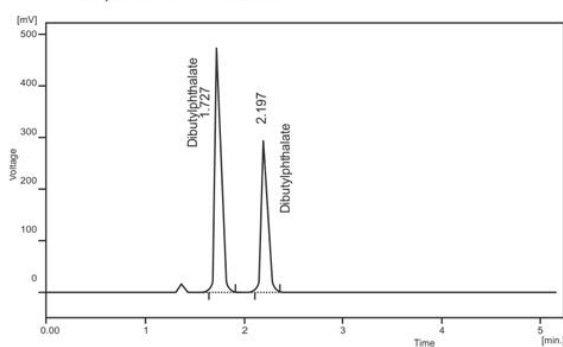
Cross Reference : SunFire C8 (100 Å), Ascentis C8 (100 Å), Columbus C8 (110 Å), Luna C8 (2) (100 Å), Symmetry C8 (100 Å)

ALYS Silica HPLC Column

The Alys silica columns are made with spherical, pure (99.999%) silica particles. These columns provide excellent peak shapes using simple eluents while operating at low back-pressure for polar compound applications.

Name	Silica Type	"Silica Purity(%)"	"Carbon Load(%C)"	"Surface Area(m ² /g)"	"Pore " Size(Å)	pH Range	"Particle Size(μm)"	"Dimensions Length x ID"	Applications
ALYS SILICA	Spherical	99.999	0	450	100	2-6	Multi	Multi	Uracil and alkylbenzenes

Column : Alys Silica
Dimension : 150x4.6mm, 5μm
Mobile Phase : N-Hexane/IPA ; 98.5/15
Flow rate : 1.3ml/min
Detection : UV @ 254 nm
Temperature : Ambient



APPLICATION OF URACIL AND ALKYL BENZENES

Compound Name : 1. Uracil | 2. Toluene | 3. Propylbenzene | 4. pentylbenzene

Cross Reference : Inertsil SIL (100 Å)