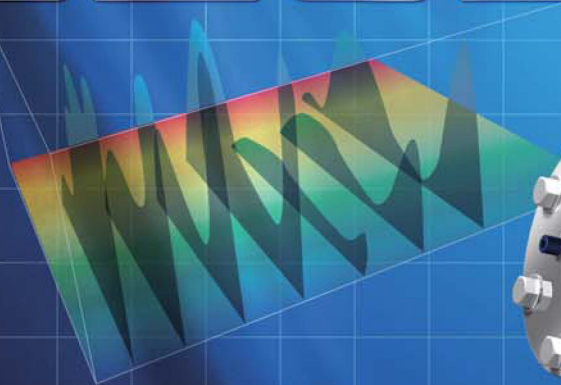
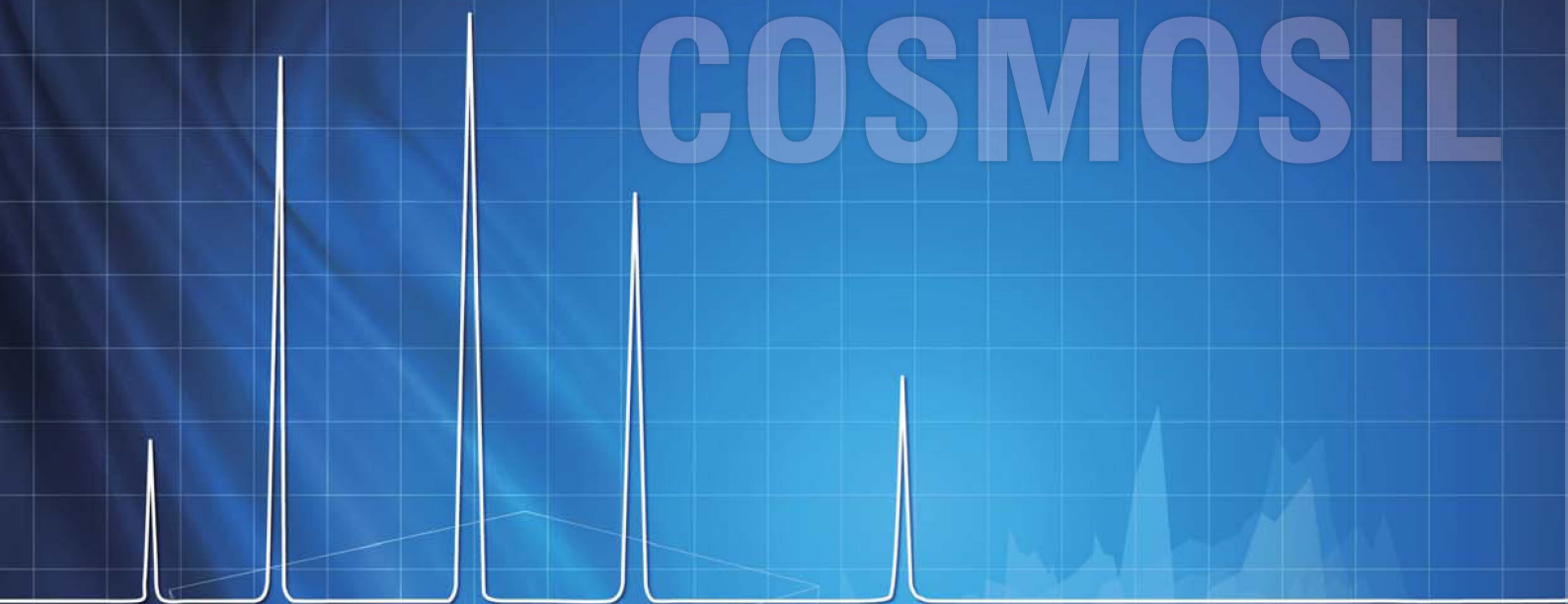




COSMOSIL

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COSMOSIL HILIC
Application Notebook
2013

COSMOSIL HILIC Application Notebook contains about 200 chromatograms for the separation of polar compounds using COSMOSIL HILIC column. It also describes how the mobile phase conditions, such as buffer pH and salt concentration influence the separation in HILIC mode

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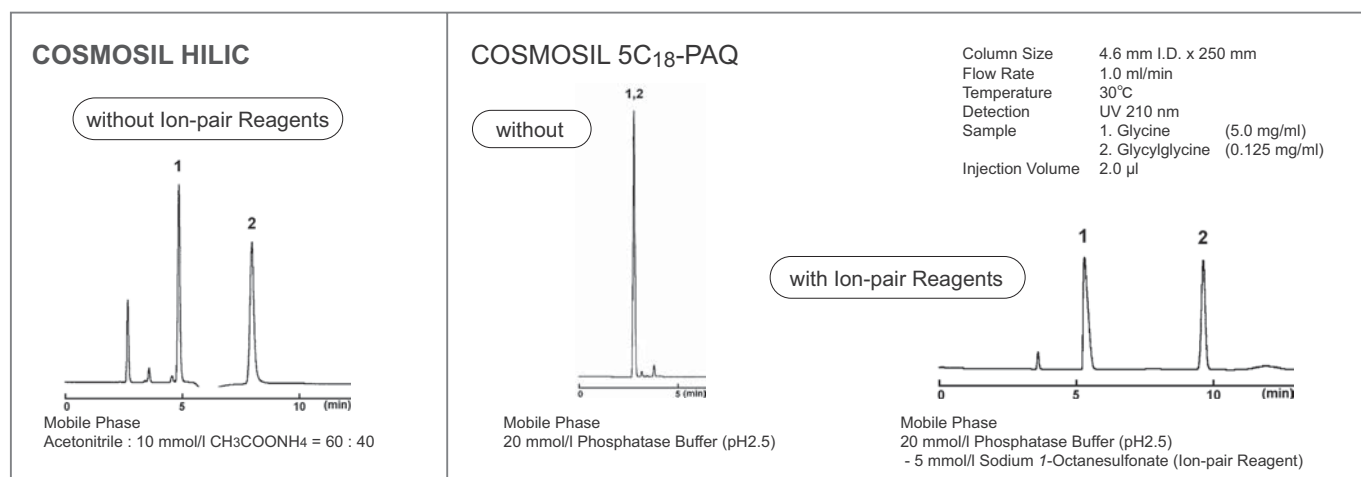
Hydrophilic Interaction Chromatography

The hydrophilic interaction chromatography is a variation of normal phase chromatography. The elution order is similar to that of normal phase and the sample elution is in the order of increasing hydrophilicity.

Separation Mode	Hydrophilic interaction chromatography	Hydrophobic interaction chromatography
Stationary Phase	Hydrophilic Group (or Silica Gel)	Hydrophobic group (C ₁₈ etc.)
Mobile Phase	Organic Solvent (CH ₃ CN etc.) / H ₂ O	
Main Interaction	Hydrophilic interaction	Hydrophobic interaction
Target Sample	Hydrophilic compounds	Hydrophilic and hydrophobic compounds
Features	<ul style="list-style-type: none"> for separation of Hydrophilic compounds Suitable for LC/MS 	<ul style="list-style-type: none"> for the widest range of compounds High separation ability A wide range of applications

Comparison with C₁₈

COSMOSIL HILIC can separate glycine and glycyglycine without ion-pair reagent. Although C₁₈ column can separate them with ion-pair reagents, there are some disadvantages such as longer column equilibration time, time-consuming preparation of mobile phase and earlier column deterioration.



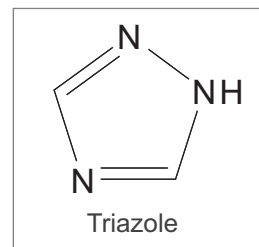


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HPLC Column for Hydrophilic Interaction

COSMOSIL HILIC

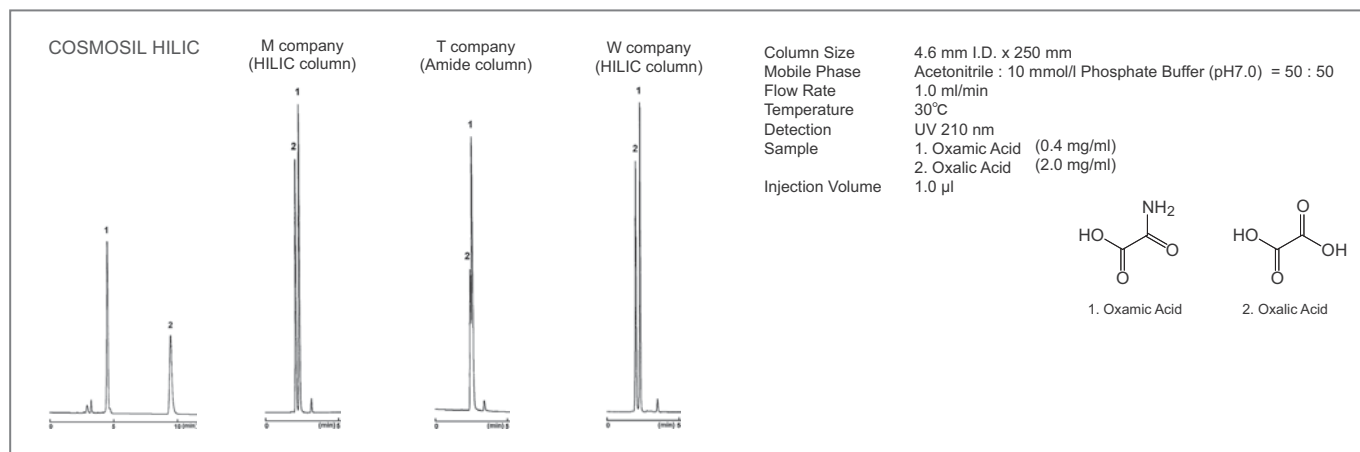
- Triazole bonded stationary phase
- Enhanced hydrophilic interaction
- Alternative selectivity to other HILIC columns



Different Interactions

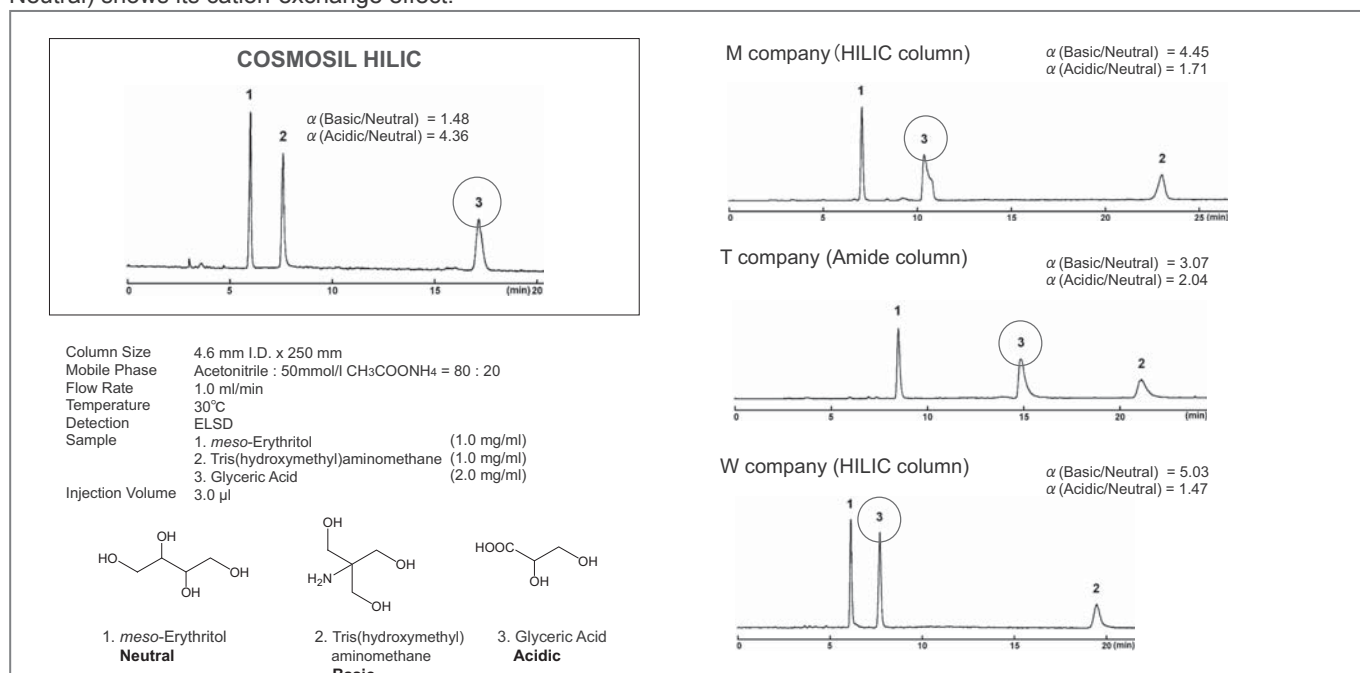
• Separation of Anionic Compounds

Anionic compounds were used to evaluate the anion-exchange capability. The only COSMOSIL HILIC showed strong selectivity of anionic compounds against competitors' columns



• Separation of Acidic, Basic and Neutral Compounds

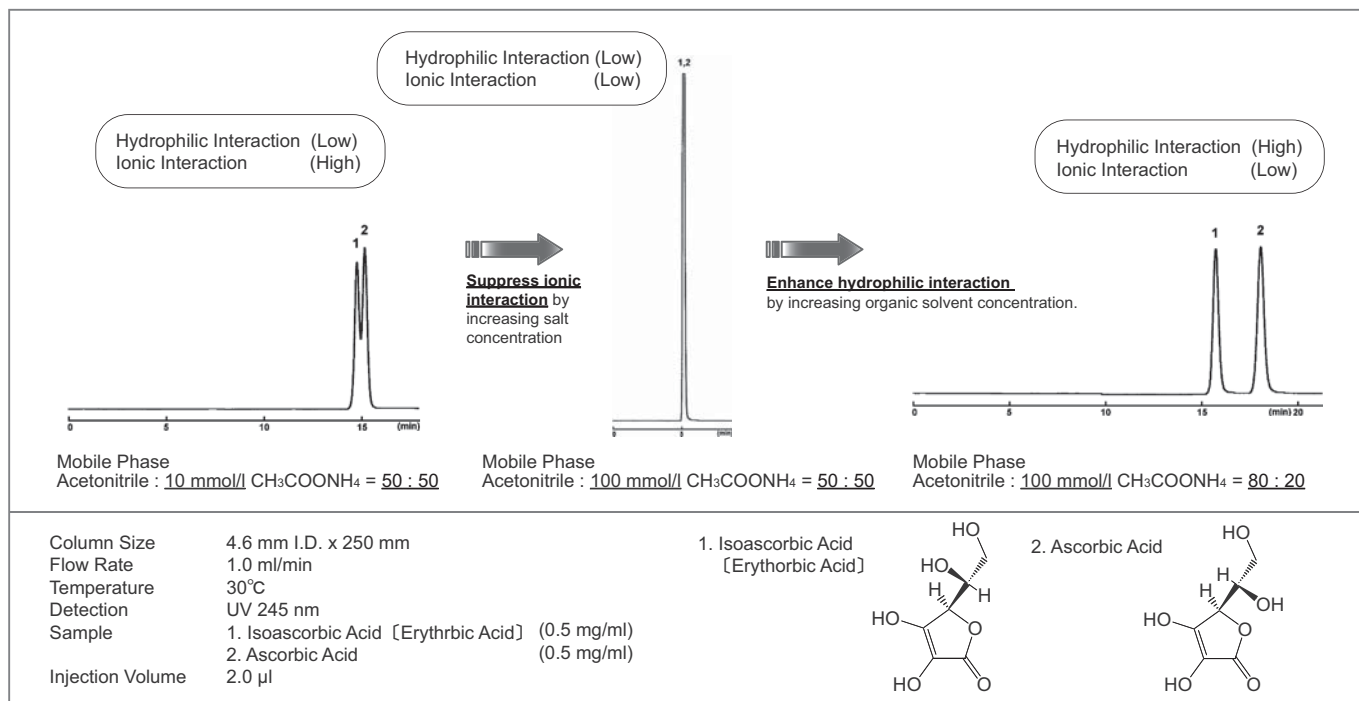
Acidic (Glyceric Acid), basic (Tris) and neutral (*meso*-Erythritol) compounds were used for evaluation of anion and cation-exchange characteristics. The separation factor $\alpha(\text{Acid/Neutral})$ indicates its anion-exchange capability and the factor $\alpha(\text{Basic/Neutral})$ shows its cation-exchange effect.



Different Interactions

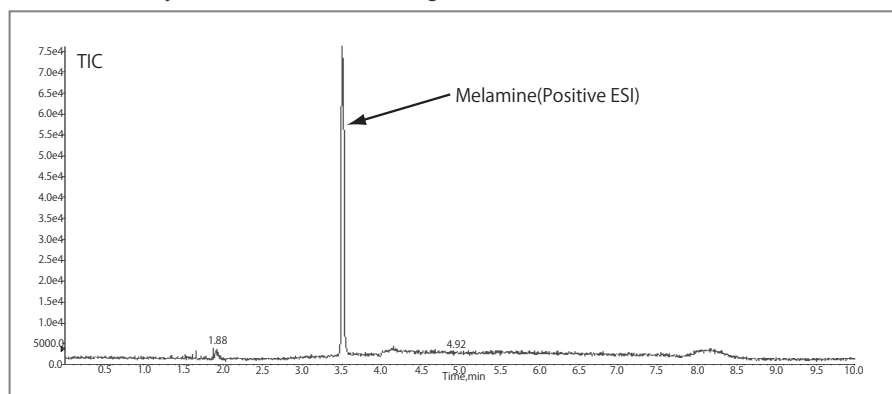
Separation by Hydrophilic Interaction

The retention mechanism of COSMOSIL HILIC is the combination of hydrophilic interaction and anion-exchange capability, and the retention can be controlled by changing the mobile phase.

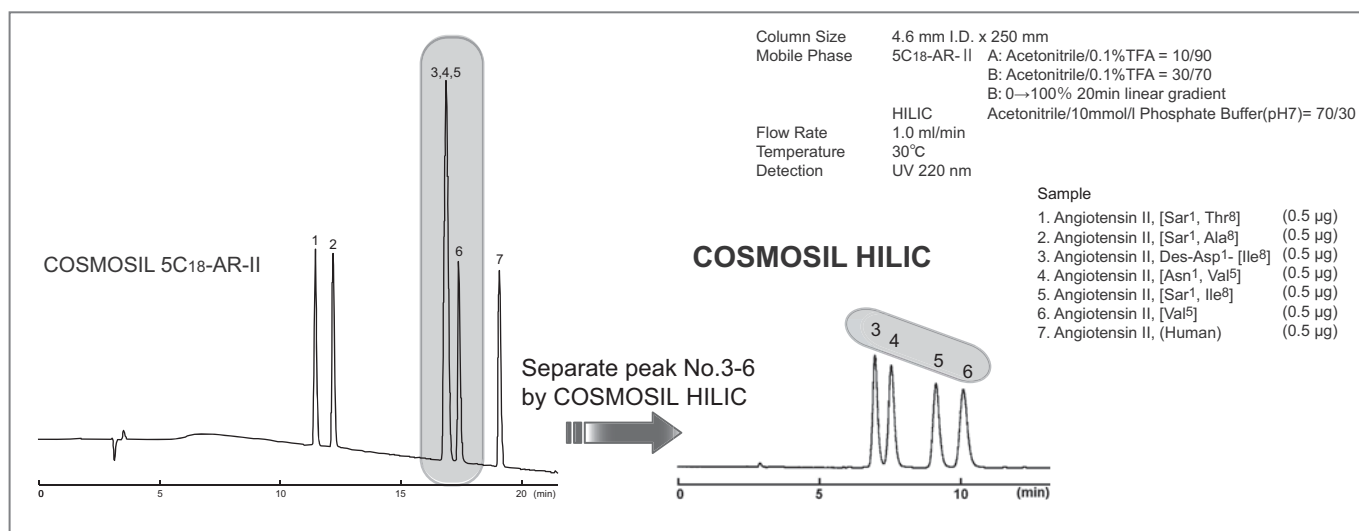


Melamine Analysis

Melamine analysis and LC/MS/MS using COSMOSIL HILIC.



Combination with C₁₈ Columns



Ordering Information

Product Name	Column Size	Product Number
COSMOSIL HILIC Packed Column	1.0 mm I.D. x 150 mm	07869-11
	1.0 mm I.D. x 250 mm	07870-71
	2.0 mm I.D. x 30 mm	08568-21
	2.0 mm I.D. x 50 mm	07052-91
	2.0 mm I.D. x 100 mm	08569-11
	2.0 mm I.D. x 150 mm	07054-71
	2.0 mm I.D. x 250 mm	07489-91
	3.0 mm I.D. x 150 mm	07871-61
	3.0 mm I.D. x 250 mm	07872-51
	4.6 mm I.D. x 150 mm	07056-51
4.6 mm I.D. x 150 mm 3 lots set	09385-23	

Product Name	Column Size	Product Number
COSMOSIL HILIC Packed Column	4.6 mm I.D. x 250 mm	07057-41
	10.0 mm I.D. x 150 mm	05564-51
	10.0 mm I.D. x 250 mm	07059-21
	20.0 mm I.D. x 250 mm	07060-81
	28.0 mm I.D. x 250 mm	07875-21
COSMOSIL HILIC Guard Column	4.6 mm I.D. x 10 mm	07055-61
	10.0 mm I.D. x 20 mm	07058-31
	20.0 mm I.D. x 20 mm	07854-91
	20.0 mm I.D. x 50 mm	07873-41
	28.0 mm I.D. x 50 mm	07874-31

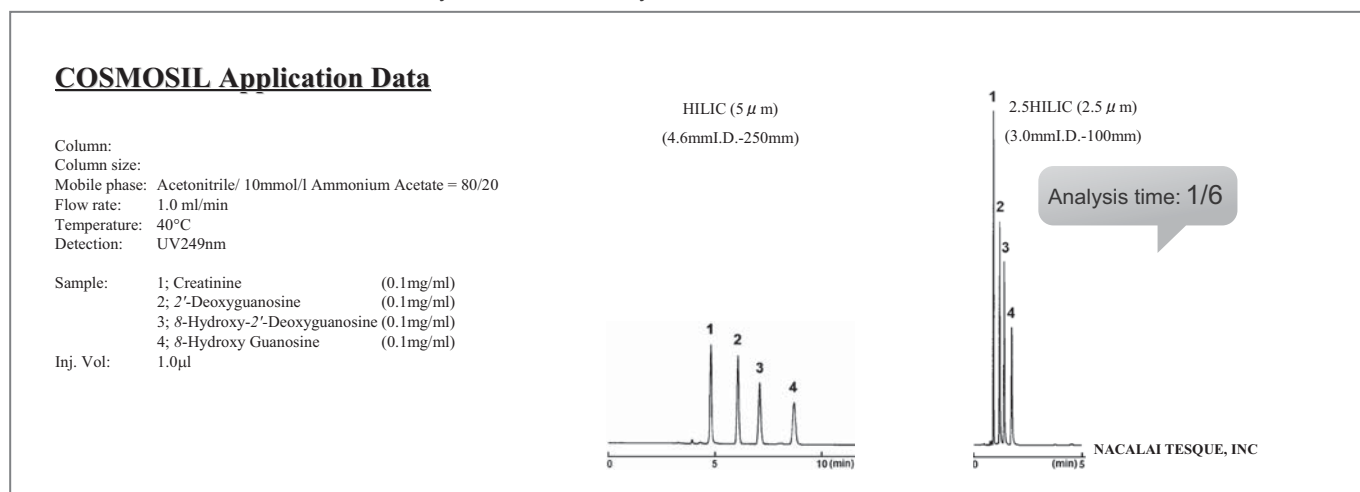
Ultra-High Performance Column for HILIC Analysis

COSMOSIL 2.5HILIC

- Ultra-High Performance using 2.5 μm particles

Ultra-High-Speed Analysis (Oxidation marker analysis)

COSMOSIL 2.5HILIC can be used with any conventional LC systems.



Ordering Information

Product Name	Column Size	Product Number
COSMOSIL 2.5HILIC Packed Column	2.0 mm I.D. x 50 mm	11766-21
	2.0 mm I.D. x 75 mm	11768-01
	2.0 mm I.D. x 100 mm	11769-91
	2.0 mm I.D. x 150 mm	11770-51

Product Name	Column Size	Product Number
COSMOSIL 2.5HILIC Packed Column	3.0 mm I.D. x 50 mm	11771-41
	3.0 mm I.D. x 75 mm	11772-31
	3.0 mm I.D. x 100 mm	11773-21
	3.0 mm I.D. x 150 mm	11774-11

Selection guide of mobile phase

COMOSIL HILIC column generates retention and separation by hydrophilic interaction (mainly hydrogen bond) and anion-exchange. Refer to following recommendations to select an appropriate mobile phase condition.

(1) The effect of organic solvent type and content

- In general, acetonitrile/water is used as mobile phase.
- Retention increases as water content in the mobile phase decreased. (Fig.1)
- Use acetonitrile content in the mobile phase within the range of 0-95% (in general 50-95%).
- Methanol/water generates shorter retention than acetonitrile/water. (Fig.2)
- Use only HPLC grade solvent

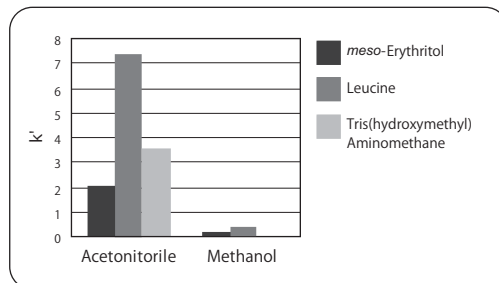
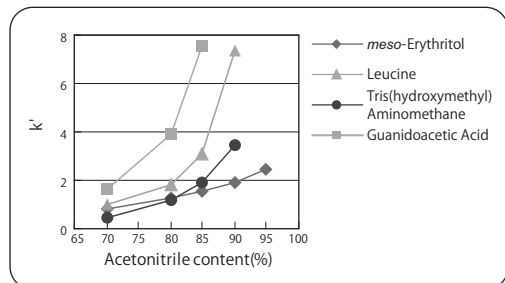


Fig.1 The effect of acetonitrile content on retention

Column; COSMOSIL HILIC
Mobile phase; Acetonitrile/ 10mmol/l CH₃COONH₄

Fig.2 Difference of acetonitrile and methanol on retention

Column; COSMOSIL HILIC
Mobile phase; Organic solvent/ 10mmol/l CH₃COONH₄ = 90/10

(2) The effect of buffer pH

- Keep pH of the mobile phase within the range of 2-7.5.
- The buffer around neutrality generates larger retention. (Fig.3)

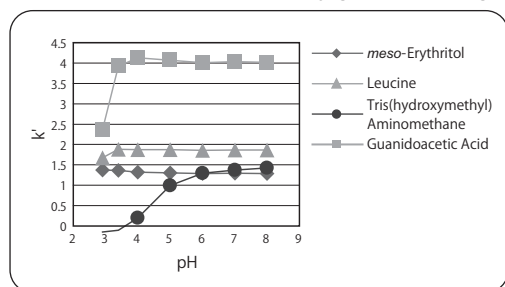


Fig.3 The effect of buffer pH on retention

Column; COSMOSIL HILIC
Mobile phase; Acetonitrile / 10mmol/l buffer = 90/10

(3) The effect of salt type and concentration

- When analyze ionic compounds, add salts or buffers in the mobile phase.
- When mobile phase has high acetonitrile content, note dissolubility of the salt. The dissolubility of phosphate buffers used widely in reversed phase chromatography is low in acetonitrile. Therefore use of phosphate buffers is not recommended. Keep the concentration of acetonitrile under 70% if use a phosphate buffer. Check that the salt does not precipitate when mixed with acetonitril before use.
- Ammonium acetate or formic acid ammonium buffers are recommended because they are soluble in high acetonitrile content.
- Use the buffer concentration within the range of 5 - 100mmol/l. Moreover, check that the salt does not precipitate after mixing buffer and acetonitrile.
- High salt concentration inhibits ion exchange capability and decreases retention. (Fig.4)
- Run mobile phase through membrane filter (less than 0.45μm in pore size) before use.

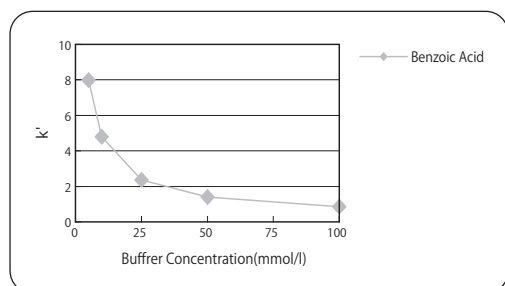


Fig.4 The effect of salt concentration on retention

Column; COSMOSIL HILIC
Mobile phase; Acetonitrile / 10mmol/l CH₃COONH₄ = 50/50

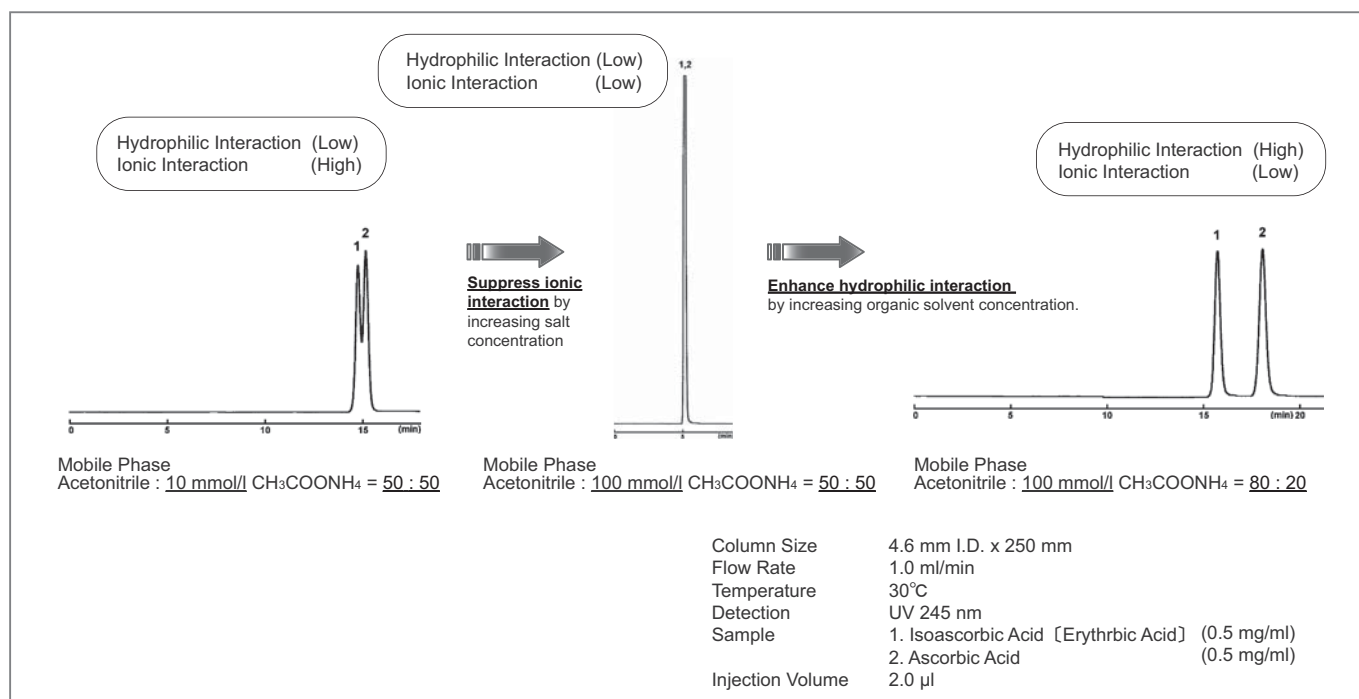
(4) Selection of mobile phase

Following are the recommended mobile phases for different compound types.

Neutral compounds	→ Acetonitrile / Water = 90/10
Basic compounds	→ Acetonitrile / 10mmol/l CH ₃ COONH ₄ = 90/10
Amphoteric compounds	→ Acetonitrile / 10mmol/l CH ₃ COONH ₄ = 70/30
Acidic compounds	→ Acetonitrile / 10mmol/l CH ₃ COONH ₄ = 50/50
	↓ not eluted
	Acetonitrile / 10mmol/l Phosphate buffer (pH7.0)= 50/50

(5) Two interactions (hydrophilic interaction and anion exchange capability)

The retention mechanism of COSMOSIL HILIC is the combination of hydrophilic interaction and anion-exchange, and the retention can be controlled by changing the mobile phase. More specifically, the hydrophilic interaction can be enhanced by increasing the organic solvent concentration while suppressing the ionic interaction with high salt concentration.



(6) Improvement of peak shape

Try following if peak shape is tailing. The peak shape might improve.

- Add 5mmol/l EDTA to mobile phase.
- Change to citrate buffer. (i. e. 10 mmol/l citrate buffer pH7.0)

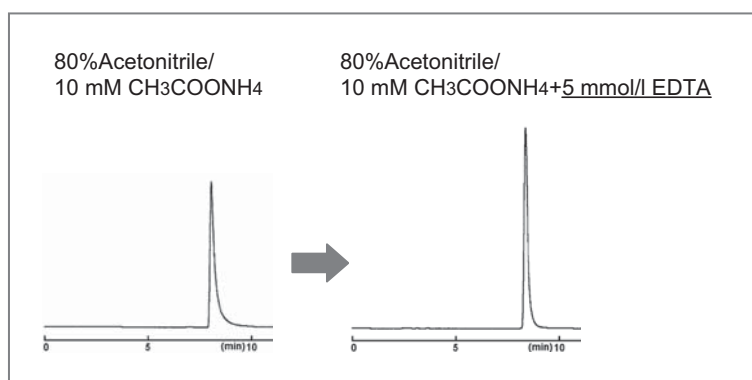


Fig.5 Improvement of peak shape

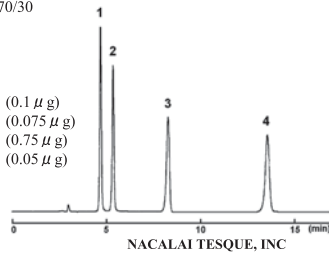
(7) Others

- Use scrupulously degassed mobile phase. Air bubbles generate detection noise and accelerate column deterioration.
- We recommend keeping the chromatography conditions constant, since frequent changes of mobile phase shorten column life.

COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium Acetate = 70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV225nm

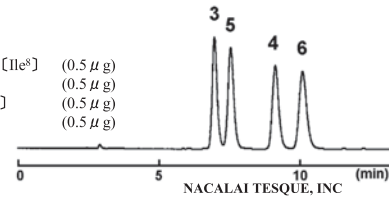
Sample: 1; Melamine (0.1 µg)
2; Ammeline (0.075 µg)
3; Cyanuric Acid (0.75 µg)
4; Ammelide (0.05 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate
buffer(pH7.0) = 70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220nm

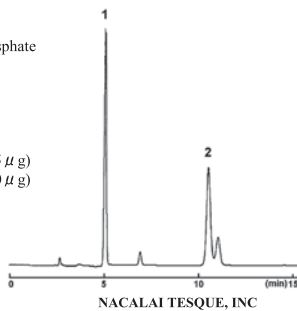
Sample: 3; Angiotensin II, Des-Asp1-[Ile⁸] (0.5 µg)
4; Angiotensin II, [Sar¹,Ile⁸] (0.5 µg)
5; Angiotensin II, [Asn¹,Val⁵] (0.5 µg)
6; Angiotensin II, [Val³] (0.5 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate
buffer(pH7.0) = 50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210nm

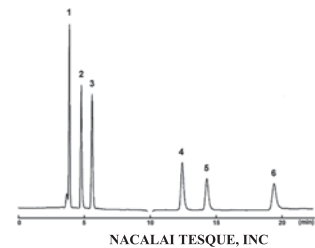
Sample: 1; Ascorbic Acid (1.5 µg)
2; Malic Acid (3.0 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 100mmol/l Ammonium
Acetate = 80/20
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220nm

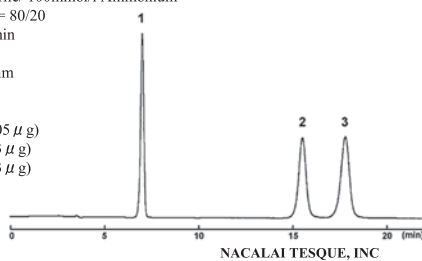
Sample: 1; Nicotinamide (0.125 µg)
2; Pyridoxine(Vitamin B₆) (0.25 µg)
3; Riboflavin (Vitamin B₂) (0.25 µg)
4; Nicotinic Acid (0.125 µg)
5; D-Pantothenic Acid (3.125 µg)
6; L(+)-Ascorbic Acid (0.875 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 100mmol/l Ammonium
Acetate = 80/20
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254nm

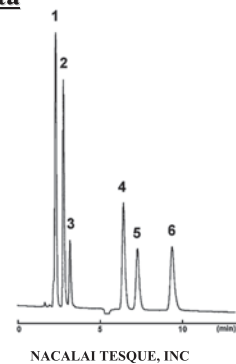
Sample: 1; Sorbic Acid (0.05 µg)
2; Isoascorbic Acid (0.3 µg)
3; Ascorbic Acid (0.3 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 2.0mmI.D.-150mm
Mobile phase: Acetonitrile/ 100mmol/l Ammonium
Acetate = 80/20
Flow rate: 0.2 ml/min
Temperature: 30°C
Detection: UV220nm

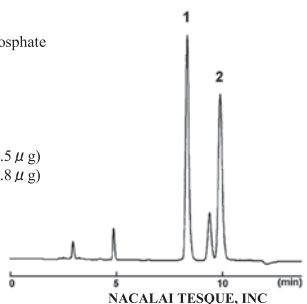
Sample: 1; Nicotinamide (0.125 µg)
2; Pyridoxine(Vitamin B₆) (0.25 µg)
3; Riboflavin (Vitamin B₂) (0.25 µg)
4; Nicotinic Acid (0.125 µg)
5; D-Pantothenic Acid (3.125 µg)
6; L(+)-Ascorbic Acid (0.875 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l Phosphate
buffer(pH7.0) = 70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210nm

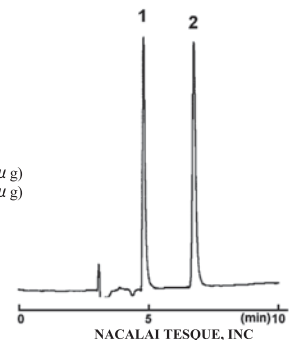
Sample: 1; L-Citrulline (7.5 µg)
2; Malic Acid (3.8 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile / H₂O = 95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

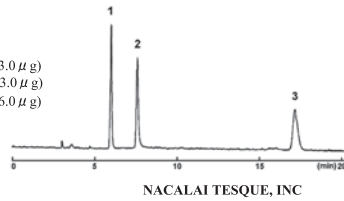
Sample: 1; Diethylene Glycol (20 µg)
2; Glycerol (20 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 50mmol/l Ammonium
Acetate = 80/20
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD

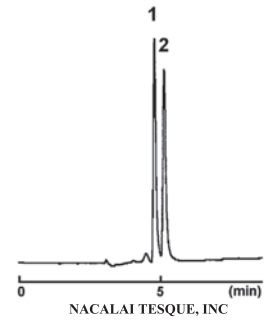
Sample:
1; *meso*-Erythritol (3.0 µg)
2; Tris(hydroxymethyl)aminomethane (3.0 µg)
3; Glyceric Acid (6.0 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ H₂O = 95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

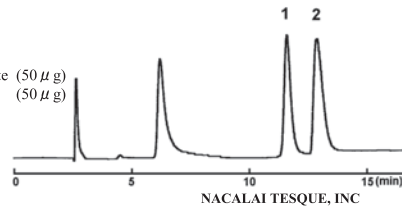
Sample: 1; Trimethylene Glycol (20 µg)
2; Ethylene Glycol (20 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l Phosphate
buffer(pH7.0) = 60/40
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

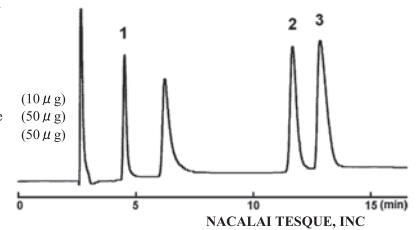
Sample:
1; *D*-Fructose -6-phosphate (50 µg)
2; *D*-Glucose-6-phosphate (50 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l Phosphate
buffer(pH7.0) = 60/40
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

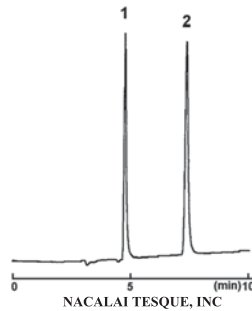
Sample:
1; Glucose (10 µg)
2; α -D-Glucose-1-phosphate (50 µg)
3; D-Glucose-6-phosphate (50 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ H₂O = 95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI

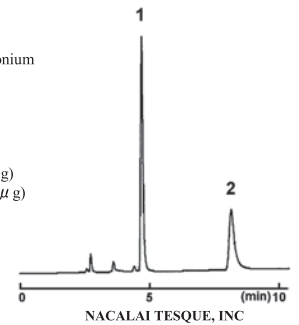
Sample: 1; Trimethylene Glycol (20 µg)
2; Glycerol (20 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium
Acetate = 60/40
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210nm

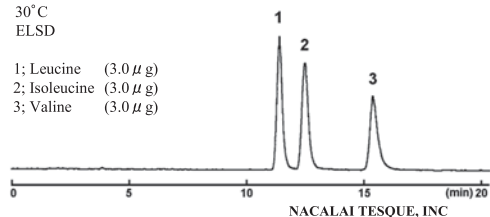
Sample: 1; Glycine (10 µg)
2; Glycylglycine (0.25 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium
Acetate = 85/15
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD

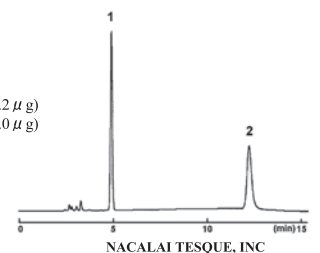
Sample: 1; Leucine (3.0 µg)
2; Isoleucine (3.0 µg)
3; Valine (3.0 µg)



COSMOSIL Application Data

Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate
buffer(pH7.0) = 50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210nm

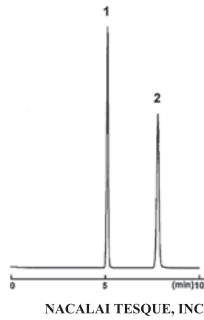
Sample: 1; Oxamic Acid (0.2 µg)
2; Oxalic Acid (1.0 µg)



COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile / H₂O = 90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV254nm

Sample: 1; Uracil (0.1 μg)
 2; Uridine (0.2 μg)

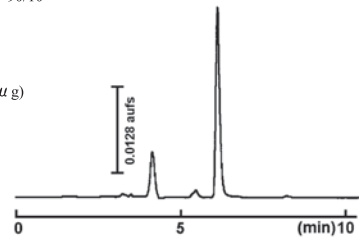


NACALAI TESQUE, INC

COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/H₂O = 90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV210nm

Sample: Urea (20 μg)

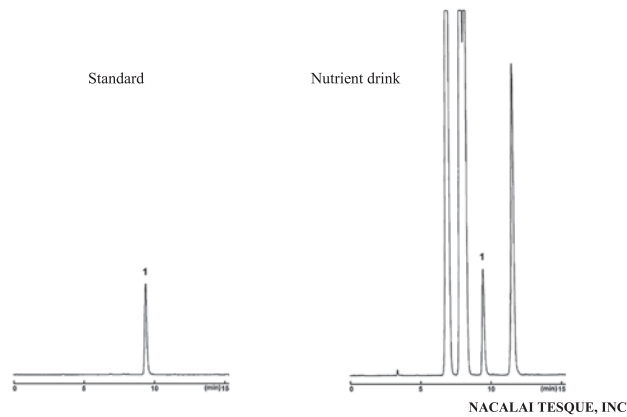


NACALAI TESQUE, INC

COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium Acetate = 80/20
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: ELSD

Sample: 1; Taurine Standard (10mg/ml)
 Injection Vol. 0.5 μl



NACALAI TESQUE, INC

COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 50mmol/l Ammonium Acetate = 90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220nm

Sample: 1; 4-Methylimidazole (0.25mg/ml)
 2; 2-Methylimidazole (0.25mg/ml)
 Inj. Vol.: 1.0 μl

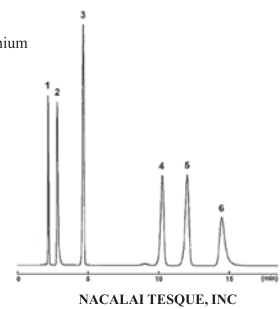


NACALAI TESQUE, INC

COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-150mm
 Mobile phase: Acetonitrile/ 50mmol/l Ammonium Acetate = 90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220nm

Sample: 1; Caffeine (0.075mg/ml)
 2; Quinine (0.075mg/ml)
 3; Saccharin (0.15mg/ml)
 4; Sorbic Acid (0.15mg/ml)
 5; Benzoic Acid (0.15mg/ml)
 6; Aspartame (0.75mg/ml)
 Inj. Vol.: 1.0 μl

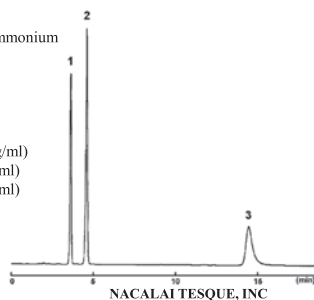


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COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-150mm
 Mobile phase: Acetonitrile/ 50mmol/l Ammonium Acetate = 90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220nm

Sample: 1; Acesulfame (0.075mg/ml)
 2; Saccharin (0.15mg/ml)
 3; Aspartame (0.75mg/ml)
 Inj. Vol.: 1.0 μl

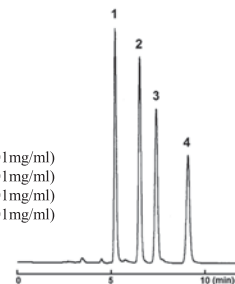


NACALAI TESQUE, INC

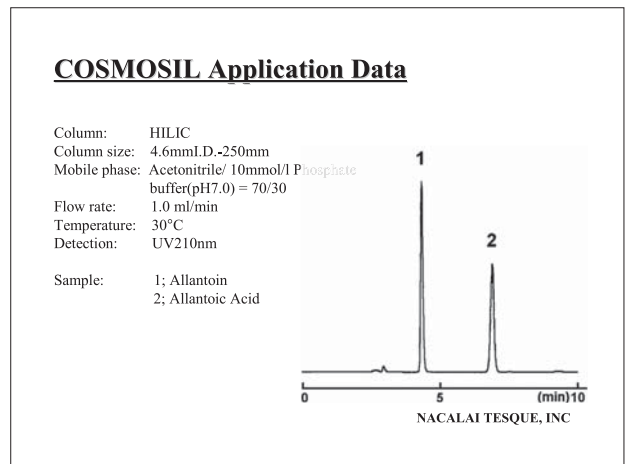
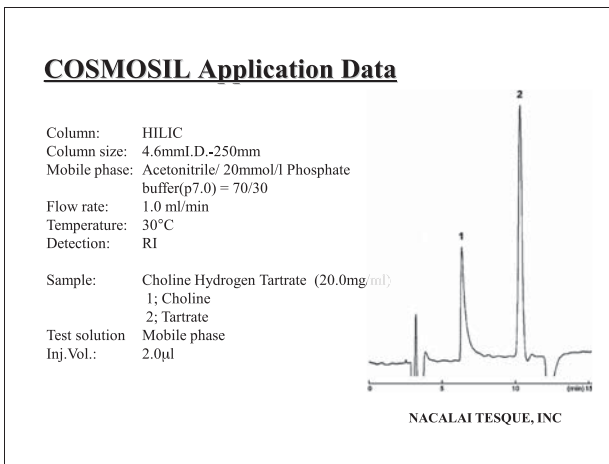
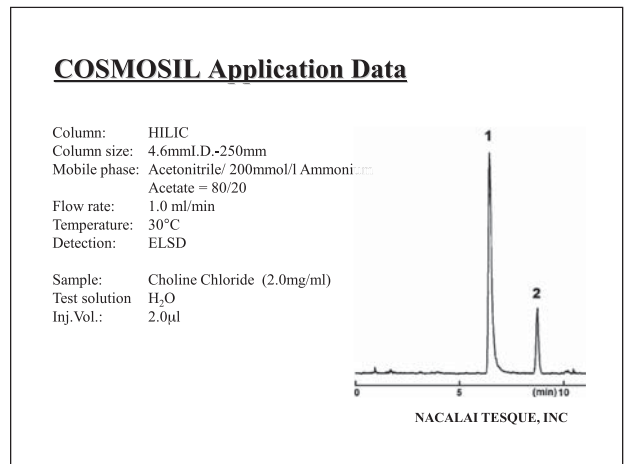
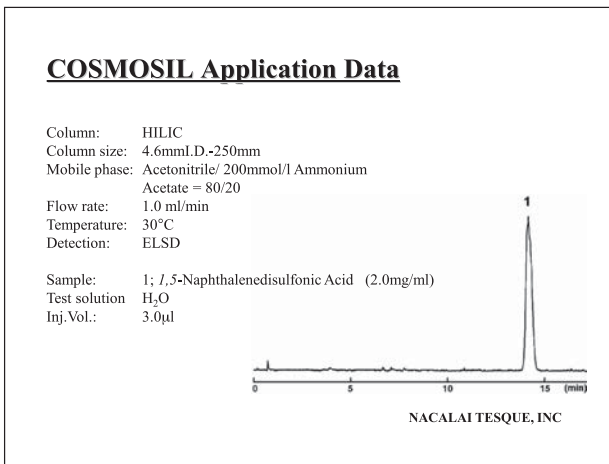
COSMOSIL Application Data

Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium Acetate = 80/20
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV249nm

Sample: 1; Creatinine (0.01mg/ml)
 2; 2'-Deoxyguanosine (0.01mg/ml)
 3; 8-Hydroxy-2'-Deoxyguanosine (0.01mg/ml)
 4; 8-Hydroxy Guanosine (0.01mg/ml)
 Inj. Vol.: 5.0 μl



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COSMOSIL Applications

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Search Result

Date	Date Name	Sample	Particle Size (µm)	Column	CAS No.
AP10381	Dichlorophenol	2,3-Dichlorophenol	5	µHAP	176-24-9
		2,4-Dichlorophenol			100-43-2
		2,5-Dichlorophenol			583-78-8
		2,6-Dichlorophenol			87-65-0

Click

COSMOSIL Application

COSMOSIL Application Data

Column: 4.6mm I.D.-150mm
 Mobile phase: Methanol/ 20mmol/l Phosphate buffer(pH7.0) = 60/40
 µHAP = 60/40
 µHAP = 60/40
 µHAP = 60/40
 µHAP = 60/40
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV210nm

Sample: 1; Phthalate (0.2 µg)
 2; Benzoate (0.2 µg)

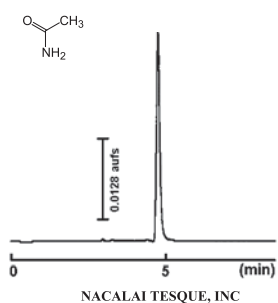
Applications are search by

1. Sample Category
2. Sample Name
3. CAS No.,
4. Column Name
5. Particle Size

Click

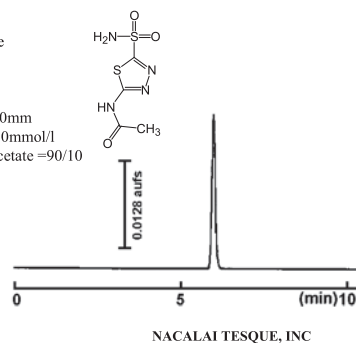
COSMOSIL Chromatogram Index

Sample: Acetamide
CAS No.: [60-35-5]
Molecular formula: C₂H₅NO
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ H₂O=95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFs
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 4.75min
Capacity factor: 0.57



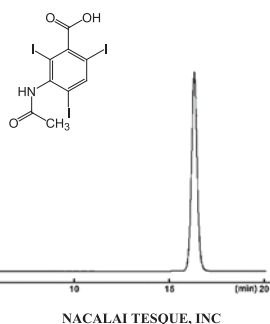
COSMOSIL Chromatogram Index

Sample: Acetazolamide
CAS No.: [59-66-5]
Molecular formula: C₄H₆N₄O₃S₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFs
Sample conc.: 0.2mg/ml
Injection volume: 0.5µl
Retention time: 5.99min
Capacity factor: 1.05



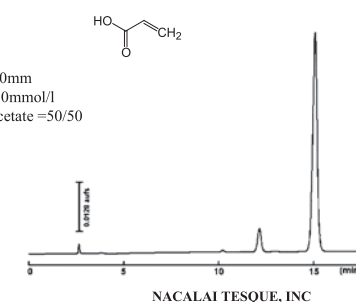
COSMOSIL Chromatogram Index

Sample: Acetizonic Acid
CAS No.: [85-36-9]
Molecular formula: C₉H₉N₃O₃
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFs
Sample conc.: 0.8mg/ml
Injection volume: 1.0µl
Retention time: 16.39min
Capacity factor: 4.76



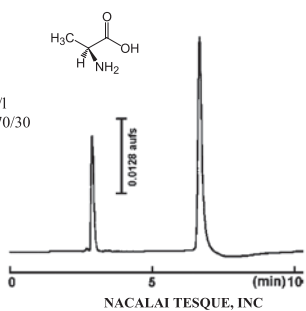
COSMOSIL Chromatogram Index

Sample: Acrylic Acid
CAS No.: [79-10-7]
Molecular formula: C₃H₄O₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFs
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 15.05min
Capacity factor: 4.28



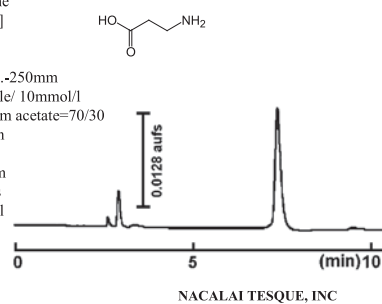
COSMOSIL Chromatogram Index

Sample: L-α-Alanine
CAS No.: [56-41-7]
Molecular formula: C₃H₇NO₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 auFs
Sample conc.: 5.0mg/ml
Injection volume: 2.0µl
Retention time: 6.67min
Capacity factor: 1.53



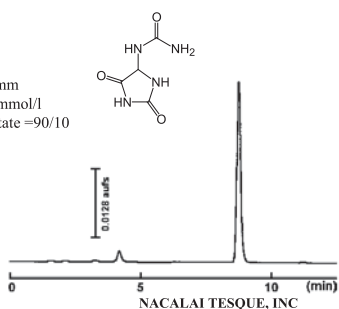
COSMOSIL Chromatogram Index

Sample: β-Alanine
CAS No.: [107-95-9]
Molecular formula: C₃H₇NO₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 auFs
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 7.38min
Capacity factor: 1.81



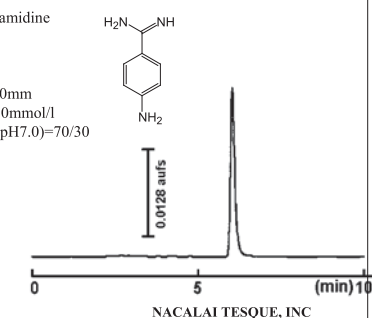
COSMOSIL Chromatogram Index

Sample: Allantoin
CAS No.: [97-59-6]
Molecular formula: C₄H₆N₄O₃
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFs
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 8.75min
Capacity factor: 2.02



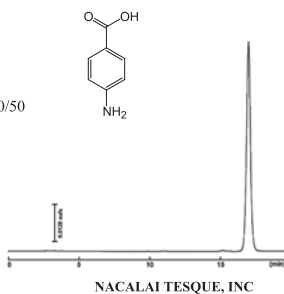
COSMOSIL Chromatogram Index

Sample: p-Aminobenzamidine
CAS No.: [3858-83-1]
Molecular formula: C₈H₉N₃
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFs
Sample conc.: 0.5mg/ml
Injection volume: 1.0µl
Retention time: 6.07min
Capacity factor: 1.31



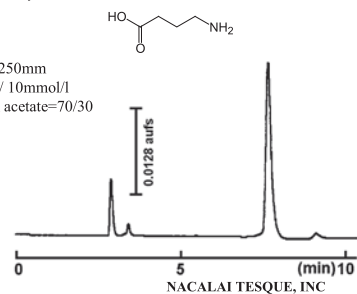
COSMOSIL Chromatogram Index

Sample: *p*-Aminobenzoic Acid
CAS No.: [150-13-0]
Molecular formula: C₇H₇NO₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 aufs
Sample conc.: 0.4mg/ml
Injection volume: 1.0µl
Retention time: 16.97min
Capacity factor: 4.91



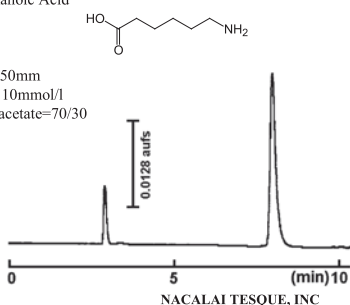
COSMOSIL Chromatogram Index

Sample: 4-Amino-*n*-butyric Acid
CAS No.: [56-12-2]
Molecular formula: C₆H₉NO₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 7.67min
Capacity factor: 1.92



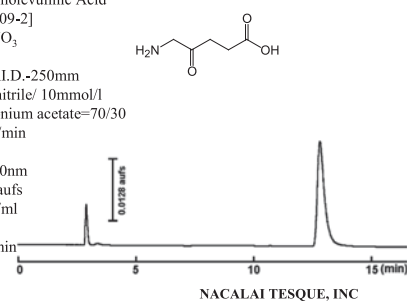
COSMOSIL Chromatogram Index

Sample: 6-Aminohexanoic Acid
CAS No.: [60-32-2]
Molecular formula: C₆H₁₃NO₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 7.98min
Capacity factor: 2.03



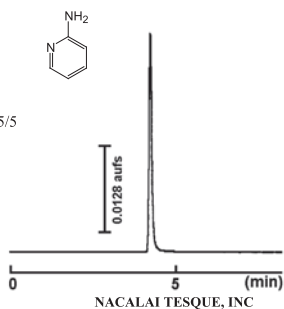
COSMOSIL Chromatogram Index

Sample: 5-Aminolevulinic Acid
CAS No.: [5451-09-2]
Molecular formula: C₅H₉NO₃
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 aufs
Sample conc.: 5.0mg/ml
Injection volume: 1.0µl
Retention time: 12.80min
Capacity factor: 3.87



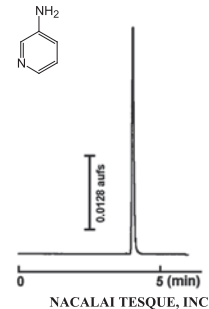
COSMOSIL Chromatogram Index

Sample: 2-Aminopyridine
CAS No.: [504-29-0]
Molecular formula: C₅H₆N₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 aufs
Sample conc.: 1.0mg/ml
Injection volume: 0.5µl
Retention time: 4.25min
Capacity factor: 0.39



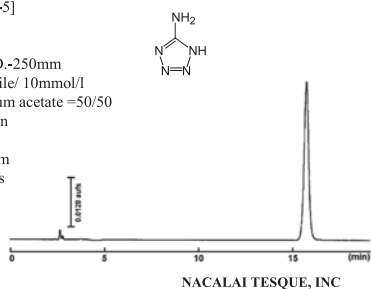
COSMOSIL Chromatogram Index

Sample: 3-Aminopyridine
CAS No.: [462-08-8]
Molecular formula: C₅H₆N₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 aufs
Sample conc.: 0.1mg/ml
Injection volume: 1.0µl
Retention time: 4.05min
Capacity factor: 0.51



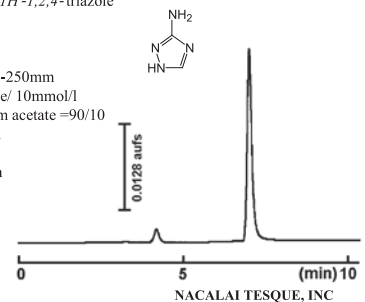
COSMOSIL Chromatogram Index

Sample: 5-Amino-*1H*-tetrazole
CAS No.: [4418-61-5]
Molecular formula: CH₃N₅
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 0.5mg/ml
Injection volume: 1.0µl
Retention time: 15.76min
Capacity factor: 4.49



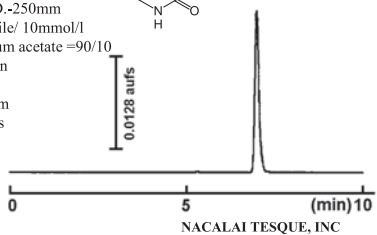
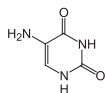
COSMOSIL Chromatogram Index

Sample: 3-Amino-*1H*-1,2,4-triazole
CAS No.: [61-82-5]
Molecular formula: C₂H₄N₄
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 0.2mg/ml
Injection volume: 1.0µl
Retention time: 7.01min
Capacity factor: 1.42



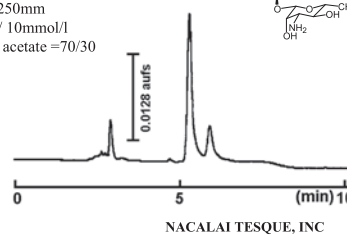
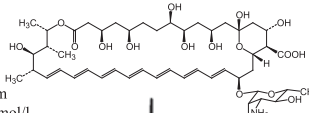
COSMOSIL Chromatogram Index

Sample: 5-Aminouracil
 CAS No.: [932-52-5]
 Molecular formula: $C_4H_4N_2O_2$
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV260 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.5mg/ml
 Injection volume: 0.5µl
 Retention time: 7.01min
 Capacity factor: 1.42



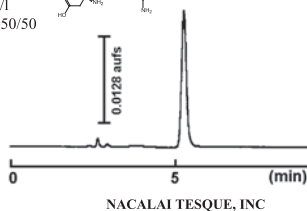
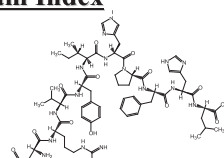
COSMOSIL Chromatogram Index

Sample: Amphotericin B
 CAS No.: [1397-89-3]
 Molecular formula: $C_{47}H_{73}NO_{17}$
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =70/30
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV210 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.25mg/ml
 Injection volume: 0.5µl
 Retention time: 5.34min
 Capacity factor: 0.99



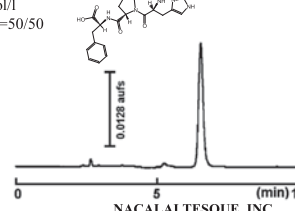
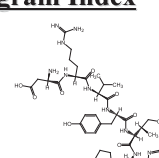
COSMOSIL Chromatogram Index

Sample: Angiotensin I(Human)
 CAS No.: [484-42-4]
 Molecular formula: $C_{62}H_{89}N_{17}O_{14}$
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.4mg/ml
 Injection volume: 0.5µl
 Retention time: 5.28min
 Capacity factor: 0.84



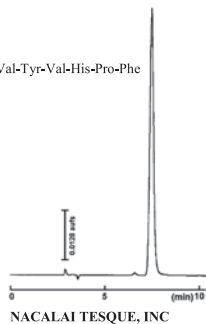
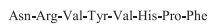
COSMOSIL Chromatogram Index

Sample: Angiotensin II(Human)
 CAS No.: [4474-91-3]
 Molecular formula: $C_{50}H_{71}N_{13}O_{12}$
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.4mg/ml
 Injection volume: 0.5µl
 Retention time: 6.56min
 Capacity factor: 1.29



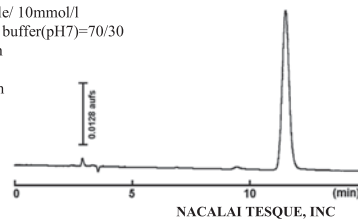
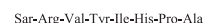
COSMOSIL Chromatogram Index

Sample: Angiotensin II,[Asn¹,Val²]
 CAS No.: [53-73-6]
 Molecular formula: $C_{46}H_{70}N_{14}O_{11}$
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=70/30
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220 nm
 Attenuation: 0.128 auFS
 Sample conc.: 1.0mg/ml
 Injection volume: 1.0µl
 Retention time: 7.48min
 Capacity factor: 1.85



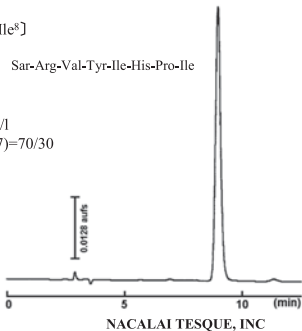
COSMOSIL Chromatogram Index

Sample: Angiotensin II,[Sar¹,Ala⁸]
 CAS No.: [38027-95-1]
 Molecular formula: $C_{43}H_{67}N_{13}O_{10}$
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=70/30
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220 nm
 Attenuation: 0.128 auFS
 Sample conc.: 1.0mg/ml
 Injection volume: 1.0µl
 Retention time: 11.57min
 Capacity factor: 3.41



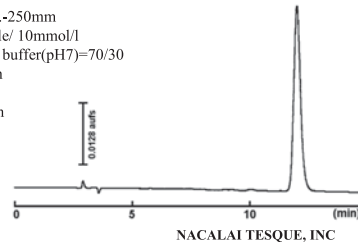
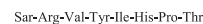
COSMOSIL Chromatogram Index

Sample: Angiotensin II,[Sar¹,Ile⁸]
 CAS No.: [37827-06-8]
 Molecular formula: $C_{46}H_{73}N_{13}O_{10}$
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=70/30
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220 nm
 Attenuation: 0.128 auFS
 Sample conc.: 1.0mg/ml
 Injection volume: 1.0µl
 Retention time: 9.02min
 Capacity factor: 2.44



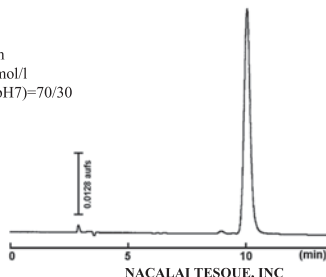
COSMOSIL Chromatogram Index

Sample: Angiotensin II,[Sar¹,Thr⁸]
 CAS No.: [53632-49-8]
 Molecular formula: $C_{44}H_{69}N_{13}O_{11}$
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=70/30
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220 nm
 Attenuation: 0.128 auFS
 Sample conc.: 1.0mg/ml
 Injection volume: 1.0µl
 Retention time: 12.04min
 Capacity factor: 3.59



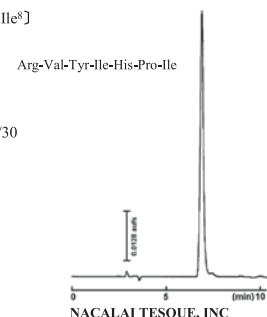
COSMOSIL Chromatogram Index

Sample: Angiotensin II, [Val⁸] Asp-Arg-Val-Tyr-Val-His-Pro-Phe
CAS No.: [58-49-1]
Molecular formula: C₄₉H₆₉N₁₃O₁₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 10.08min
Capacity factor: 2.85



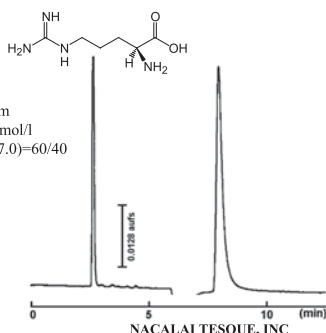
COSMOSIL Chromatogram Index

Sample: Angiotensin II, Des-Asp¹-[Ile⁸] Arg-Val-Tyr-Ile-His-Pro-Ile
CAS No.: [52498-25-6]
Molecular formula: C₄₃H₆₈N₁₂O₆
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 6.89min
Capacity factor: 1.63



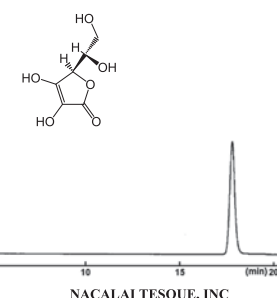
COSMOSIL Chromatogram Index

Sample: L-Arginine
CAS No.: [74-79-3]
Molecular formula: C₆H₁₄N₄O₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=60/40
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 7.97min
Capacity factor: 1.95



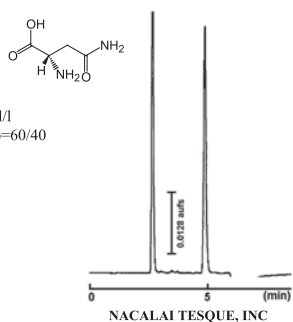
COSMOSIL Chromatogram Index

Sample: L(+)-Ascorbic Acid
CAS No.: [50-81-7]
Molecular formula: C₆H₈O₆
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV245nm
Attenuation: 0.128 auFS
Sample conc.: 0.2mg/ml
Injection volume: 3.0µl
Retention time: 17.80min
Capacity factor: 5.31



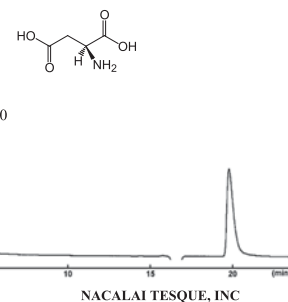
COSMOSIL Chromatogram Index

Sample: L-Asparagine
CAS No.: [70-47-3]
Molecular formula: C₄H₈N₂O₃
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=60/40
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 5.0mg/ml
Injection volume: 1.0µl
Retention time: 4.88min
Capacity factor: 0.80



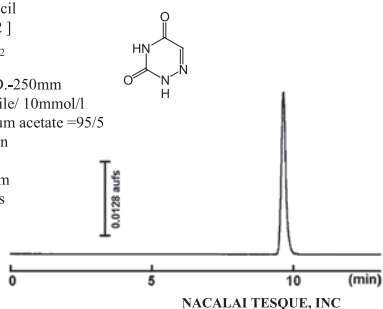
COSMOSIL Chromatogram Index

Sample: L-Aspartic Acid
CAS No.: [56-84-8]
Molecular formula: C₄H₇NO₄
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 19.79min
Capacity factor: 6.01



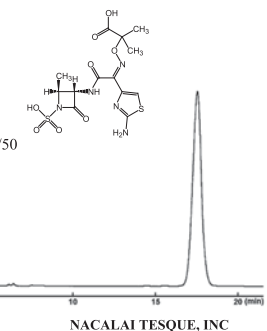
COSMOSIL Chromatogram Index

Sample: 6-Azauracil
CAS No.: [461-89-2]
Molecular formula: C₃H₃N₃O₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV260 nm
Attenuation: 0.128 auFS
Sample conc.: 0.3mg/ml
Injection volume: 0.5µl
Retention time: 9.65min
Capacity factor: 2.19



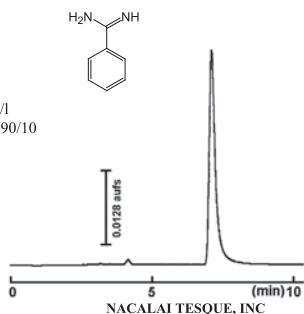
COSMOSIL Chromatogram Index

Sample: Aztreonam
CAS No.: [78110-38-0]
Molecular formula: C₁₃H₁₇N₅O₈S₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV280 nm
Attenuation: 0.128 auFS
Sample conc.: 2.5mg/ml
Injection volume: 1.0µl
Retention time: 17.57min
Capacity factor: 5.18



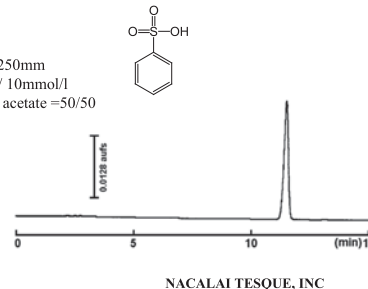
COSMOSIL Chromatogram Index

Sample: Benzamidine
CAS No.: [618-39-3]
Molecular formula: $C_9H_{10}N_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 1.5mg/ml
Injection volume: 0.5µl
Retention time: 7.16min
Capacity factor: 1.46



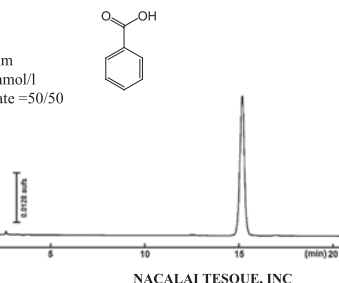
COSMOSIL Chromatogram Index

Sample: Benzenesulfonic Acid
CAS No.: [98-11-3]
Molecular formula: $C_6H_5O_3S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 5.0mg/ml
Injection volume: 1.0µl
Retention time: 11.54min
Capacity factor: 3.05



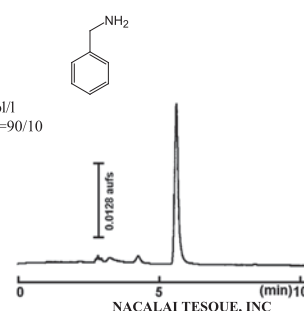
COSMOSIL Chromatogram Index

Sample: Benzoic Acid
CAS No.: [65-85-0]
Molecular formula: $C_7H_6O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 5.0mg/ml
Injection volume: 0.5µl
Retention time: 15.19min
Capacity factor: 4.29



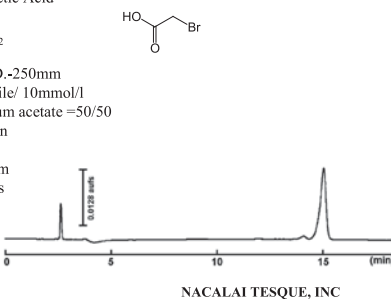
COSMOSIL Chromatogram Index

Sample: Benzylamine
CAS No.: [100-46-9]
Molecular formula: C_7H_9N
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 50mmol/l
Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 0.5µl
Retention time: 5.58min
Capacity factor: 0.95



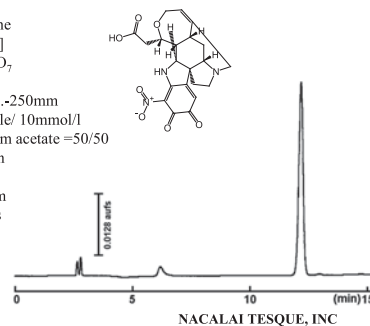
COSMOSIL Chromatogram Index

Sample: Bromoacetic Acid
CAS No.: [79-08-3]
Molecular formula: $C_2H_3BrO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 15.04min
Capacity factor: 4.31



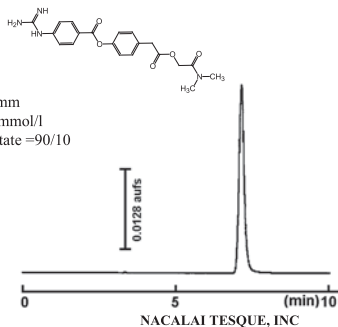
COSMOSIL Chromatogram Index

Sample: Cacotheine
CAS No.: [561-20-6]
Molecular formula: $C_{21}H_{21}N_3O_7$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 12.19min
Capacity factor: 3.23



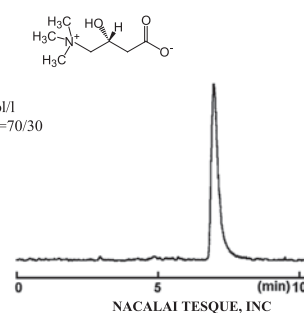
COSMOSIL Chromatogram Index

Sample: Camostat
CAS No.: [59721-28-7]
Molecular formula: $C_{20}H_{22}N_4O_5$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV265 nm
Attenuation: 0.128 auFS
Sample conc.: 0.5mg/ml
Injection volume: 0.5µl
Retention time: 7.16min
Capacity factor: 1.47



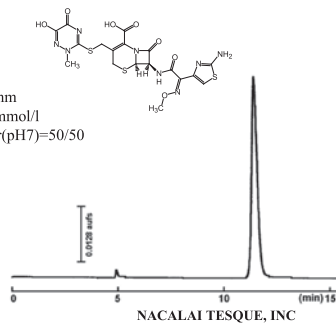
COSMOSIL Chromatogram Index

Sample: L-Carnitine
CAS No.: [541-15-1]
Molecular formula: $C_7H_{15}NO_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Attenuation: Gain=6, Atten=8
Sample conc.: 2.0mg/ml
Injection volume: 1.5µl
Retention time: 6.96min
Capacity factor: 1.78



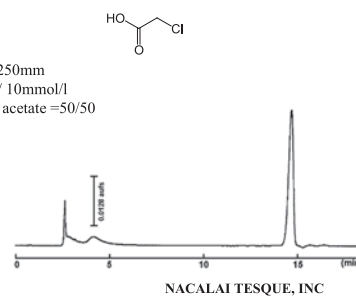
COSMOSIL Chromatogram Index

Sample: Ceftriaxone
CAS No.: [73384-59-5]
Molecular formula: $C_{15}H_{18}N_6O_7S_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 aufs
Sample conc.: 0.5mg/ml
Injection volume: 1.0µl
Retention time: 11.36min
Capacity factor: 3.05



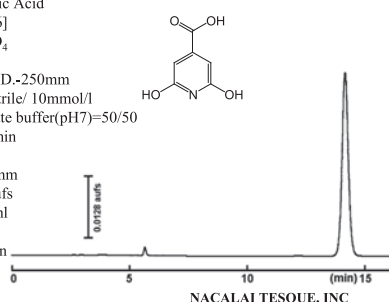
COSMOSIL Chromatogram Index

Sample: Chloroacetic Acid
CAS No.: [79-11-8]
Molecular formula: $C_2H_3ClO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 14.69min
Capacity factor: 4.15



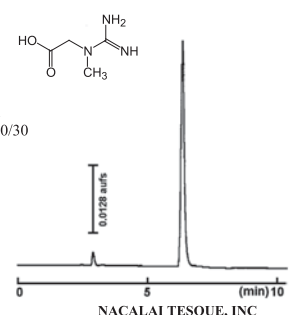
COSMOSIL Chromatogram Index

Sample: Citrazinic Acid
CAS No.: [99-11-6]
Molecular formula: $C_6H_5NO_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 0.5mg/ml
Injection volume: 0.5µl
Retention time: 14.16min
Capacity factor: 3.98



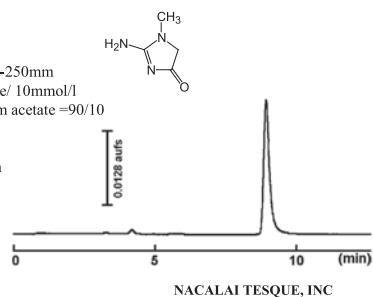
COSMOSIL Chromatogram Index

Sample: Creatine
CAS No.: [57-00-1]
Molecular formula: $C_4H_9N_3O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 6.35min
Capacity factor: 1.40



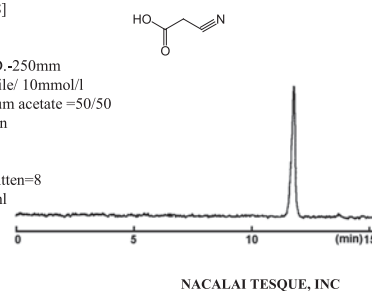
COSMOSIL Chromatogram Index

Sample: Creatinine
CAS No.: [60-27-5]
Molecular formula: $C_4H_7N_3O$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 0.5mg/ml
Injection volume: 0.5µl
Retention time: 8.93min
Capacity factor: 2.08



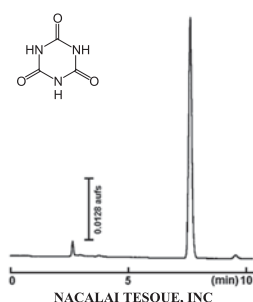
COSMOSIL Chromatogram Index

Sample: Cyanoacetic Acid
CAS No.: [372-09-8]
Molecular formula: $C_3H_3NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Attenuation: Gain=6, Atten=8
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 11.78min
Capacity factor: 3.56



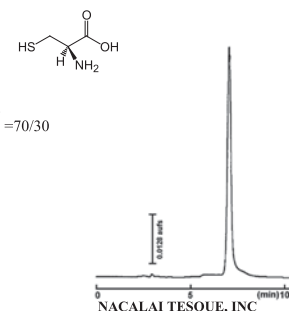
COSMOSIL Chromatogram Index

Sample: Cyanuric Acid
CAS No.: [108-80-5]
Molecular formula: $C_3H_3N_3O_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 0.5mg/ml
Injection volume: 1.0µl
Retention time: 7.61min
Capacity factor: 1.68



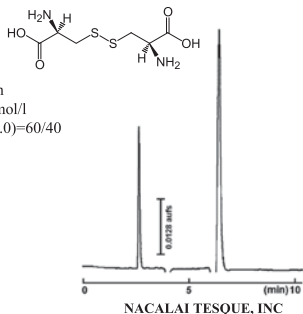
COSMOSIL Chromatogram Index

Sample: L-Cysteine
CAS No.: [52-90-4]
Molecular formula: $C_3H_7NO_2S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l
Phosphate buffer(pH7) =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 5.0mg/ml
Injection volume: 2.0µl
Retention time: 7.05min
Capacity factor: 1.69



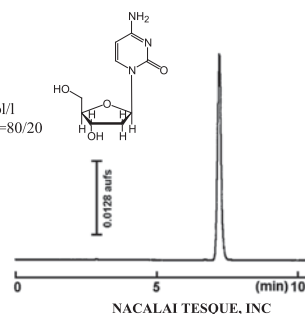
COSMOSIL Chromatogram Index

Sample: L-(-)-Cystine
 CAS No.: [56-89-3]
 Molecular formula: C₆H₁₂N₂O₄S₂
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=60/40
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV210 nm
 Attenuation: 0.128 auFS
 Sample conc.: 5.0mg/ml
 Injection volume: 0.5µl
 Retention time: 6.42min
 Capacity factor: 1.38



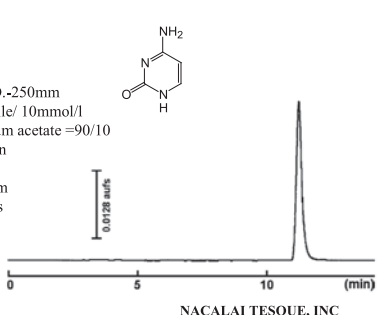
COSMOSIL Chromatogram Index

Sample: Cytidine
 CAS No.: [65-46-3]
 Molecular formula: C₉H₁₃N₃O₅
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =80/20
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV260 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.5mg/ml
 Injection volume: 0.5µl
 Retention time: 7.22min
 Capacity factor: 1.58



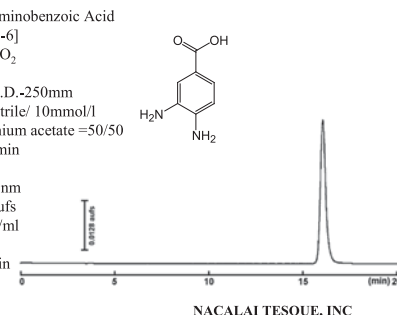
COSMOSIL Chromatogram Index

Sample: Cytosine
 CAS No.: [71-30-7]
 Molecular formula: C₄H₅N₃O
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV260 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.5mg/ml
 Injection volume: 0.5µl
 Retention time: 11.22min
 Capacity factor: 2.87



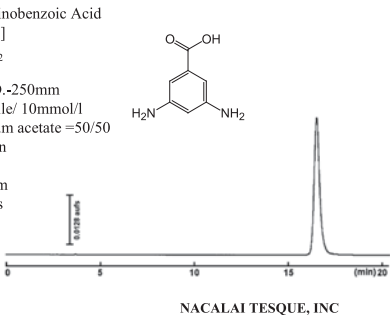
COSMOSIL Chromatogram Index

Sample: 3,4-Diaminobenzoic Acid
 CAS No.: [619-05-6]
 Molecular formula: C₇H₇N₂O₂
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV254 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.10mg/ml
 Injection volume: 4.0µl
 Retention time: 16.13min
 Capacity factor: 4.62



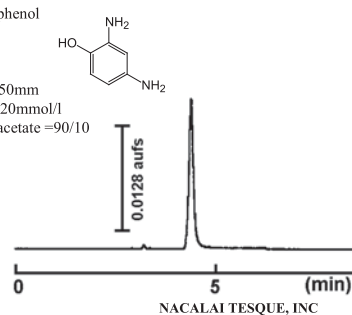
COSMOSIL Chromatogram Index

Sample: 3,5-Diaminobenzoic Acid
 CAS No.: [535-87-5]
 Molecular formula: C₇H₇N₂O₂
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV254 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.1mg/ml
 Injection volume: 4.0µl
 Retention time: 16.54min
 Capacity factor: 4.76



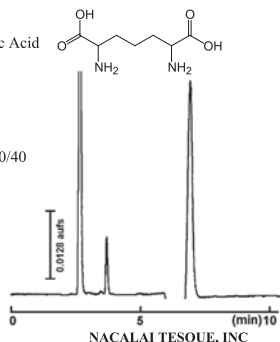
COSMOSIL Chromatogram Index

Sample: 2,4-Diaminophenol
 CAS No.: [95-86-3]
 Molecular formula: C₆H₇N₂O
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 20mmol/l Ammonium acetate =90/10
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV254 nm
 Attenuation: 0.128 auFS
 Sample conc.: 0.5mg/ml
 Injection volume: 0.5µl
 Retention time: 4.40min
 Capacity factor: 0.51



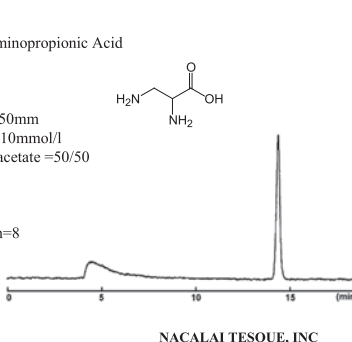
COSMOSIL Chromatogram Index

Sample: DL-2,6-Diaminopimelic Acid
 CAS No.: [583-93-7]
 Molecular formula: C₇H₁₄N₂O₄
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=60/40
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV210 nm
 Attenuation: 0.128 auFS
 Sample conc.: 10.0mg/ml
 Injection volume: 1.5µl
 Retention time: 6.93min
 Capacity factor: 1.56



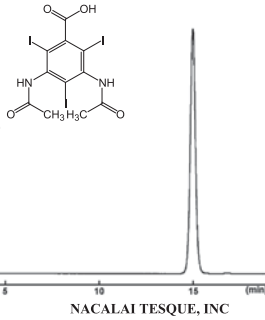
COSMOSIL Chromatogram Index

Sample: DL-2,3-Diaminopropionic Acid
 CAS No.: [54897-59-5]
 Molecular formula: C₃H₆N₂O₂
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: ELSD
 Attenuation: Gain=6, Atten=8
 Sample conc.: 5.0mg/ml
 Injection volume: 2.0µl
 Retention time: 14.38min
 Capacity factor: 4.52



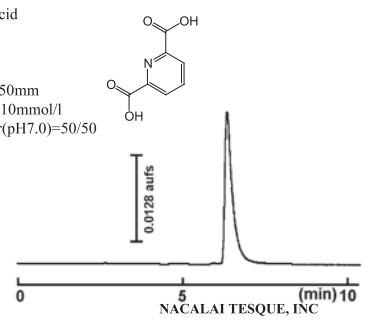
COSMOSIL Chromatogram Index

Sample: Diatrizoic Acid
CAS No.: [117-96-4]
Molecular formula: $C_7H_5I_3N_2O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 0.8mg/ml
Injection volume: 1.0µl
Retention time: 14.98min
Capacity factor: 4.26



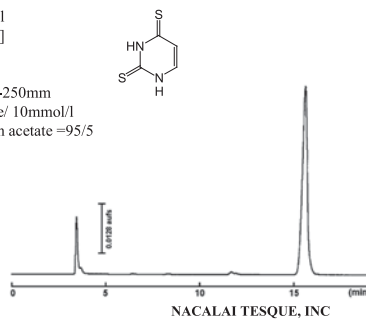
COSMOSIL Chromatogram Index

Sample: Dipicolinic acid
CAS No.: [499-83-2]
Molecular formula: $C_6H_5NO_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 0.5mg/ml
Injection volume: 1.0µl
Retention time: 6.37min
Capacity factor: 1.23



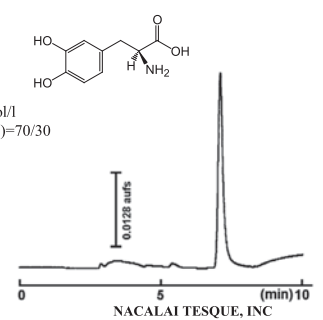
COSMOSIL Chromatogram Index

Sample: Dithiouracil
CAS No.: [2001-93-6]
Molecular formula: $C_4H_3N_2S_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV260 nm
Attenuation: 0.128 au/s
Sample conc.: 0.2mg/ml
Injection volume: 1.5µl
Retention time: 15.60min
Capacity factor: 4.15



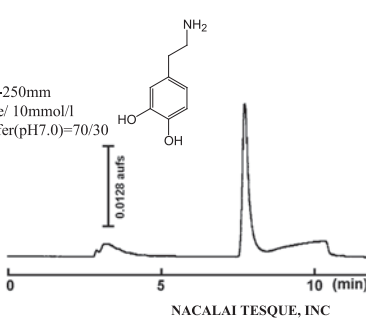
COSMOSIL Chromatogram Index

Sample: L-DOPA
CAS No.: [59-92-7]
Molecular formula: $C_9H_9NO_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 3.0mg/ml
Injection volume: 3.0µl
Retention time: 7.12min
Capacity factor: 1.72



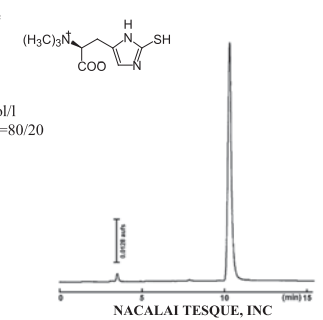
COSMOSIL Chromatogram Index

Sample: Dopamine
CAS No.: [51-61-6]
Molecular formula: $C_8H_{11}NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 1.0mg/ml
Injection volume: 4.0µl
Retention time: 7.73min
Capacity factor: 1.96



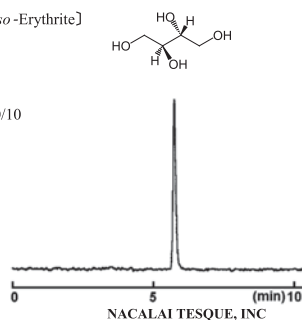
COSMOSIL Chromatogram Index

Sample: L-(+)-Ergothioneine
CAS No.: [497-30-3]
Molecular formula: $C_8H_{13}N_3O_2S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =80/20
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 au/s
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 10.29min
Capacity factor: 2.79



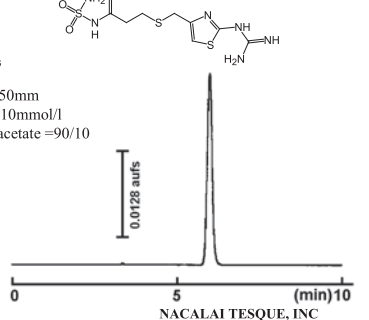
COSMOSIL Chromatogram Index

Sample: meso-Erythritol [meso-Erythrite]
CAS No.: [149-32-6]
Molecular formula: $C_4H_{10}O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ H_2O =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Attenuation: Gain=6, Atten=8
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 5.78min
Capacity factor: 1.18



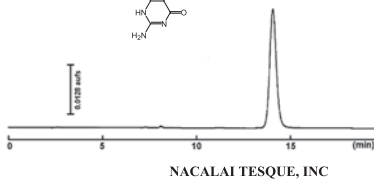
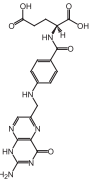
COSMOSIL Chromatogram Index

Sample: Famotidin
CAS No.: [76824-35-6]
Molecular formula: $C_8H_{13}N_5O_2S_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 0.25mg/ml
Injection volume: 2.0µl
Retention time: 5.99min
Capacity factor: 1.06



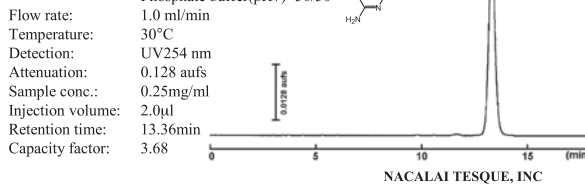
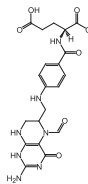
COSMOSIL Chromatogram Index

Sample: Folic Acid
CAS No.: [59-30-3]
Molecular formula: $C_{19}H_{19}N_7O_6$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 0.25mg/ml
Injection volume: 2.0µl
Retention time: 14.09min
Capacity factor: 3.95



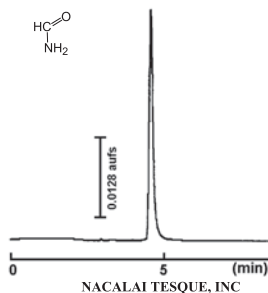
COSMOSIL Chromatogram Index

Sample: Folic Acid
CAS No.: [58-05-9]
Molecular formula: $C_{20}H_{23}N_7O_7$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 0.25mg/ml
Injection volume: 2.0µl
Retention time: 13.36min
Capacity factor: 3.68



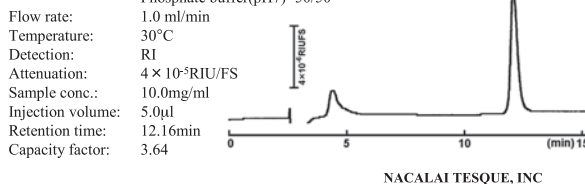
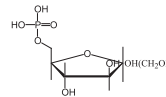
COSMOSIL Chromatogram Index

Sample: Formamide
CAS No.: [75-12-7]
Molecular formula: CH_3NO
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ $H_2O=95/5$
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 au/s
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 4.58min
Capacity factor: 0.52



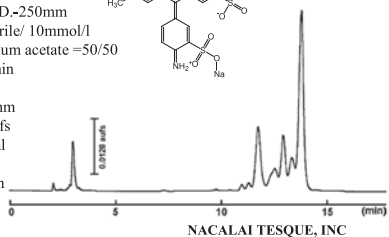
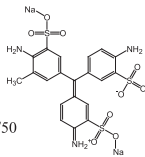
COSMOSIL Chromatogram Index

Sample: D-Fructose-6-phosphate
CAS No.: [643-13-0]
Molecular formula: $C_6H_{13}O_5P$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI
Attenuation: 4×10^{-5} RIU/FS
Sample conc.: 10.0mg/ml
Injection volume: 5.0µl
Retention time: 12.16min
Capacity factor: 3.64



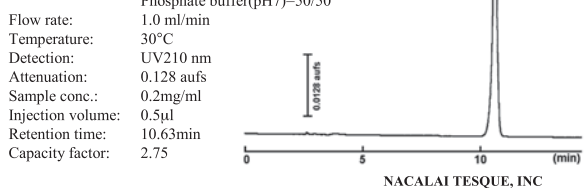
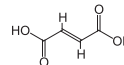
COSMOSIL Chromatogram Index

Sample: Fuchsine, Acid
CAS No.: [3244-88-0]
Molecular formula: $C_{20}H_{17}N_3Na_2O_9S_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 5.0mg/ml
Injection volume: 1.5µl
Retention time: 13.82min
Capacity factor: 3.85



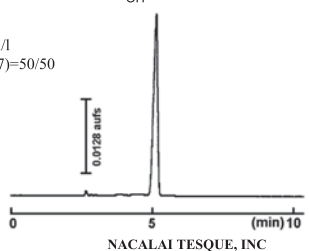
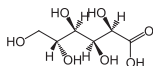
COSMOSIL Chromatogram Index

Sample: Fumaric Acid
CAS No.: [110-17-8]
Molecular formula: $C_4H_4O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 au/s
Sample conc.: 0.2mg/ml
Injection volume: 0.5µl
Retention time: 10.63min
Capacity factor: 2.75



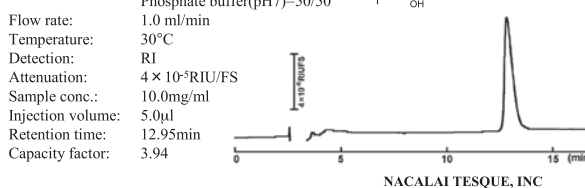
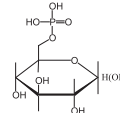
COSMOSIL Chromatogram Index

Sample: Gluconic Acid
CAS No.: [526-95-4]
Molecular formula: $C_6H_{12}O_7$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 au/s
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 5.15min
Capacity factor: 0.81



COSMOSIL Chromatogram Index

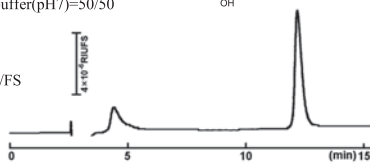
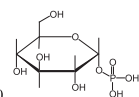
Sample: D-Glucose-6-phosphate
CAS No.: [56-73-5]
Molecular formula: $C_6H_{13}O_5P$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI
Attenuation: 4×10^{-5} RIU/FS
Sample conc.: 10.0mg/ml
Injection volume: 5.0µl
Retention time: 12.95min
Capacity factor: 3.94



COSMOSIL Chromatogram Index

Sample: α -D-Glucose-1-phosphate
CAS No.: [59-56-3]
Molecular formula: $C_6H_{13}O_9P$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50

Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI
Attenuation: 4×10^{-5} RIU/FS
Sample conc.: 10.0mg/ml
Injection volume: 5.0 μ l
Retention time: 12.26min
Capacity factor: 3.68

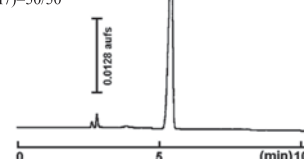
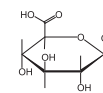


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COSMOSIL Chromatogram Index

Sample: D-Glucuronic Acid
CAS No.: [6556-12-3]
Molecular formula: $C_6H_{10}O_7$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50

Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 1.0 μ l
Retention time: 5.45min
Capacity factor: 0.92

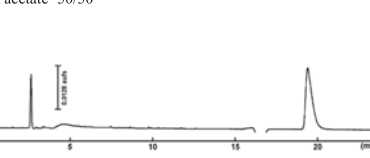
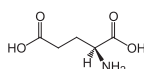


NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

Sample: L-Glutamic Acid
CAS No.: [56-86-0]
Molecular formula: $C_5H_9NO_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=50/50

Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 2.0 μ l
Retention time: 19.38min
Capacity factor: 5.87

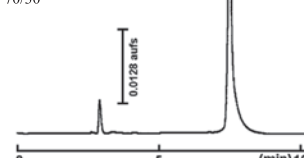
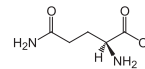


NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

Sample: L-Glutamine
CAS No.: [56-85-9]
Molecular formula: $C_5H_{11}N_2O_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30

Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 0.5 μ l
Retention time: 7.50min
Capacity factor: 1.85

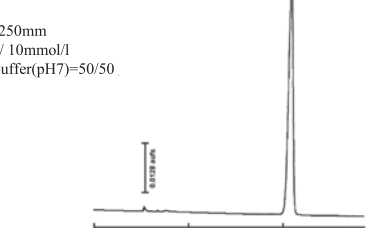
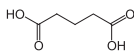


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COSMOSIL Chromatogram Index

Sample: Glutaric Acid
CAS No.: [110-94-1]
Molecular formula: $C_5H_8O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50

Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 1.0 μ l
Retention time: 10.45min
Capacity factor: 2.68

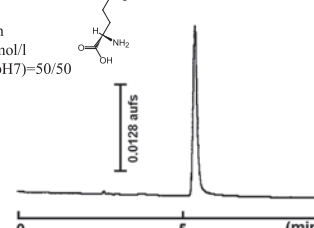
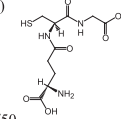


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COSMOSIL Chromatogram Index

Sample: Glutathione(Reduced Form)
CAS No.: [70-18-8]
Molecular formula: $C_{10}H_{17}N_3O_6S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50

Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 1.0mg/ml
Injection volume: 2.0 μ l
Retention time: 5.43min
Capacity factor: 0.89

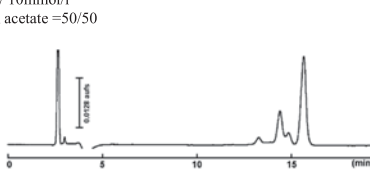
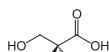


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COSMOSIL Chromatogram Index

Sample: DL-Glyceric Acid
CAS No.: [600-19-1]
Molecular formula: $C_3H_6O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50

Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 6.0mg/ml
Injection volume: 5.0 μ l
Retention time: 15.68min
Capacity factor: 4.50

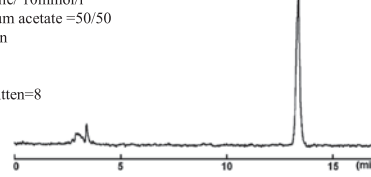


NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

Sample: Glycinamide
CAS No.: [598-41-4]
Molecular formula: $C_2H_5N_2O$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50

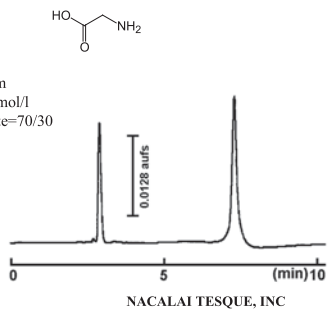
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Attenuation: Gain=6, Atten=8
Sample conc.: 1.0mg/ml
Injection volume: 3.0 μ l
Retention time: 13.35min
Capacity factor: 3.64



NACALAI TESQUE, INC

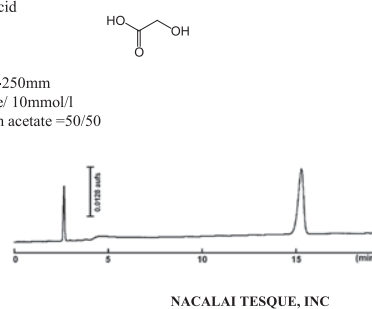
COSMOSIL Chromatogram Index

Sample: Glycine
CAS No.: [56-40-6]
Molecular formula: $C_2H_5NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 5.0mg/ml
Injection volume: 2.0µl
Retention time: 7.29min
Capacity factor: 1.77



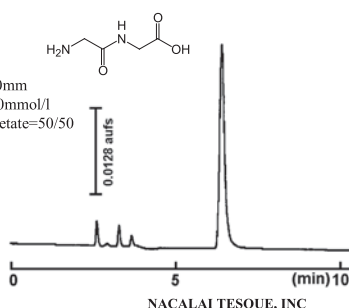
COSMOSIL Chromatogram Index

Sample: Glycolic Acid
CAS No.: [79-14-1]
Molecular formula: $C_2H_4O_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 15.28min
Capacity factor: 4.39



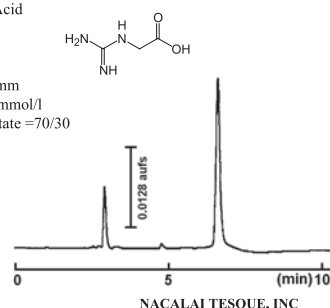
COSMOSIL Chromatogram Index

Sample: Glycylglycine
CAS No.: [556-50-3]
Molecular formula: $C_4H_8N_2O_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 0.5µl
Retention time: 6.40min
Capacity factor: 1.27



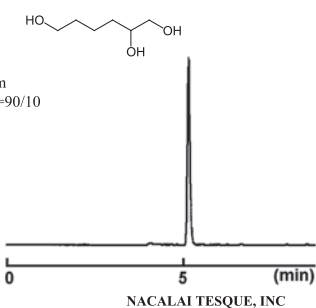
COSMOSIL Chromatogram Index

Sample: Guanidoacetic Acid
CAS No.: [352-97-6]
Molecular formula: $C_3H_6N_2O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 0.5mg/ml
Injection volume: 1.0µl
Retention time: 6.61min
Capacity factor: 1.51



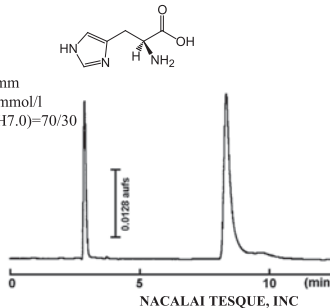
COSMOSIL Chromatogram Index

Sample: 1,2,6-Hexanetriol
CAS No.: [106-69-4]
Molecular formula: $C_6H_{14}O_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ H_2O =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Gain=6, Atten=8
Sample conc.: 1.0mg/ml
Injection volume: 2.0µl
Retention time: 5.19min
Capacity factor: 0.80



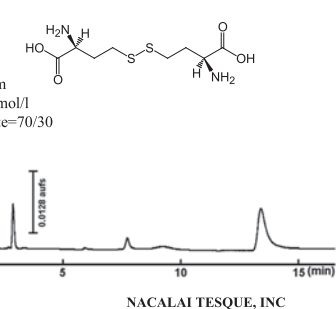
COSMOSIL Chromatogram Index

Sample: L-Histidine
CAS No.: [71-00-1]
Molecular formula: $C_6H_9N_3O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Citrate buffer(pH7.0)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 0.50mg/ml
Injection volume: 1.0µl
Retention time: 8.38min
Capacity factor: 2.19



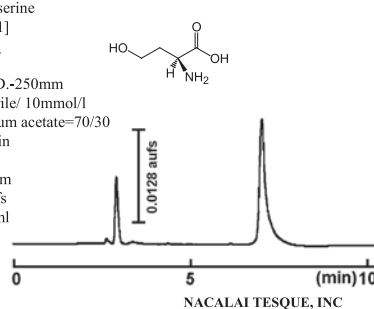
COSMOSIL Chromatogram Index

Sample: L-Homocysteine
CAS No.: [626-72-2]
Molecular formula: $C_8H_{16}N_2O_4S_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 auFS
Sample conc.: 2.0mg/ml
Injection volume: 1.0µl
Retention time: 13.41min
Capacity factor: 4.10



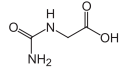
COSMOSIL Chromatogram Index

Sample: L-Homoserine
CAS No.: [672-15-1]
Molecular formula: $C_4H_9NO_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 7.03min
Capacity factor: 1.67

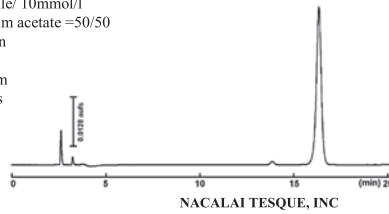


COSMOSIL Chromatogram Index

Sample: Hydatoic Acid
CAS No.: [462-60-2]
Molecular formula: $C_3H_5N_2O_3$
Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50



Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 au/s
Sample conc.: 5.0mg/ml
Injection volume: 1.0µl
Retention time: 16.33min
Capacity factor: 4.72

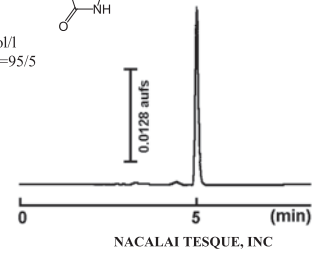


COSMOSIL Chromatogram Index

Sample: Hydatoin
CAS No.: [461-72-3]
Molecular formula: $C_3H_4N_2O_2$
Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=95/5



Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 au/s
Sample conc.: 1.0mg/ml
Injection volume: 0.5µl
Retention time: 5.01min
Capacity factor: 0.66

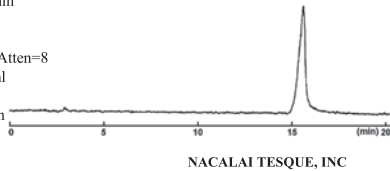


COSMOSIL Chromatogram Index

Sample: Hydroxylamine-O-sulfonic Acid
CAS No.: [2950-43-8]
Molecular formula: H_3NO_3S
Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =70/30

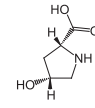


Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Attenuation: Gain=6,Atten=8
Sample conc.: 2.0mg/ml
Injection volume: 3.0µl
Retention time: 15.60min
Capacity factor: 5.24

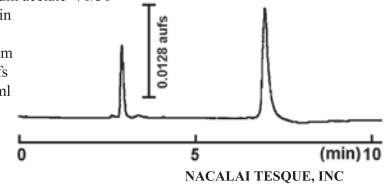


COSMOSIL Chromatogram Index

Sample: *cis*-4-Hydroxy-D-proline
CAS No.: [2584-71-6]
Molecular formula: $C_5H_9NO_3$
Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30

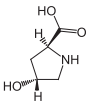


Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 au/s
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 6.96min
Capacity factor: 1.65

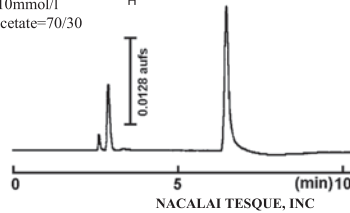


COSMOSIL Chromatogram Index

Sample: *L*-Hydroxyproline
CAS No.: [51-35-4]
Molecular formula: $C_5H_9NO_3$
Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30



Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 au/s
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 6.49min
Capacity factor: 1.47

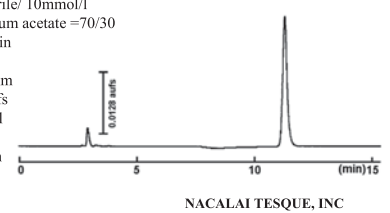


COSMOSIL Chromatogram Index

Sample: *N*-Hydroxysuccinimide
CAS No.: [6066-82-6]
Molecular formula: $C_5H_7NO_3$
Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =70/30

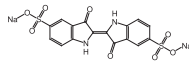


Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 au/s
Sample conc.: 0.1mg/ml
Injection volume: 1.5µl
Retention time: 11.29min
Capacity factor: 3.22

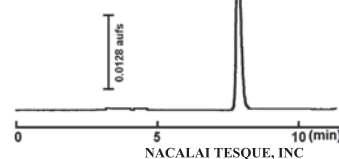


COSMOSIL Chromatogram Index

Sample: Indigo carmine
CAS No.: [860-22-0]
Molecular formula: $C_{16}H_8N_2Na_2O_8S_2$
Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50

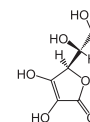


Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 au/s
Sample conc.: 0.2mg/ml
Injection volume: 1.0µl
Retention time: 7.82min
Capacity factor: 1.79

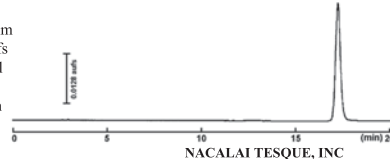


COSMOSIL Chromatogram Index

Sample: *D*-Isoascorbic Acid
CAS No.: [89-65-6]
Molecular formula: $C_6H_8O_6$
Column: HILIC
Column size: 4.6mmI.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=50/50

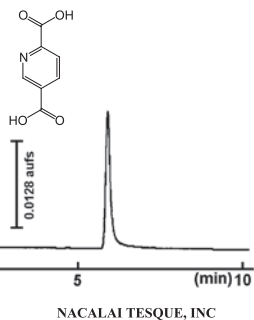


Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 245nm
Attenuation: 0.128 au/s
Sample conc.: 0.2mg/ml
Injection volume: 3.0µl
Retention time: 17.26min
Capacity factor: 5.11



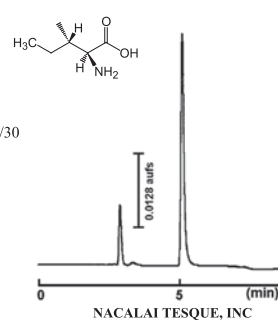
COSMOSIL Chromatogram Index

Sample: Isocinchomeronic Acid
CAS No.: [100-26-5]
Molecular formula: $C_7H_7NO_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 0.5mg/ml
Injection volume: 0.5µl
Retention time: 5.91min
Capacity factor: 1.07



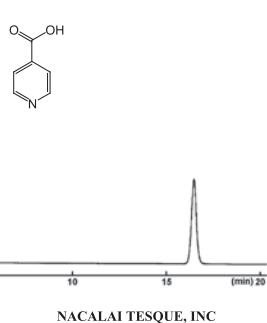
COSMOSIL Chromatogram Index

Sample: L-Isoleucine
CAS No.: [73-32-5]
Molecular formula: $C_6H_{13}NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 5.12min
Capacity factor: 0.95



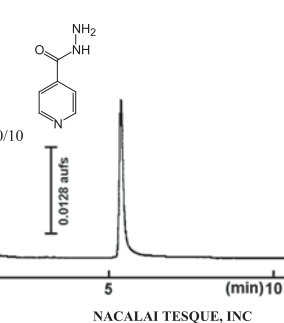
COSMOSIL Chromatogram Index

Sample: Isonicotinic Acid
CAS No.: [55-22-1]
Molecular formula: $C_6H_5NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 0.5µl
Retention time: 16.45min
Capacity factor: 4.78



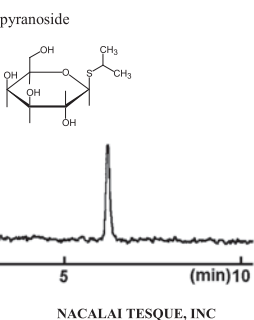
COSMOSIL Chromatogram Index

Sample: Isonicotinohydrazide
CAS No.: [54-85-3]
Molecular formula: $C_6H_7N_3O$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV265 nm
Attenuation: 0.128 auFS
Sample conc.: 0.50mg/ml
Injection volume: 0.5µl
Retention time: 5.37min
Capacity factor: 0.85



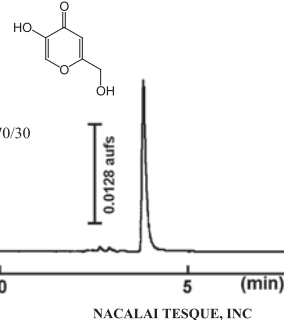
COSMOSIL Chromatogram Index

Sample: Isopropyl β-D-1-thiogalactopyranoside
CAS No.: [367-93-1]
Molecular formula: $C_9H_{18}O_5S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ H₂O=90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Attenuation: Gain=6, Atten=8
Sample conc.: 0.1mg/ml
Injection volume: 0.5µl
Retention time: 6.23min
Capacity factor: 1.15



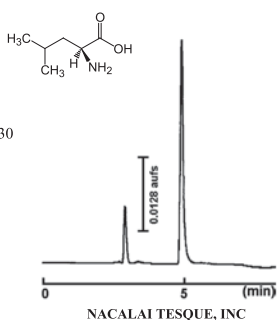
COSMOSIL Chromatogram Index

Sample: Kojic Acid
CAS No.: [501-30-4]
Molecular formula: $C_6H_6O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV245 nm
Attenuation: 0.128 auFS
Sample conc.: 0.1mg/ml
Injection volume: 1.0µl
Retention time: 3.83min
Capacity factor: 0.46



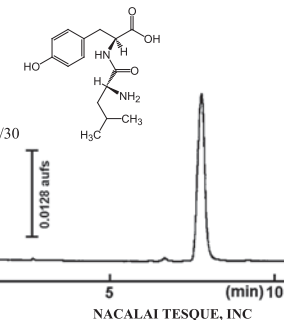
COSMOSIL Chromatogram Index

Sample: L-Leucine
CAS No.: [61-90-5]
Molecular formula: $C_6H_{13}NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 4.91min
Capacity factor: 0.87



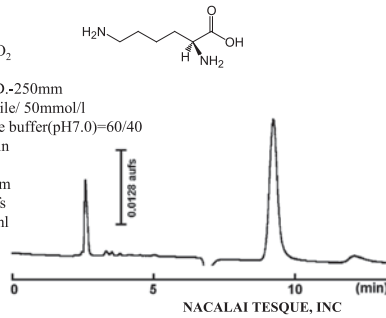
COSMOSIL Chromatogram Index

Sample: D-Leucyl-L-tyrosine
CAS No.: [3303-29-5]
Molecular formula: $C_{12}H_{22}N_2O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 254nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 7.79min
Capacity factor: 1.96



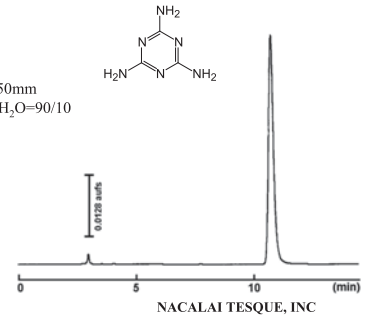
COSMOSIL Chromatogram Index

Sample: L-Lysine
CAS No.: [56-87-1]
Molecular formula: $C_6H_{11}N_2O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 50mmol/l
Phosphate buffer(pH7.0)=60/40
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 9.26min
Capacity factor: 2.55



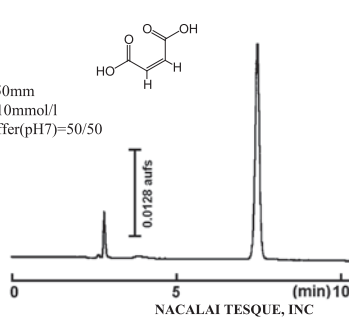
COSMOSIL Chromatogram Index

Sample: Melamine
CAS No.: [108-78-1]
Molecular formula: $C_3H_4N_6$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ H₂O=90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV240 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 10.79min
Capacity factor: 2.79



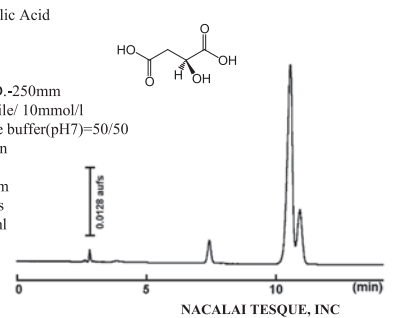
COSMOSIL Chromatogram Index

Sample: Maleic Acid
CAS No.: [110-16-7]
Molecular formula: $C_4H_4O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 0.1mg/ml
Injection volume: 0.5µl
Retention time: 7.45min
Capacity factor: 1.62



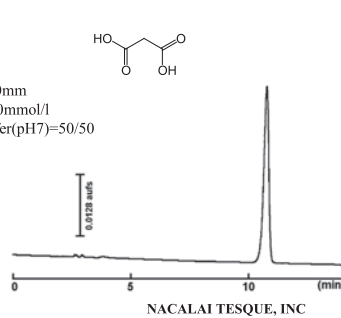
COSMOSIL Chromatogram Index

Sample: L-(-)-Malic Acid
CAS No.: [97-67-6]
Molecular formula: $C_4H_6O_5$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 10.55min
Capacity factor: 2.71



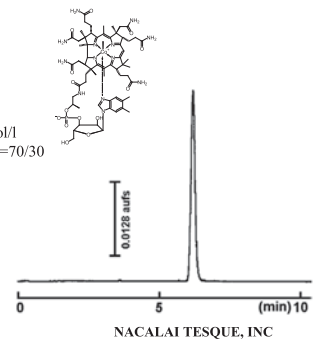
COSMOSIL Chromatogram Index

Sample: Malonic Acid
CAS No.: [141-82-2]
Molecular formula: $C_3H_4O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 10.78min
Capacity factor: 2.81



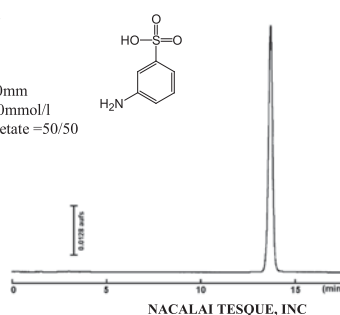
COSMOSIL Chromatogram Index

Sample: Mecobalamin
CAS No.: [13422-55-4]
Molecular formula: $C_{63}H_{91}CoN_{13}O_{14}P$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV266 nm
Attenuation: 0.128 auFS
Sample conc.: 0.5mg/ml
Injection volume: 1.0µl
Retention time: 6.22min
Capacity factor: 1.35



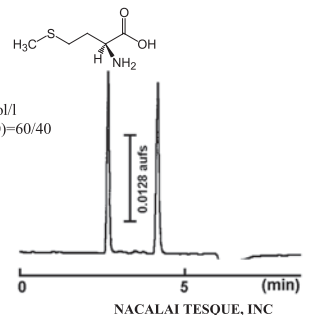
COSMOSIL Chromatogram Index

Sample: Metanilic Acid
CAS No.: [121-47-1]
Molecular formula: $C_6H_7NO_3S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 13.68min
Capacity factor: 3.80



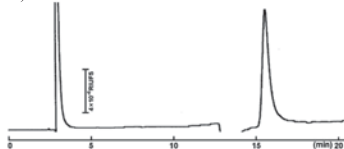
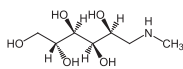
COSMOSIL Chromatogram Index

Sample: L- Methionine
CAS No.: [63-68-3]
Molecular formula: $C_5H_{11}NO_2S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Citrate buffer(pH7.0)=60/40
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 0.5µl
Retention time: 4.15min
Capacity factor: 0.54



COSMOSIL Chromatogram Index

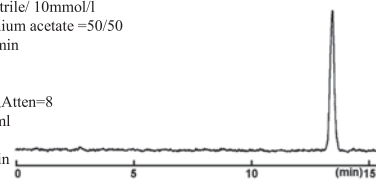
Sample: *N*-Methylglucamine
 CAS No.: [6284-40-8]
 Molecular formula: C₈H₁₇NO₅
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=70/30
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: RI
 Attenuation: 4 × 10⁻⁵RIU/FS
 Sample conc.: 10.0mg/ml
 Injection volume: 2.0µl
 Retention time: 15.52min
 Capacity factor: 4.22



NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

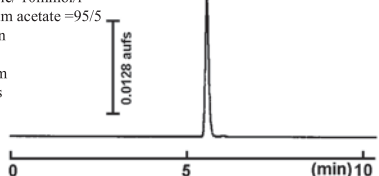
Sample: *N*-Methylhydroxylamine
 CAS No.: [593-77-1]
 Molecular formula: CH₃NO₂
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: ELSD
 Attenuation: Gain=6, Atten=8
 Sample conc.: 1.0mg/ml
 Injection volume: 2.0µl
 Retention time: 13.45min
 Capacity factor: 4.21



NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

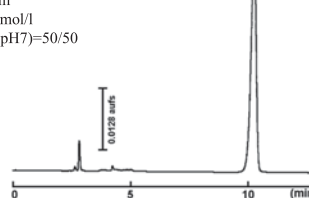
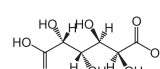
Sample: 6-Methyl-2-thiouracil
 CAS No.: [56-04-2]
 Molecular formula: C₅H₄N₂OS
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =95/5
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV260 nm
 Attenuation: 0.128 auFs
 Sample conc.: 0.1mg/ml
 Injection volume: 0.5µl
 Retention time: 5.58min
 Capacity factor: 0.84



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COSMOSIL Chromatogram Index

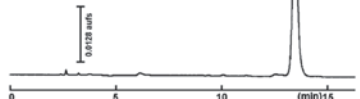
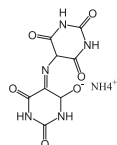
Sample: Mucic Acid
 CAS No.: [526-99-8]
 Molecular formula: C₆H₁₀O₈
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV210 nm
 Attenuation: 0.128 auFs
 Sample conc.: 10.0mg/ml
 Injection volume: 1.0µl
 Retention time: 10.27min
 Capacity factor: 2.62



NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

Sample: Murexide
 CAS No.: [3051-09-0]
 Molecular formula: C₈H₆N₂O₆
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV220 nm
 Attenuation: 0.128 auFs
 Sample conc.: 1.0mg/ml
 Injection volume: 0.5µl
 Retention time: 13.47min
 Capacity factor: 3.69



NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

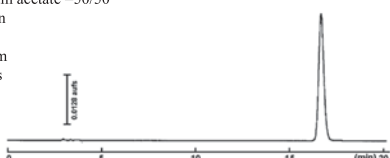
Sample: Nicotinamide
 CAS No.: [98-92-0]
 Molecular formula: C₆H₆N₂O
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =95/5
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV254 nm
 Attenuation: 0.128 auFs
 Sample conc.: 0.2mg/ml
 Injection volume: 1.0µl
 Retention time: 5.40min
 Capacity factor: 0.77



NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

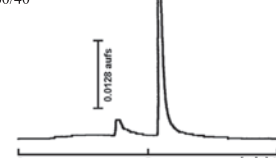
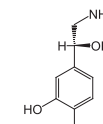
Sample: Nicotinic Acid
 CAS No.: [59-67-6]
 Molecular formula: C₆H₅NO₂
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV254 nm
 Attenuation: 0.128 auFs
 Sample conc.: 1.0mg/ml
 Injection volume: 0.5µl
 Retention time: 16.67min
 Capacity factor: 4.87



NACALAI TESQUE, INC

COSMOSIL Chromatogram Index

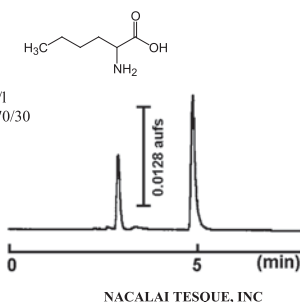
Sample: *L*-Noradrenaline
 CAS No.: [51-41-2]
 Molecular formula: C₈H₁₁NO₃
 Column: HILIC
 Column size: 4.6mm I.D.-250mm
 Mobile phase: Acetonitrile/ 10mmol/l Citrate buffer(pH7.0)=60/40
 Flow rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV254 nm
 Attenuation: 0.128 auFs
 Sample conc.: 5.0mg/ml
 Injection volume: 1.0µl
 Retention time: 5.47min
 Capacity factor: 1.07



NACALAI TESQUE, INC

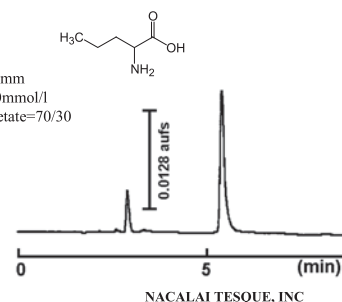
COSMOSIL Chromatogram Index

Sample: DL-Norleucine
CAS No.: [616-06-8]
Molecular formula: $C_7H_{13}NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 5.0mg/ml
Injection volume: 1.0µl
Retention time: 4.89min
Capacity factor: 0.86



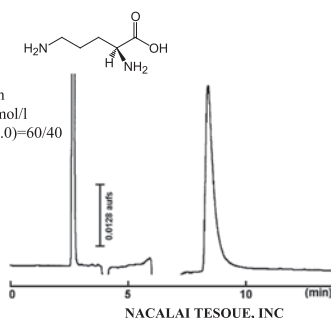
COSMOSIL Chromatogram Index

Sample: DL-Norvaline
CAS No.: [760-78-1]
Molecular formula: $C_5H_{11}NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 5.43min
Capacity factor: 1.07



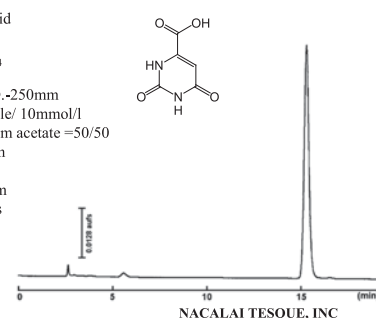
COSMOSIL Chromatogram Index

Sample: L-Ornithine
CAS No.: [70-26-8]
Molecular formula: $C_5H_{12}N_2O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Citrate buffer(pH7.0)=60/40
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 8.39min
Capacity factor: 2.10



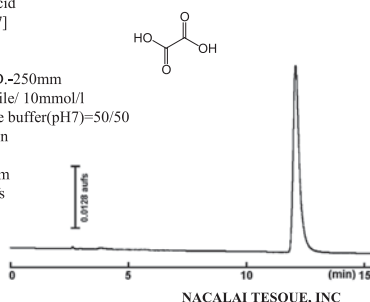
COSMOSIL Chromatogram Index

Sample: Orotic Acid
CAS No.: [65-86-1]
Molecular formula: $C_5H_6N_2O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 0.5mg/ml
Injection volume: 1.0µl
Retention time: 15.24min
Capacity factor: 4.36



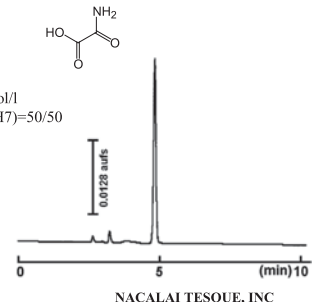
COSMOSIL Chromatogram Index

Sample: Oxalic Acid
CAS No.: [144-62-7]
Molecular formula: $C_2H_2O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 5.0mg/ml
Injection volume: 0.5µl
Retention time: 12.08min
Capacity factor: 3.27



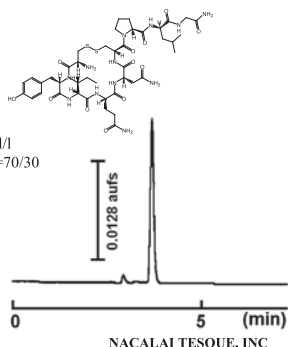
COSMOSIL Chromatogram Index

Sample: Oxamic Acid
CAS No.: [471-47-6]
Molecular formula: $C_2H_3NO_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 0.1mg/ml
Injection volume: 1.0µl
Retention time: 4.83min
Capacity factor: 0.71



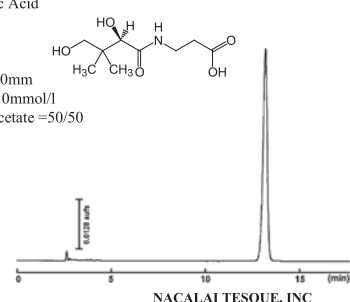
COSMOSIL Chromatogram Index

Sample: Oxytocin
CAS No.: [50-56-6]
Molecular formula: $C_{43}H_{66}N_{12}O_{12}S_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 0.4mg/ml
Injection volume: 0.5µl
Retention time: 3.71min
Capacity factor: 0.39



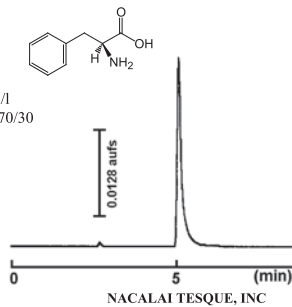
COSMOSIL Chromatogram Index

Sample: D-Pantoic Acid
CAS No.: [79-83-4]
Molecular formula: $C_9H_{17}NO_5$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 13.21min
Capacity factor: 3.60



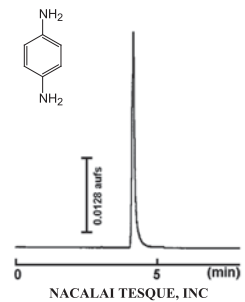
COSMOSIL Chromatogram Index

Sample: L-(-)-Phenylalanine
CAS No.: [63-91-2]
Molecular formula: C₉H₉NO₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 254nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 5.10min
Capacity factor: 0.94



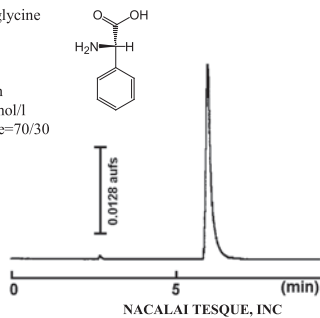
COSMOSIL Chromatogram Index

Sample: p-Phenylenediamine
CAS No.: [106-50-3]
Molecular formula: C₆H₈N₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 0.1mg/ml
Injection volume: 0.5µl
Retention time: 4.15min
Capacity factor: 0.36



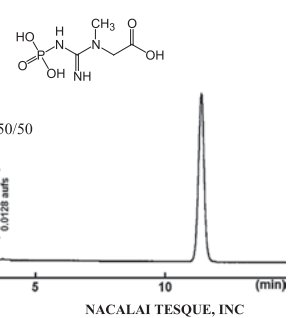
COSMOSIL Chromatogram Index

Sample: L-(+)-α-Phenylglycine
CAS No.: [2935-35-5]
Molecular formula: C₉H₉NO₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 5.0mg/ml
Injection volume: 1.0µl
Retention time: 5.96min
Capacity factor: 1.27



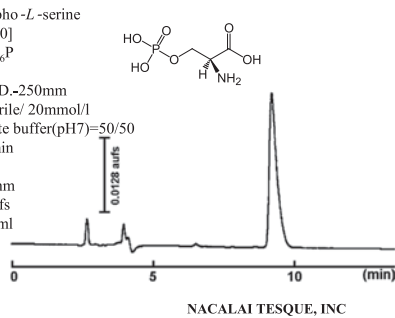
COSMOSIL Chromatogram Index

Sample: Phosphocreatine
CAS No.: [67-07-2]
Molecular formula: C₄H₁₀N₃O₅P
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 11.42min
Capacity factor: 3.00



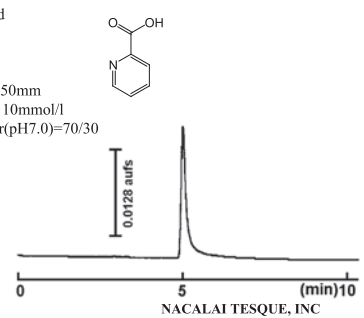
COSMOSIL Chromatogram Index

Sample: O-Phospho-L-serine
CAS No.: [407-41-0]
Molecular formula: C₃H₇NO₆P
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 3.0µl
Retention time: 9.19min
Capacity factor: 2.24



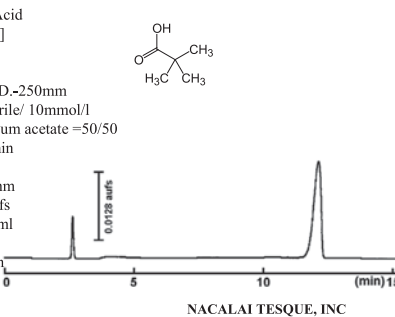
COSMOSIL Chromatogram Index

Sample: Picolinic acid
CAS No.: [98-98-6]
Molecular formula: C₆H₅NO₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Citrate buffer(pH7.0)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 0.5mg/ml
Injection volume: 0.5µl
Retention time: 5.03min
Capacity factor: 0.92



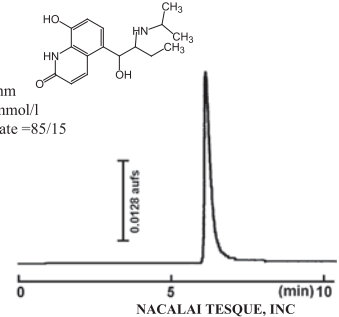
COSMOSIL Chromatogram Index

Sample: Pivalic Acid
CAS No.: [75-98-9]
Molecular formula: C₅H₁₀O₂
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 12.14min
Capacity factor: 3.28



COSMOSIL Chromatogram Index

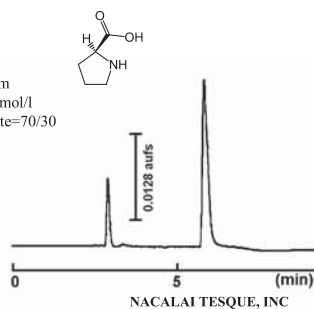
Sample: Procaterol
CAS No.: [72332-33-3]
Molecular formula: C₁₆H₂₂N₂O₃
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l
Ammonium acetate =85/15
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 0.5mg/ml
Injection volume: 0.5µl
Retention time: 6.17min
Capacity factor: 1.25



COSMOSIL Chromatogram Index

Sample: L-Proline
CAS No.: [147-85-3]
Molecular formula: $C_5H_9NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30

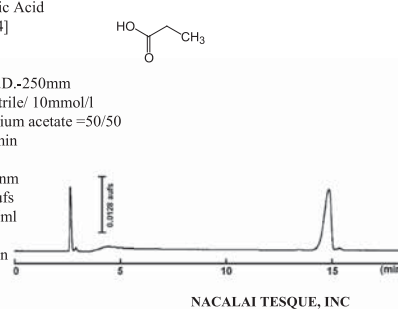
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 5.83min
Capacity factor: 1.22



COSMOSIL Chromatogram Index

Sample: Propionic Acid
CAS No.: [79-09-4]
Molecular formula: $C_3H_6O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=50/50

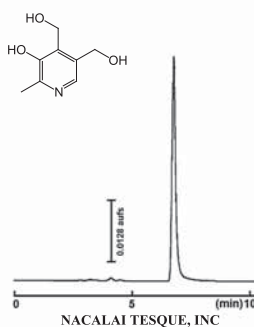
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 14.85min
Capacity factor: 4.24



COSMOSIL Chromatogram Index

Sample: Pyridoxine
CAS No.: [65-23-6]
Molecular formula: $C_8H_{10}NO_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=90/10

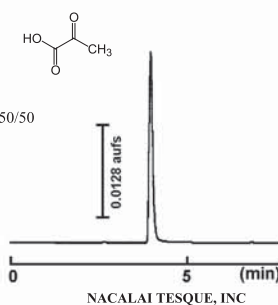
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 0.5µl
Retention time: 6.78min
Capacity factor: 1.35



COSMOSIL Chromatogram Index

Sample: Pyruvic Acid
CAS No.: [127-17-3]
Molecular formula: $C_3H_4O_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l
Phosphate buffer(pH7)=50/50

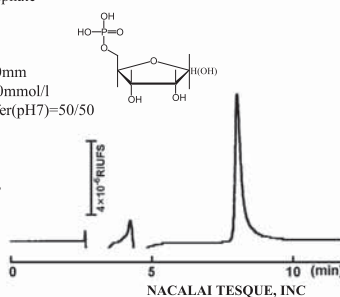
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 2.0µl
Retention time: 3.97min
Capacity factor: 0.39



COSMOSIL Chromatogram Index

Sample: Ribose-5-phosphate
CAS No.: [4300-28-1]
Molecular formula: $C_5H_{11}O_8P$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 20mmol/l
Phosphate buffer(pH7)=50/50

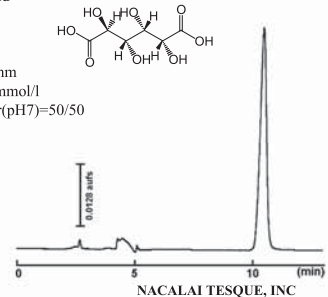
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: RI
Attenuation: 4×10^{-5} RIU/FS
Sample conc.: 10.0mg/ml
Injection volume: 5.0µl
Retention time: 8.02min
Capacity factor: 2.06



COSMOSIL Chromatogram Index

Sample: D-Saccharic Acid
CAS No.: [87-73-0]
Molecular formula: $C_6H_{10}O_8$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50

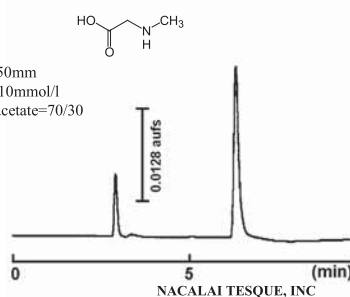
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 10.48min
Capacity factor: 2.69



COSMOSIL Chromatogram Index

Sample: Sarcosine
CAS No.: [107-97-1]
Molecular formula: $C_3H_7NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30

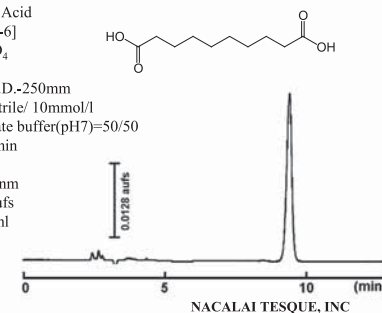
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 210nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 6.30min
Capacity factor: 1.40



COSMOSIL Chromatogram Index

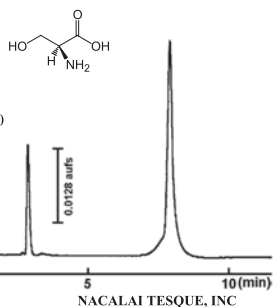
Sample: Sebacic Acid
CAS No.: [111-20-6]
Molecular formula: $C_{10}H_{18}O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50

Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 5.0mg/ml
Injection volume: 1.5µl
Retention time: 9.43min
Capacity factor: 2.28



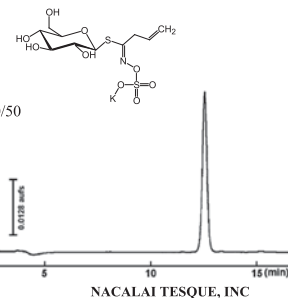
COSMOSIL Chromatogram Index

Sample: L-Serine
CAS No.: [56-45-1]
Molecular formula: $C_3H_7NO_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 7.92min
Capacity factor: 2.01



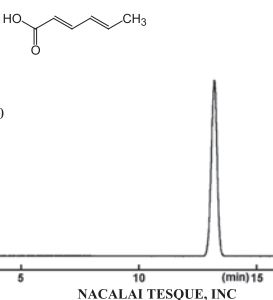
COSMOSIL Chromatogram Index

Sample: Sinigrin
CAS No.: [3952-98-5]
Molecular formula: $C_{16}H_{19}KNO_9S_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 12.57min
Capacity factor: 3.38



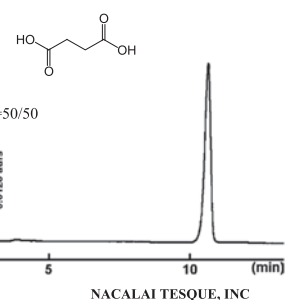
COSMOSIL Chromatogram Index

Sample: Sorbic Acid
CAS No.: [110-44-1]
Molecular formula: $C_8H_8O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 aufs
Sample conc.: 0.1mg/ml
Injection volume: 0.5µl
Retention time: 13.19min
Capacity factor: 3.59



COSMOSIL Chromatogram Index

Sample: Succinic Acid
CAS No.: [110-15-6]
Molecular formula: $C_4H_6O_4$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 0.5µl
Retention time: 10.64min
Capacity factor: 2.74



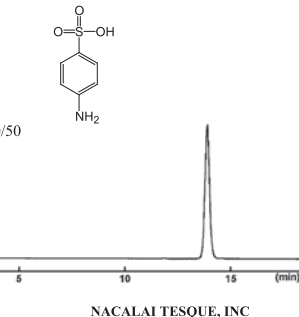
COSMOSIL Chromatogram Index

Sample: Sulbactam
CAS No.: [68373-14-8]
Molecular formula: $C_8H_{11}NO_5S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 5.0mg/ml
Injection volume: 0.5µl
Retention time: 10.86min
Capacity factor: 2.81



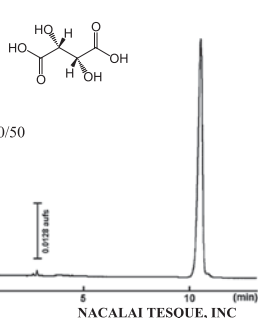
COSMOSIL Chromatogram Index

Sample: Sulfamic acid
CAS No.: [121-57-3]
Molecular formula: $C_6H_7NO_3S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 aufs
Sample conc.: 0.10mg/ml
Injection volume: 1.0µl
Retention time: 13.87min
Capacity factor: 3.87



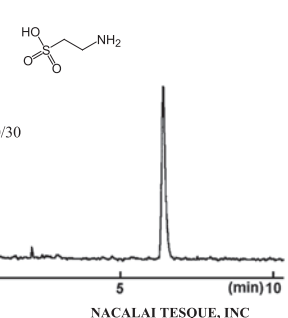
COSMOSIL Chromatogram Index

Sample: L-(+)-Tartaric Acid
CAS No.: [87-69-4]
Molecular formula: $C_4H_6O_6$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 1.5µl
Retention time: 10.52min
Capacity factor: 2.70



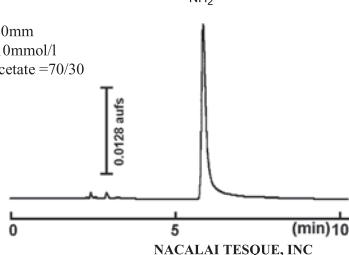
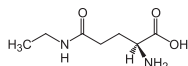
COSMOSIL Chromatogram Index

Sample: Taurine
CAS No.: [107-35-7]
Molecular formula: $C_2H_7NO_3S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Attenuation: Gain=6, Atten=8
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 6.40min
Capacity factor: 1.25



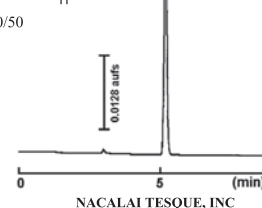
COSMOSIL Chromatogram Index

Sample: L-Theanine
CAS No.: [3081-61-6]
Molecular formula: $C_7H_{14}N_2O_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 auFS
Sample conc.: 5.0mg/ml
Injection volume: 0.5µl
Retention time: 5.89min
Capacity factor: 1.21



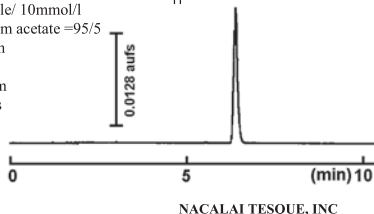
COSMOSIL Chromatogram Index

Sample: 2-Thiobarbituric Acid
CAS No.: [504-17-6]
Molecular formula: $C_4H_4N_2O_2S$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Phosphate buffer(pH7)=50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 0.1mg/ml
Injection volume: 0.5µl
Retention time: 5.18min
Capacity factor: 0.82



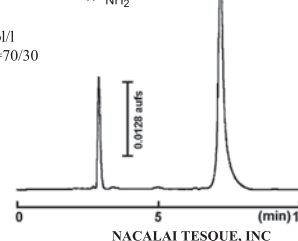
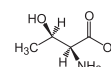
COSMOSIL Chromatogram Index

Sample: 2-Thiouracil
CAS No.: [141-90-2]
Molecular formula: $C_4H_4N_2OS$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV260 nm
Attenuation: 0.128 auFS
Sample conc.: 0.1mg/ml
Injection volume: 0.5µl
Retention time: 6.38min
Capacity factor: 1.11



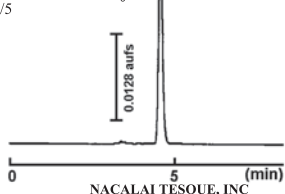
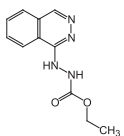
COSMOSIL Chromatogram Index

Sample: L-Threonine
CAS No.: [72-19-5]
Molecular formula: $C_4H_9NO_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 7.19min
Capacity factor: 1.73



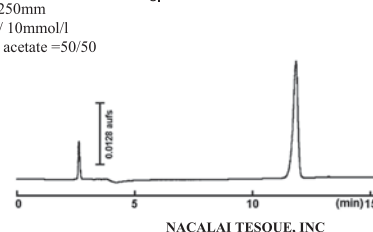
COSMOSIL Chromatogram Index

Sample: Todalazine
CAS No.: [14679-73-3]
Molecular formula: $C_{11}H_{13}N_3O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =95/5
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV240 nm
Attenuation: 0.128 auFS
Sample conc.: 0.5mg/ml
Injection volume: 0.5µl
Retention time: 4.56min
Capacity factor: 0.51



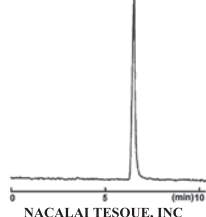
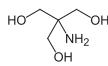
COSMOSIL Chromatogram Index

Sample: Trichloroacetic Acid
CAS No.: [76-03-9]
Molecular formula: $C_2HCl_3O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =50/50
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 auFS
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 11.83min
Capacity factor: 3.17



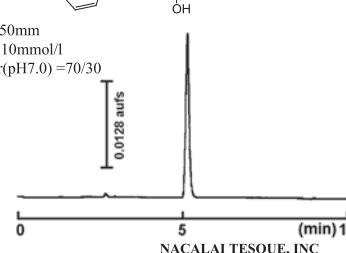
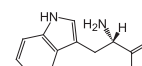
COSMOSIL Chromatogram Index

Sample: Tris(hydroxymethyl)aminomethane
CAS No.: [77-86-1]
Molecular formula: $C_4H_{11}NO_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Ammonium acetate =80/20
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: ELSD
Attenuation: Gain=6, Atten=8
Sample conc.: 2.0mg/ml
Injection volume: 1.0µl
Retention time: 6.47min
Capacity factor: 1.48



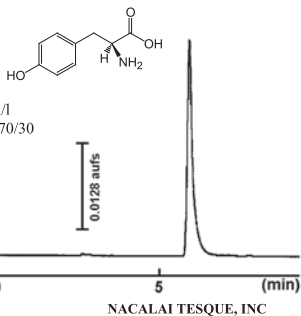
COSMOSIL Chromatogram Index

Sample: L-Tryptophan
CAS No.: [73-22-3]
Molecular formula: $C_{11}H_{12}N_2O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l
Citrate buffer(pH7.0)=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV254 nm
Attenuation: 0.128 auFS
Sample conc.: 0.5mg/ml
Injection volume: 0.5µl
Retention time: 5.14min
Capacity factor: 0.95



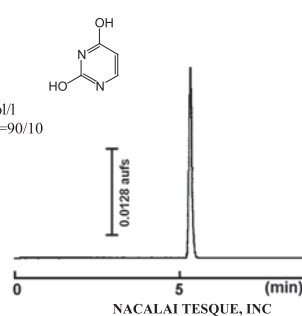
COSMOSIL Chromatogram Index

Sample: L-Tyrosine
CAS No.: [60-18-4]
Molecular formula: $C_9H_9NO_3$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV 254nm
Attenuation: 0.128 aufs
Sample conc.: 5.0mg/ml
Injection volume: 1.0µl
Retention time: 5.92min
Capacity factor: 1.25



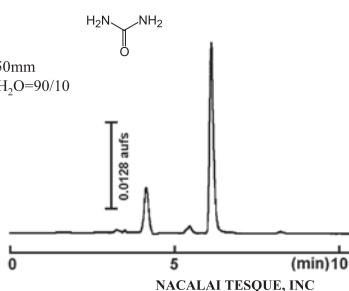
COSMOSIL Chromatogram Index

Sample: Uracil
CAS No.: [66-22-8]
Molecular formula: $C_4H_4N_2O_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV260 nm
Attenuation: 0.128 aufs
Sample conc.: 0.1mg/ml
Injection volume: 0.5µl
Retention time: 5.33min
Capacity factor: 0.84



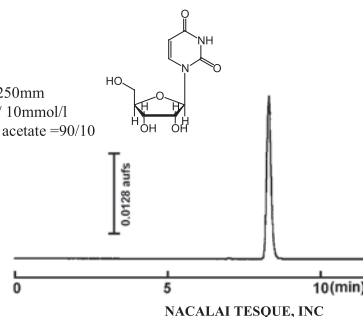
COSMOSIL Chromatogram Index

Sample: Urea
CAS No.: [57-13-6]
Molecular formula: CH_4N_2O
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ H_2O =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 2.0µl
Retention time: 6.12min
Capacity factor: 1.15



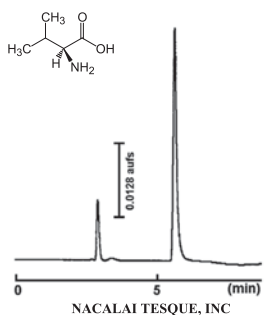
COSMOSIL Chromatogram Index

Sample: Uridine
CAS No.: [58-96-8]
Molecular formula: $C_9H_{12}N_2O_6$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV260 nm
Attenuation: 0.128 aufs
Sample conc.: 0.1mg/ml
Injection volume: 1.0µl
Retention time: 8.30min
Capacity factor: 1.86



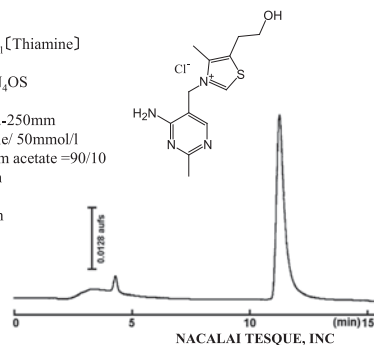
COSMOSIL Chromatogram Index

Sample: L-Valine
CAS No.: [72-18-4]
Molecular formula: $C_6H_{11}NO_2$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate=70/30
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV210 nm
Attenuation: 0.128 aufs
Sample conc.: 10.0mg/ml
Injection volume: 1.0µl
Retention time: 5.63min
Capacity factor: 1.14



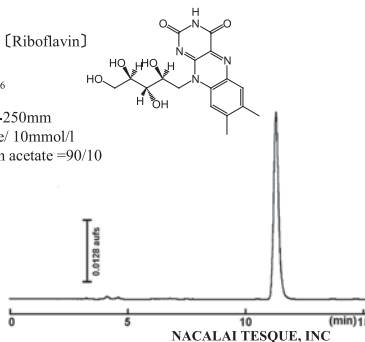
COSMOSIL Chromatogram Index

Sample: Vitamin B₁ [Thiamine]
CAS No.: [67-03-8]
Molecular formula: $C_{12}H_{17}ClN_4OS$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 50mmol/l Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 1.0mg/ml
Injection volume: 1.0µl
Retention time: 11.25min
Capacity factor: 2.93



COSMOSIL Chromatogram Index

Sample: Vitamin B₂ [Riboflavin]
CAS No.: [83-88-5]
Molecular formula: $C_{17}H_{20}N_4O_6$
Column: HILIC
Column size: 4.6mm I.D.-250mm
Mobile phase: Acetonitrile/ 10mmol/l Ammonium acetate =90/10
Flow rate: 1.0 ml/min
Temperature: 30°C
Detection: UV220 nm
Attenuation: 0.128 aufs
Sample conc.: 1.0mg/ml
Injection volume: 0.5µl
Retention time: 11.33min
Capacity factor: 2.92



Reference List

References list

No.	Title	AUTHOR	JOURNAL	ISSUE	PAGE	YEAR
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2	A simple graphical representation of selectivity in hydrophilic interaction liquid chromatography	Mohammed E.A. Ibrahim, Yang Liu, Charles A. Lucy	Journal of Chromatography A	1260	126-131	2012
3	Comparison of 2-amino-[3-11C] isobutyric acid and 2-deoxy-2-[18F]fluoro-D-glucose in nude mice with xenografted tumors and acute inflammation	Tsuji, Atsushi B; Kato, Koichi; Sugyo, Aya; Okada, Maki; Sudo, Hitomi; Yoshida, Chisato; Wakizaka, Hidekatsu; Zhang, Ming-Rong; Saga, Tsuneo	Nuclear Medicine Communications	33 (10)	1058–1064	2012
4	In Vitro and in Vivo Metabolism of Verproside in Rats	Min Gi Kim, Deok-Kyu Hwang, Hyeon-Uk Jeong, Hye Young Ji, Sei-Ryang Oh, Yongnam Lee, Ji Seok Yoo, Dae Hee Shin and Hye Suk Lee	Molecules	17 (10)	11990-12002	2012
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12	Chromatographic characterization of hydrophilic interaction liquid chromatography stationary phases: Hydrophilicity, charge effects, structural selectivity, and separation efficiency	Yuusuke Kawachi, Tohru Ikegami, Hirotaka Takubo, Yuka Ikegami, Masatoshi Miyamoto, Nobuo Tanaka	Journal of Chromatography A	1218 (35)	5903-5919	2011
13	The different decomposition properties of diazolidinyl urea in cosmetics and patch test materials	Takahiro Doi, Keiji Kajimura, Shuzo Taguchi	Contact Dermatitis	65 (2)	81-91	2011
14	Stationary and mobile phases in hydrophilic interaction chromatography: a review	Pavel Jandera	Analytica Chimica Acta	692 (1-2)	1-25	2011
15	Degradation of N-Acetyl-D-glucosamine and D-Glucosamine in Subcritical Water and Properties of the Degradation Products	Rongchun WANG, Takashi KOBAYASHI and Shuji ADACHI	Food Science and Technology Research	17 (4)	273-278	2011
16	Determination of isoascorbic acid in fish tissue by hydrophilic interaction liquid chromatography–ultraviolet detection	Spyros Drivelos, Marilena E. Dasenaki and Nikolaos S. Thomaidis	Analytical and Bioanalytical Chemistry	397 (6)	2199-2210	2010
17	Hepatoprotective Effects of Flavonoids from Shekwasha (Citrus depressa) against D-Galactosamine-Induced Liver Injury in Rats	Toshiyuki AKACHI, Yasuyuki SHIINA, Yayoi OHISHI, Takumi KAWAGUCHI, Hirokazu KAWAGISHI, Tatsuya MORITA, Makoto MORI and Kimio SUGIYAMA	J. Nutr Sci Vitaminol	56 (1)	60-67	2010

Reference List

No.	Title	AUTHOR	JOURNAL	ISSUE	PAGE	YEAR
18	A Novel Glucosylation Reaction on Anthocyanins Catalyzed by Acyl-Glucose-Dependent Glucosyltransferase in the Petals of Carnation and Delphinium	Yuki Matsuba, Nobuhiro Sasaki, Masayuki Tera, Masachika Okamura, Yutaka Abe, Emi Okamoto, Haruka Nakamura, Hisakage Funabashi, Makoto Takatsu, Mikako Saito, Hideaki Matsuoka, Kazuo Nagasawa and Yoshihiro Ozekia	The Plant Cell	22 (10)	3374-3389	2010
19	Molecular identification of unsaturated uronate reductase prerequisite for alginate metabolism in <i>Sphingomonas</i> sp. A1	Ryuichi Takasea, Akihito Ochiai, Bunzo Mikami, Wataru Hashimoto, Kousaku Murata,	Biochimica et Biophysica Acta (BBA) - Proteins & Proteomics	1804 (9)	1925-1936	2010
20	Inhibitory Effects of Acylated Acyclic Sesquiterpene Oligoglycosides from the Pericarps of <i>Sapindus rarak</i> on Tumor Necrosis Factor- α -Induced Cytotoxicity	Toshio Morikawa, Yuanyuan Xie, Kiyofumi Ninomiya, Masaki Okamoto, Osamu Muraoka, Dan Yuan, Masayuki Yoshikawa and Takao Hayakawa	Chem. Pharm. Bull.	58 (9)	1276-1280	2010
21	Approach to hydrophilic interaction chromatography column selection: Application to neurotransmitters analysis	Raluca-Ioana Chirita, Caroline West, Adriana-Luminita Finaru, Claire Elfakir	Journal of Chromatography A	1217 (18)	3091-3104	2010
22	Medicinal Flowers. Part 29. Acylated Oleanane-Type Triterpene Bisdesmosides: Perennisaponins G, H, I, J, K, L, and M with Pancreatic Lipase Inhibitory Activity from the Flowers of <i>Bellis perennis</i>	Toshio Morikawa, Xuezheng Li, Eriko Nishida, Seikou Nakamura, Kiyofumi Ninomiya, Hisashi Matsuda, Yoshimi Oda, Osamu Muraoka, Masayuki Yoshikawa	Helvetica Chimica Acta	93 (3)	573-586	2010
23	Unusual amino acid derivatives from the mushroom <i>Pleurocybella porrigens</i>	Takumi Kawaguchi, Tomohiro Suzuki, Yuka Kobayashi, Shinya Kodani, Hirofumi Hirai, Kaoru Nagai, Hirokazu Kawagishi	Tetrahedron	66 (2)	504-507	2010
24	Structures of Acetylated Oleanane-Type Triterpene Saponins, Rarasaponins IV, V, and VI, and Anti-hyperlipidemic Constituents from the Pericarps of <i>Sapindus rarak</i>	Yasunobu Asao, Toshio Morikawa, Yuanyuan Xie, Masaki Okamoto, Makoto Hamao, Hisashi Matsuda, Osamu Muraoka, Dan Yuan and Masayuki Yoshikawa	Chem. Pharm. Bull.	57 (2)	198-203	2009
25	Development and validation of a reversed-phase high-performance liquid chromatographic method for quantification of peptide dendrimers in human skin permeation experiments	S. Mutalik, A.K. Hewavitharana, P.N. Shaw, Y.G. Anissimov, M.S. Roberts, H.S. Parekh,	Journal of Chromatography B	877 (29)	3556-3562	2009
26	Determination of para-aminohippuric acid (PAH) in human plasma and urine by liquid chromatography–tandem mass spectrometry	Phey Yen Han, P. Nicholas Shaw, Carl M.J. Kirkpatrick	Journal of Chromatography B	877 (27)	3215-3220	2009
27	Oxidation of Methionine to Dehydromethionine by Reactive Halogen Species Generated by Neutrophils	Alexander V. Peskin, Rufus Turner, Ghassan J. Maghzal, Christine C. Winterbourn and Anthony J. Kettle	Biochemistry	48 (42)	10175–10182	2009
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31	A Perspective of Hydrophilic Interaction Chromatography -Development and the Characteristics of the separation mode	Tohru Ikegami, Hirotaka Takubo, Nobuo Tanaka	Chromatography	29 (2)		2008
32	Tetrodotoxin poisoning evidenced by solid-phase extraction combining with liquid chromatography–tandem mass spectrometry	Hsiao-Chin Jen, Shin-Jung Lin, Yung-Hsiang Tsai, Chun-Hsiang Chen, Zu-Chun Lin, Deng-Fwu Hwang,	Journal of Chromatography B	871 (1)	95-100	2008

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