RSolv®

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Biomolecular Chromatography Columns

High-Performance Columns for Proteins, Peptides, High-MW Biomolecules, Glycoproteins, Enzymes, Oligonucleotide and others Applications

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Table of Content

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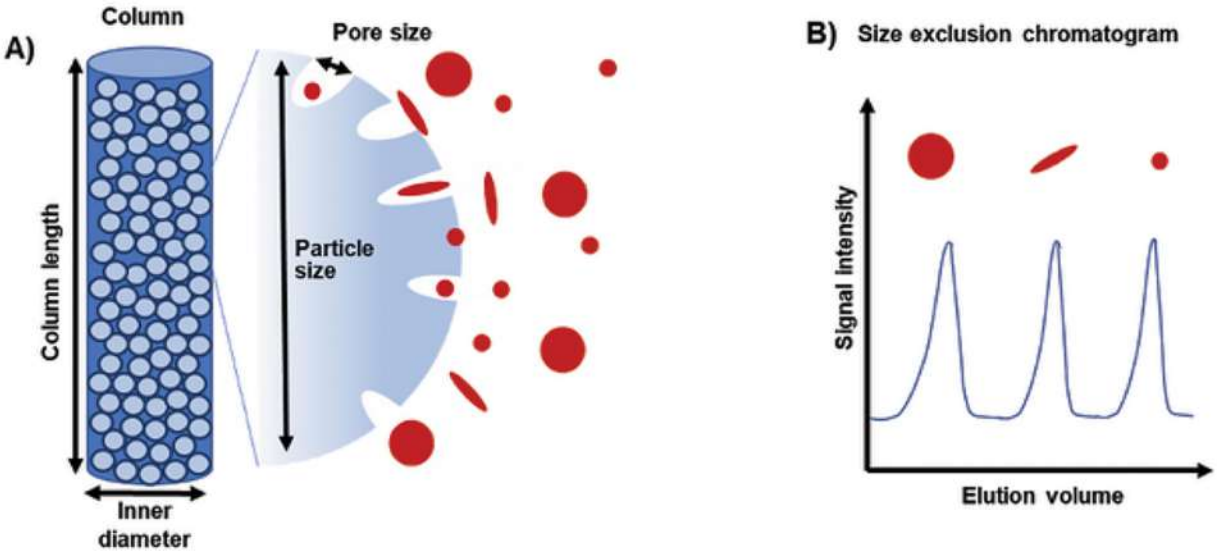
IonoSEC GPC

RSolv® Size Exclusion Columns

- IonoSEC columns are designed and manufactured for the analysis and purification of proteins, peptides polymers, basic and acidic molecules, as well as pharmaceutical compounds
- These columns are based on pure, highly spherical, porous and nonporous silica supports
- Designed to deliver excellent resolution, stability, and reproducibility



High-Resolution Size Exclusion Chromatography

- Available in 7 pore sizes (50Å–4000Å) & 5–10µm particles
- Built with glycerol bonded size exclusion & spherical silica chromatography chemistry
- Broad column dimensions: 1–30 mm I.D., 50–300 mm length
- Ideal for 0.5 kDa to 10,000 kDa molecular weight range
- USP L20 & L33 compliant for regulatory confidence
- 100Å–500Å: Fast analysis of proteins, carbohydrates, nucleic acids, and other water-soluble polymers
- 1000Å & 4000Å: Great for large polymer separation

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Specifications of RSolv® IonoSEC GPC CColumns

- ***IonoSEC GPC***

IonoSEC GPC PEPTIDE is a glycerol bonded size exclusion support on a 5µ, 50Å spherical silica which can resolve small peptides (MW 0.8-30 kD). This support can resolve peptides which have at least a two-fold MW difference. Mobile phase optimization may be necessary due to the high variability in solubility, charge, and hydrophobicity of peptides. The exclusion limit for IonoSEC GPC Peptide makes it an effective "desalting column" for processing protein samples

- ***IonoSEC GPC-100***

IonoSEC GPC-100 is a glycerol bonded size exclusion support on 5µ, 100Å spherical silica designed for the rapid analysis of proteins, carbohydrates, nucleic acids, and other water-soluble polymers. This support is appropriate for globular molecules with MW ranges from 5-160 kD and linear molecules with MW ranges from .5-25 kD

- ***IonoSEC GPC-300***

IonoSEC GPC-300 is a glycerol bonded size exclusion support on 5µ, 300Å spherical silica designed for the rapid analysis of proteins, carbohydrates, nucleic acids, and other water-soluble polymers. This support is appropriate for globular molecules with MW ranges from 10-1000 kD and linear molecules with MW ranges from 2-100 kD

- ***IonoSEC GPC-500***

IonoSEC GPC-500 is a glycerol bonded size exclusion support on 7µ, 500Å spherical silica designed for the rapid analysis of proteins, carbohydrates, nucleic acids, and other water-soluble polymers. This support is appropriate for globular molecules with MW ranges from 40-2000 kD and linear molecules with MW ranges from 10-350 kD

- ***IonoSEC GPC-1000***

IonoSEC GPC-1000 is a glycerol bonded size exclusion support on a 7µ, 1000Å spherical silica designed to effectively analyze polymers by size. This support has minimal interaction with anionic and neutral water-soluble polymers and is most frequently used with linear molecules possessing MW ranges from 40-1000 kD. It also allows for the separation of globular molecules such as protein multimers with MW ranges from 400-10,000 kD

- ***IonoSEC GPC-Linear***

IonoSEC GPC Linear is a glycerol bonded size exclusion support on a 7µ mixed pore distribution (100/1000 Å) spherical silica allowing analysis of samples with a broad range of MW's. This support has minimal interaction with anionic and neutral water-soluble polymers and denatured protein possessing MW ranges from 1-1000kDa

- ***IonoSEC GPC-4000***

IonoSEC GPC-4000 is a glycerol bonded size exclusion support on a 10µ, 4000Å spherical silica designed to effectively analyze linear polymers by size. This support has minimal interaction with anionic and neutral water soluble polymers and is most frequently used with samples containing linear molecules having MW>10,000 kD

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Rapid Analysis of Biopolymers

Size Exclusion HPLC using IonoSEC GPC Columns

RSolv's IonoSEC HPLC columns are designed and manufactured for the analysis and purification of proteins, peptides, polymers, basic and acidic molecules, as well as pharmaceutical compounds.

IonoSEC HPLC columns are individually tested to ensure premium quality and are based on pure, highly spherical, porous and non-porous silica supports. These columns utilize the classic proprietary glycerol bonding chemistries to deliver excellent resolution, stability, and reproducibility.Column sizes include 1-30 mm I.D. and 50-300 mm in length. Particle sizes are available in 1.5 to 10µ and pore sizes range from 50-4000 Å.

Featured Columns:

(300 X 7.8 mm I.D.)
IonoSEC GPC300

(250 X 4.6 mm I.D.)
IonoSEC GPC300 PEPTIDE

IonoSEC GPC100

IonoSEC GPC300

IonoSEC GPC1000

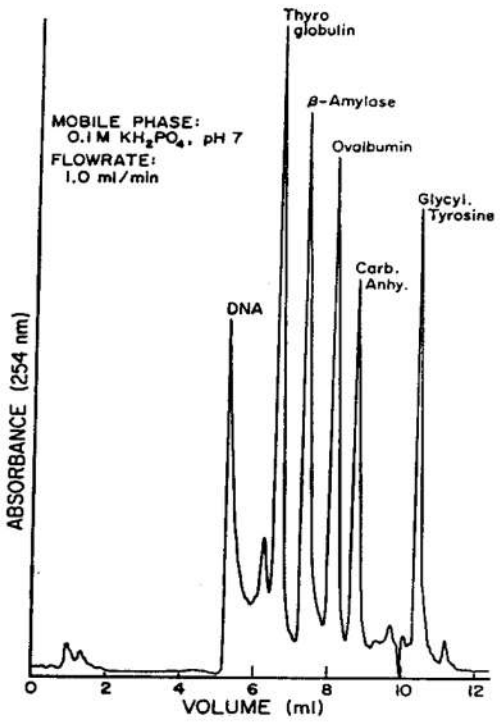
IonoSEC GPC4000

IonoSEC GPC

- Available in Six Pore Diameters
- Neutral Carbohydrate Bonded Phase
- Separates Peptides, Proteins, and Polymers
- Compatible with Aqueous (pH 2-8) and Organic Solvents
- Maintains Biological Activity

IonoSEC GPC300, 300 X 7.8 mm I.D.

Proteins



The principles of size exclusion chromatography place limitations on the operational variables such as flowrate, sample volume and sample size that can be used to achieve maximum resolution. The optimum IonoSEC GPC column can be chosen using the guidelines in the chart to the right.

Maximal Operational Limits for Optimal Resolution

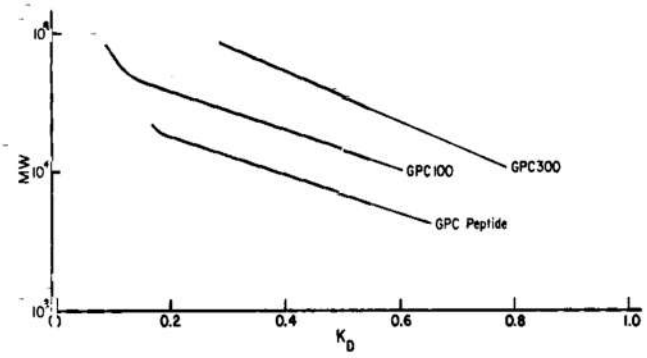
Column I.D. (mm)	Maxium Flowrate (ml/min)	Sample Volume (µl)	Sample Mass
2 .1	0.1	2	50-100µg
4.6	0.5	8	200-400µg
7.8	1.5	30	1-2 mg
10	2	50	2-4 mg
21.2	8	200	8-16 mg

IonoSEC GPC: Neutral and Anionic polymer analysis

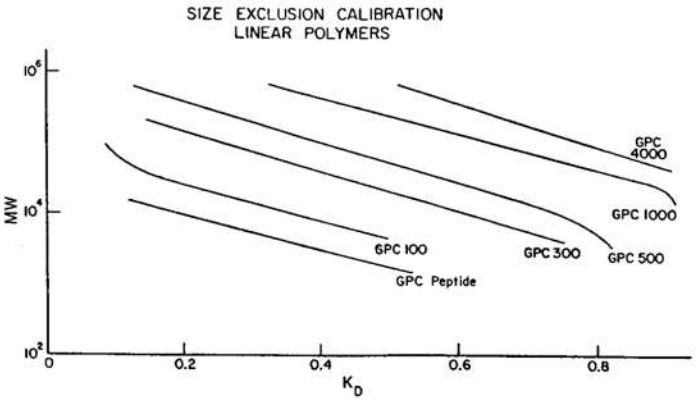
- Proteins
- Enzymes
- Nucleic Acids
- Carbohydrates
- SDS Proteins
- Synthetic Polymers

The IonoSEC GPC line contains products with six pore diameters ranging from 50Å to 4000Å, allowing analysis of solutes with molecular weights from 10^3 to 10^7. The glycerol bonded phase offers minimal interaction with anionic and neutral water-soluble polymers. The IonoSEC GPC LINEAR support has a mixed pore distribution to allow analysis of samples with a broad range of molecular weights. Its molecular weight distribution corresponds to those of GPC1000 and GPC100.

Calibration Curve - Proteins



Calibration Curve - Sulfonated Polystyrenes



GPC Column Selection
Molecular Weight Range (Kd = 0.2 - 0.8)

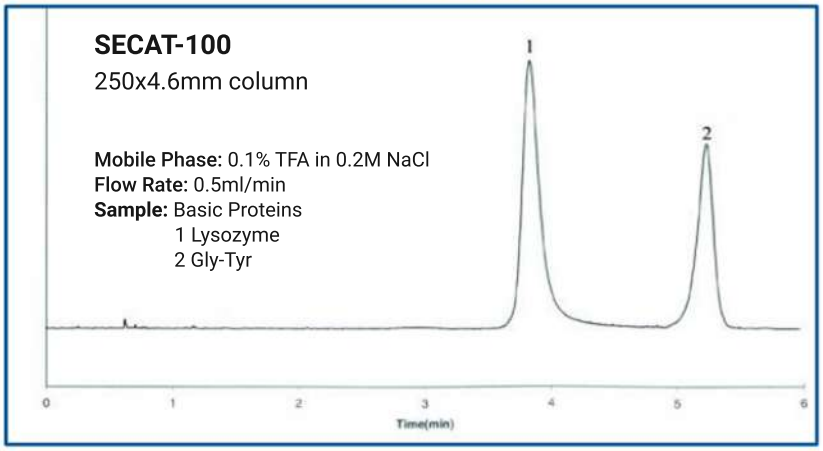
Global Molecules Proteins	Recommended Columns	Linear Molecules Organic Polymers Denatured Polymers
8.0×10^2 - 3.5×10^4	GPC Peptide	5.0×10^2 - 1.0×10^4
5.0×10^3 - 1.6×10^5	GPC 100	5.0×10^2 - 2.5×10^4
1.0×10^4 - 1.0×10^6	GPC 300	1.0×10^3 - 1.0×10^5
4.0×10^4 - 2.0×10^6	GPC 500	1.0×10^4 - 3.5×10^5
4.0×10^5 - 1.0×10^7	GPC 1000	4.0×10^4 - 1.0×10^6
	GPC 4000	7.0×10^4 - 1.0×10^7
	GPC LINEAR	1.0×10^3 - 1.0×10^6

RSolv® SECAT Columns

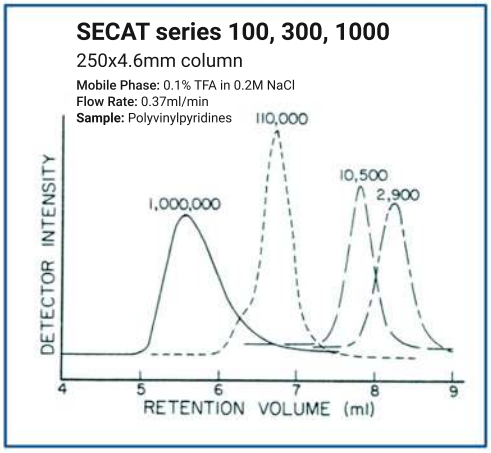
Specialized for Challenging Cationic Polymers

- Designed specifically for analysis of cationic polymers
- Polyamine coating ensures low adsorption, true size-based elution
- Designed for acidic mobile phases (0.1–0.2 M salt)
- Prevents ion-exclusion & non-specific binding
- Covers 100Å–4000Å pore sizes
- Handles 0.5 kDa to 10,000 kDa with ease

Basic Proteins



Polyvinylpyridines



Specifications:

- ***SECAT-100***

SECAT-100 columns are uniquely designed for the analysis of cationic polymers. Thesecolumns feature a proprietary polymeric bonding chemistry on a 100Å, 5µ spherical silicasupport, optimized for separating linear molecules within a molecular weight range of 0.5–25kDa. The specialized polymerized coating ensures that polymers, such as polyvinyl pyridines,elute based on size without adsorption. Acidic mobile phases with 0.1–0.2M salt are typicallyused to minimize adsorption and ion-exclusion, enabling reliable and efficient analysisIonoSEC

- ***SECAT-300***

The SECAT-300 column is specifically designed for the analysis of cationic polymers. Itfeatures a proprietary polymeric bonding chemistry on a 300Å, 5µ spherical silica support,optimized for separating linear molecules within a molecular weight range of 2-100 kDa. Thepolymerized coating ensures that polymers, such as polyvinyl pyridines, elute based on sizewithout adsorption. Acidic mobile phases with 0.1-0.2M salt are typically used to reduceadsorption and ion exclusion effects

- ***SECAT-1000***

These columns are uniquely designed for the analysis of cationic polymers. Featuringproprietary polymeric bonding chemistry on a 1000Å, 7µ spherical silica support, they areoptimized for separating linear molecules with molecular weight ranges of 40-1000 kDa. Thepolymerized coating ensures polymers like polyvinyl pyridines elute according to size, minimizing the risk of adsorption. Typical mobile phases are acidic and include 0.1-0.2M salt toreduce adsorption and ion-exclusion effects

MADE IN USA

RSolv's SECAT columns are designed and manufactured for the analysis and purification of proteins, peptides, polymers, basic and acidic molecules, as well as pharmaceutical compounds

RSolv SECAT columns are individually tested to ensure premium quality and are based on pure, highly spherical, porous and nonporous silica supports. These columns utilize the classic proprietary glycerol bonding chemistries bonding chemistries to deliver excellent resolution, stability, and reproducibility. Column sizes include 1-30 mm I.D. and 50-300 mm in length. Particle sizes are available in 1.5 to 10µ and pore sizes range from 50-4000 Å

Featured Columns:

(250 X 4.6 mm I.D.)

SECAT100

SECAT300

SECAT1000

SECAT4000

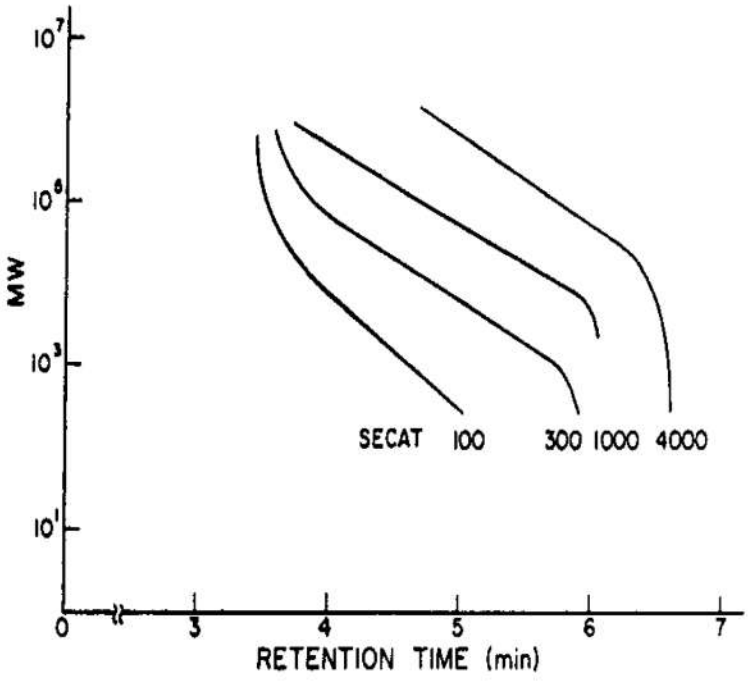
Analysis of Cationic Polymers

Size Exclusion HPLC using SECAT Columns

RSolv's SECAT was developed in 1981 for size exclusion of cationic polymers which are difficult to analyze because they typically adsorb on HPLC packings. A polymerized polyamine bonded phase totally covers the silica of SECAT, removing all negative sites. The resultant surface is slightly positive and thus, noninteractive to polyamines which usually adsorb strongly to most surfaces, including glass and metal

SECAT

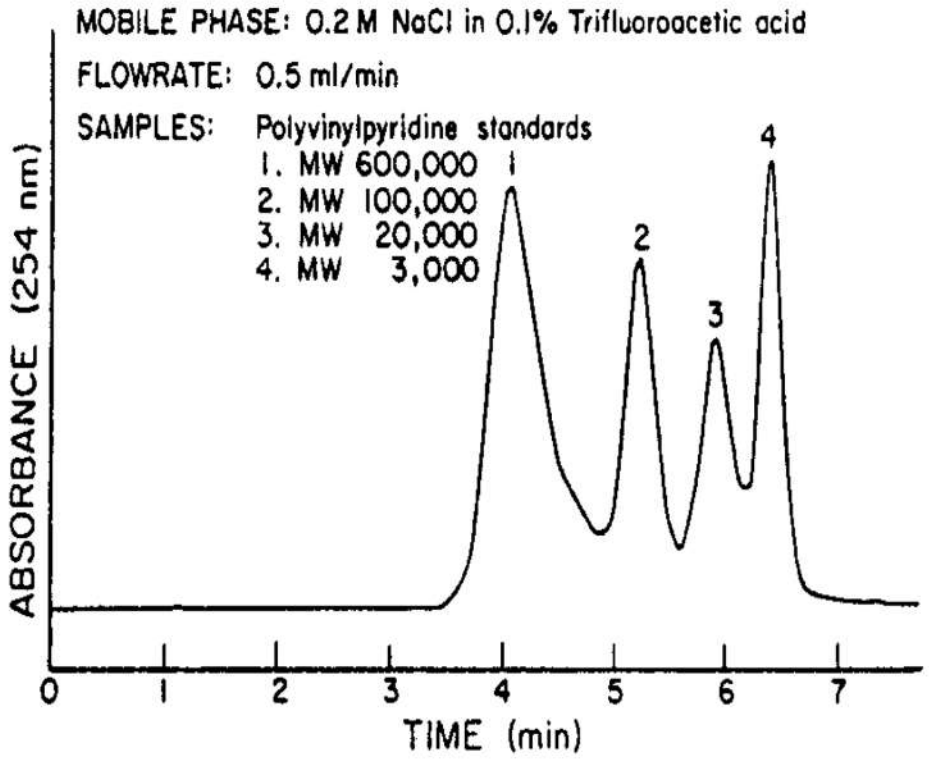
Calibration for Polyvinylpyridines



SECAT: Cationic polymer analysis

The SECAT line includes supports with four pore diameters from 100Å to 4000Å, allowing analysis of molecular weights from 10^3 to 10^7. Mobile phases are generally acidic and contain 0.1-0.2M salt to minimize adsorption and ion-exclusion (1,2).

SECAT 1000, 250 X 4.6 mm I.D.
Polyvinylpyridine Standards



SECAT Column Selection

Molecular Weight Range (Kd = 0.2 - 0.8)

Cationic Polymer MW	Recommended Column
5.0×10^2 - 2.5×10^4	SECAT100
1.0×10^3 - 1.0×10^5	SECAT300
4.0×10^4 - 1.0×10^6	SECAT1000
7.0×10^4 - 1.0×10^7	SECAT4000

References:

1. D.L. Gooding, et al., J. Liq.Chromatogr., 5 (1982) 2259-2270.
2. D.J. Nagy and D.A. Terwilliger, J. Liq. Chromatogr., 12(9) (1989) 1431-1449.

For more information please request:

26R. "High performance size exclusion chromatography of cationic polymers on a polyamine support", J. Liq. Chromatogr.
T02. "Size Exclusion Chromatography", Technical Note.

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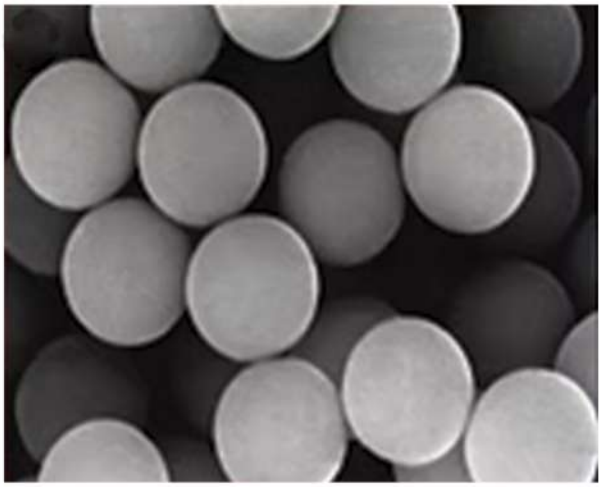
RSolv® Altisep Columns

Non-Porous Silica (NPS) Columns

An ultra-fast, high-resolution HPLC support tailored specifically for peptides, proteins and MS

Key Features:

- Method Type: HPLC & UPLC
- Base Material: Non-Porous Silica
- Particle Size: 1.5 µm NPS beads
- Surface Chemistry: Polymeric and Monomeric C18
- Molecular Weight Range: <200 kD
- Column Length: 14mm to 53mm
- Column ID: 3.0mm to 4.6mm



1.5µ NPS Beads

Specific Applications:

- The HPRP column design is compatible with any HPLC or UPLC instrument, delivering the separation and resolving power of HPLC—trusted for decades in small molecule analysis—into routine protein and peptide analysis laboratories
- This column is ideal for high-throughput applications, quality control laboratories, and LC/MS separations

Advantage:

- Its totally non-porous nature provides for fast mass transfer kinetics and high recovery of proteins at low surface carbon loads and organic MP modifiers facilitating easy elution and recovery of highly hydrophobic proteins

Specifications:

- ***Altisep ODS-II (Chelated C-18 bonded phase on 1.5µ NPS)***

DS-II, also known as HPRP, is a unique NPS based HPLC column designed specifically for complex Protein and Peptide samples. These samples usually contain detergents, chaotropes and additives typical to protein and peptide solubilization

- ***Altisep ODS-I (Polymeric C-18 bonded phase on 1.5µ NPS)***

Small drug molecules to biomolecules can be rapidly analyzed with ODS-I columns. With the addition of modifiers such as TEA, excellent peak shapes for many basic compounds such as TCA's can be obtained

- ***Altisep ODS-IIIE (Endcapped monomeric C-18 bonded phase on 1.5µ NPS)***

This is an excellent column for high throughput and QC lab applications, as well as LC/MS separations. The endcapping on ODS-IIIE columns delivers excellent resolution and analysis speed with low peak tailing for basic drug compounds

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RSolv's Altisep column is a breakthrough in fast HPLC. NPS is ultra-pure, highly uniform non porous silica spheres which provide the LC chromatographer greatly improved mass transfer and lower detection limits. Coupled with enhanced stability and dramatically reduced solvent usage, NPS is the ideal column to meet the ever increasing demands placed on today's analytical labs - Improved productivity at a lower cost.

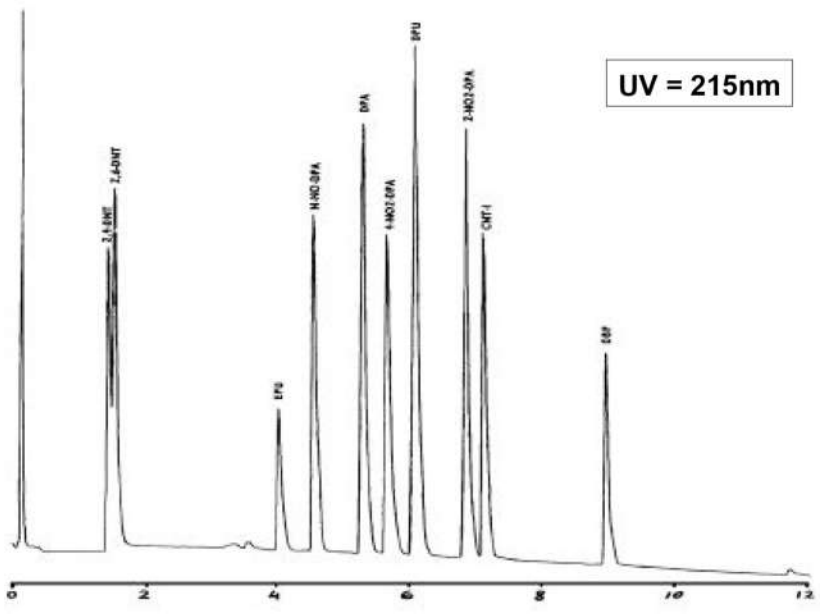
Fast Screening Analysis of Nitrocellulosic Explosives

Data courtesy of Gustavo Adolfo Garcia Buj, PH.D., Sugelabor S.A., Sicilia, Madrid

The HPLC analysis of nitrocellulosic explosives was examined using a porous column method and a Altisep 1.5m ODS-I non-porous silica column. Comparing the porous column results to those derived from the Altisep column, there is a change in elution order which can be attributed to both a selectivity difference in the columns and the use of MeOH on the porous column and ACN on the NPS column. The use of ACN also contributes to the difficulty in separating the first two peaks: 2,4-DNT & 2,6-DNT.

This data demonstrates two main benefits from using the Altisep column in this application. Run-to-run analysis times using NPS columns were nearly four times faster than the porous column including equilibration. Additionally, the NPS column analysis used 70% less mobile phase, with 90% less organic modifier

Figure : Separation of Explosives on Altisep ODS-I



Analytes

2,4-Dinitrotoluene
2,6-Dinitrotoluene
Ethylphenylurethane
N-Nitrosodiphenylamine
Diphenylamine
4-Nitrodiphenylamine
Diphenylurethane
2-Nitrodiphenylamine
Centralite-I
Dibutylphtalate

Analytical Conditions

HPLC Column	Altisep ODS-I, 1.5m, 4.6 x 33 mm
Mobile Phase	ACN/H_20 Gradient: 5:95 to 40:60 in 10 min
Flow Rate	1.2 mL/min
Injection Volume	1 µL
Temperature	20° C

RSolv's Altisep column is a breakthrough in fast HPLC. NPS is ultra-pure, highly uniform non porous silica spheres which provide the LC chromatographer greatly improved mass transfer and lower detection limits. Coupled with enhanced stability and dramatically reduced solvent usage, NPS is the ideal column to meet the ever increasing demands placed on today's analytical labs productivity at a lower cost.

Altisep NPS LC Analytical Column
Fast Separation of 2,4-DNPH on C-30

Data courtesy of Lamotte, S.; Potter, W.; Englehardt, H. of Universitat des Saarlandes, Saarbrucken, and Karst, U. of Westfalische Wilhelms-Univerisitat, Munster, Germany.

The use of 2,4-DNPH (dinitrophenylhydrazine) as a derivitizing agent is a well documented method for the determination of aldehydes and ketones in gas and liquid samples. The corresponding hydrazones that are formed are readily separated by reversed phase (RP) HPLC using UV detection. Due to the importance of these chemicals in industrial applications along with their production as byproducts in combustion processes, good analytical techniques are important in the detection and monitoring of these compounds.

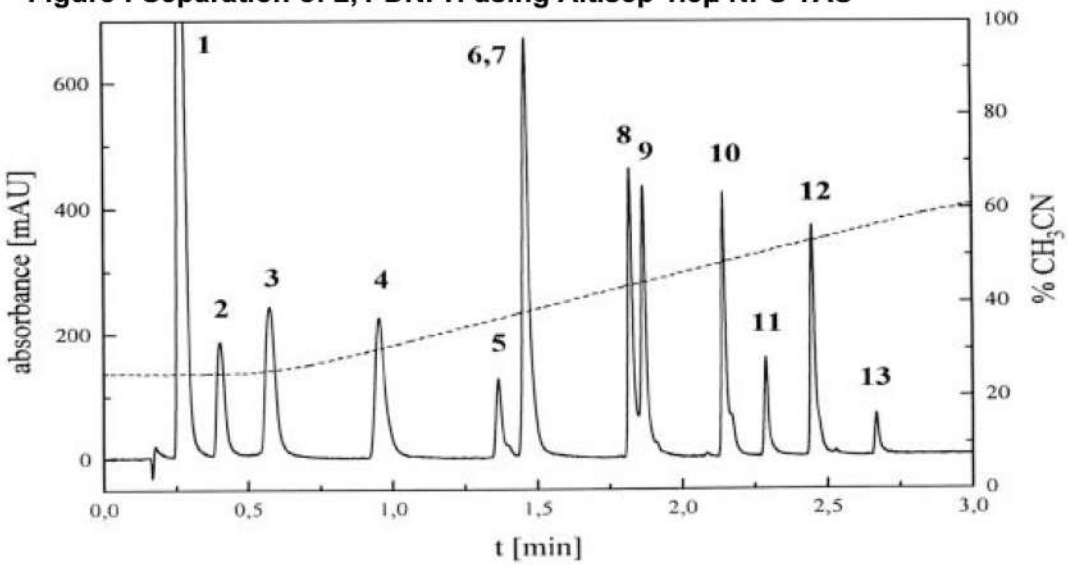
This note describes the fast and efficient HPLC method to measure aldehydes and ketones in air samples based on the use of Altisep 1.5µ NPS (non-porous silica) supports. Here we compare the separation of 2,4-DNPH derivatives using analytical columns of both an NPS ODS-I and an extended chain NPS TAS support

NPS TAS columns used in analyzing automobile exhaust show good selectivity for aliphatic and olefinic aldehydes and ketones of the same carbon chain length. In this study, selectivity was optimized by varying the temperature. This demonstration of speed for the derivatizing reaction of formaldehyde and DNPH also exemplifies the usefulness in on-line process monitoring.

Compounds for Figure:

1. DNPH
2. DNPA
3. Formaldehyde
4. Acetaldehyde
5. Acetone
6. Acrolein
7. Propanal
8. Crotonaldehyde
9. Butanal
10. Pentanal
11. Benzaldehyde
12. Hexanal
13. p-Tolualdehyde

Figure : Separation of 2,4-DNPH using Altisep 1.5µ NPS TAS



Analytical Conditions

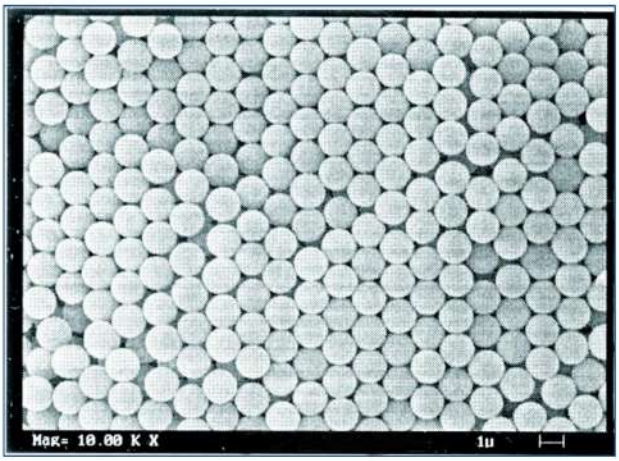
Column	Altisep NPS TAS, 1.5m, 4.6 x 53 mm
Detection	UV, λ = 360 nm
Mobile Phase	H_20/ACN linear gradient: 0.0 min = 25% B, 2.4 min = 62% B
Flow Rate	1.25 mL/min
Injection Volume	1.5µL
Temperature	28° C

RSolv® PoroPhase Columns

SCD Columns

Key Features:

- Method Type: Reversed Phase
- Base Matertial: Short Chain, Base Deactivated (for porous silica)
- Particle Size: 5µ and particle shape: Spherical Silica
- Pore Size: 100Å
- Phase: Short alkyl chain ligand bonded phase (CN & EC)
- Molecular Weight Range: <1000kD
- USP Compliance: L1
- Column Length: 100–250 mm and column ID: 2.1–4.6 mm



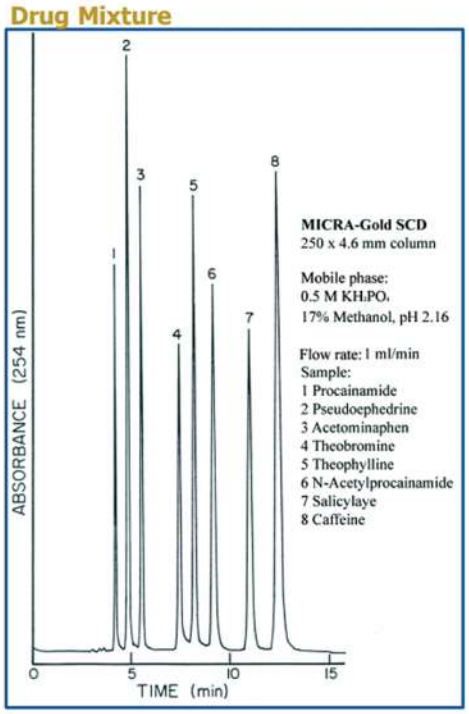
Specific Applications:

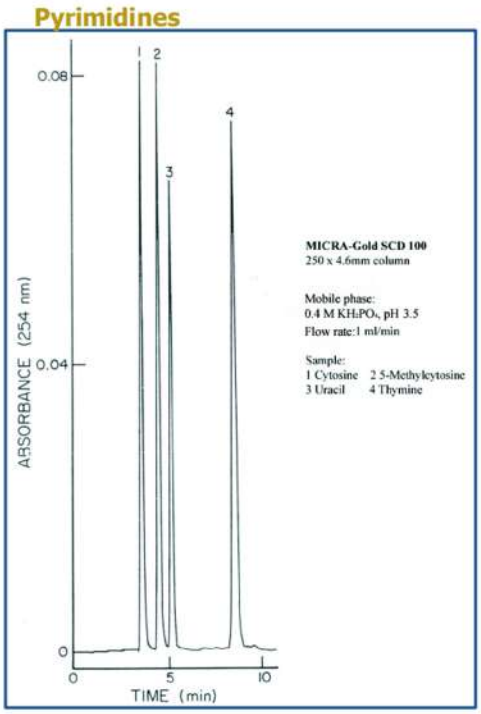
- Small molecules/basic drugs
- Analysis of positively charged molecules
- Analysis of neutral and acidic molecules

Specifications:

- ***PoroPhase SCD-100***

SCD columns are based on a short alkyl chain ligand bonded phase on 5µ, 100Å, spherical silica with state of the art base deactivation. Excellent peak shapes are obtained for many drug mixtures without the addition of silanol suppressing agents. 100% aqueous mobile phases can be routinely used





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Small Molecule Pharmaceutical Analysis

Using Base Deactivated Reversed Phase Chromatography

RSolv's PoroPhase columns are designed and manufactured for the analysis and purification of proteins, peptides, polymers, basic and acidic molecules, as well as pharmaceutical compounds

RSolv PoroPhase columns are individually tested to ensure premium quality and are based on pure, highly spherical, porous and nonporous silica supports. These columns utilize the classic proprietary short alkyl chain ligand bonding (CN & EC) chemistries to deliver excellent resolution, stability, and reproducibility. Column sizes include 1-30 mm I.D. and 50-300 mm in length. Particle sizes are available in 1.5 to 10µ and pore sizes range from 50-4000 Å

Featured Column:

PoroPhase SCD100 (250 X 4.6 mm)

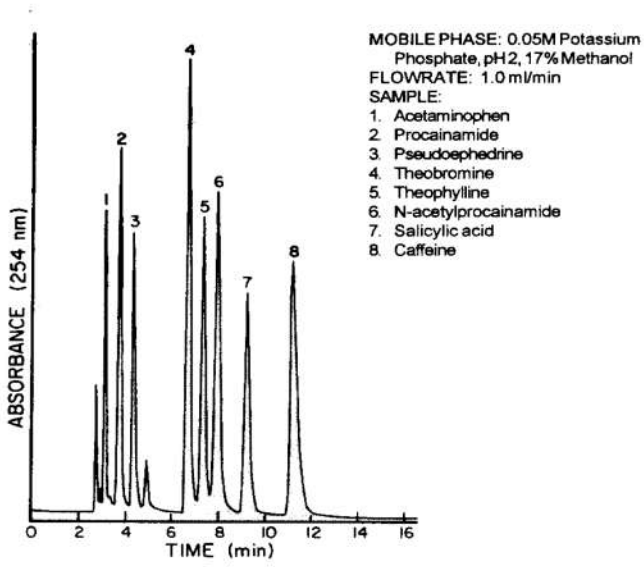
PoroPhase SCD100

- **No silanol suppressing additives**
- **Unique Selectivity "Short Chain"**
- **Suitable for basic, mildly acidic, and neutral molecules**
- **Excellent Stability**
- **High Resolution**

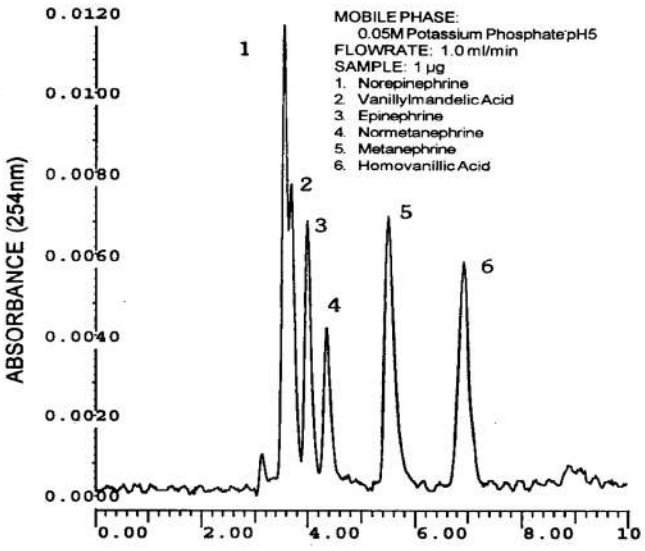
PoroPhase SCD100 is a 100 Å, 5m, short chain reversed phase support based on short alkyl chain ligand bond (CN & EC). It is treated with a proprietary silanol deactivation process which generally eliminates the need for silanol suppressing additives.

Basic drugs can be analyzed with excellent resolution and minimal tailing in standard phosphate/ methanol mobile phases as illustrated in the figures to the right

Drug Mixture



Catecholamines



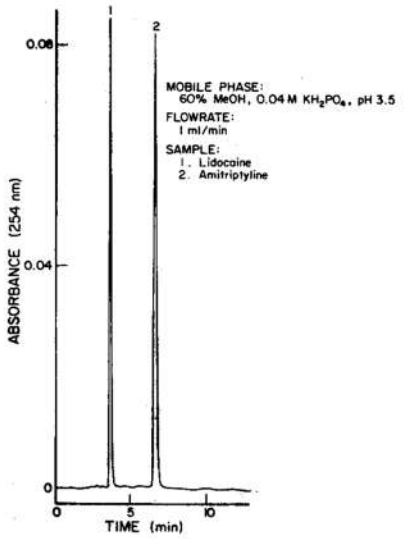
- **Drugs**
- **Organic Acids**
- **Catecholamines**
- **Vitamins**

Short Chain - Excellent Resolution

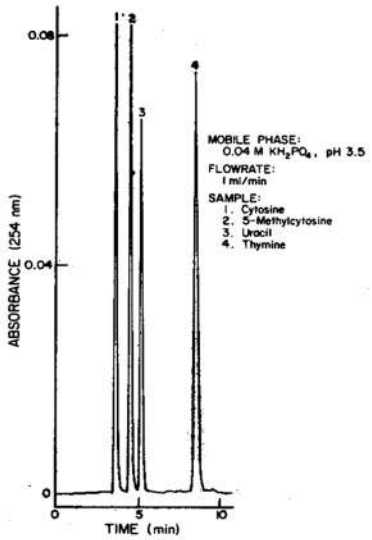
The short alkyl chain ligand bond (CN & EC) a special selectivity which is complementary to that of C-18 (1). Excellent separations can be obtained for basic drugs.

In the separation of Pyrimidines, illustrated below, a unique selectivity is demonstrated which allows two compounds to be eluted before Uracil. Uracil is often used as a solvent front marker.

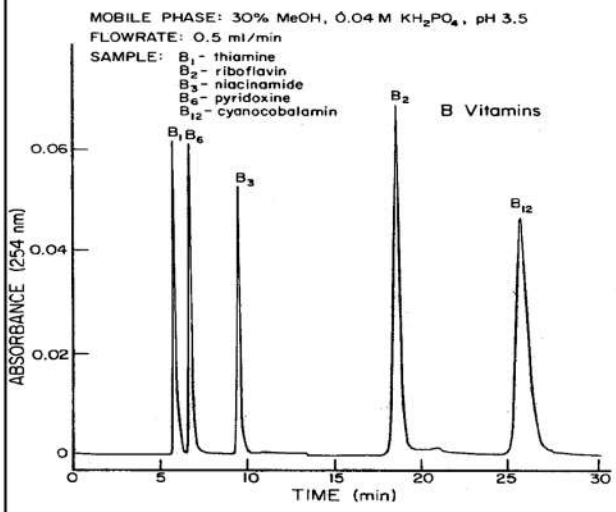
Antiarrhythimics & Antidepressants



Pyrimidines



B Vitamins



References:

(1) H.H. Freiser, M.P.Nowlan and D.L.Gooding, Reversed phase hgh-performance liquid chromatography of basic drugs on a silanol deactivated suport, J.Liq.Chromatogr., 12(5) 827-844 (1989).

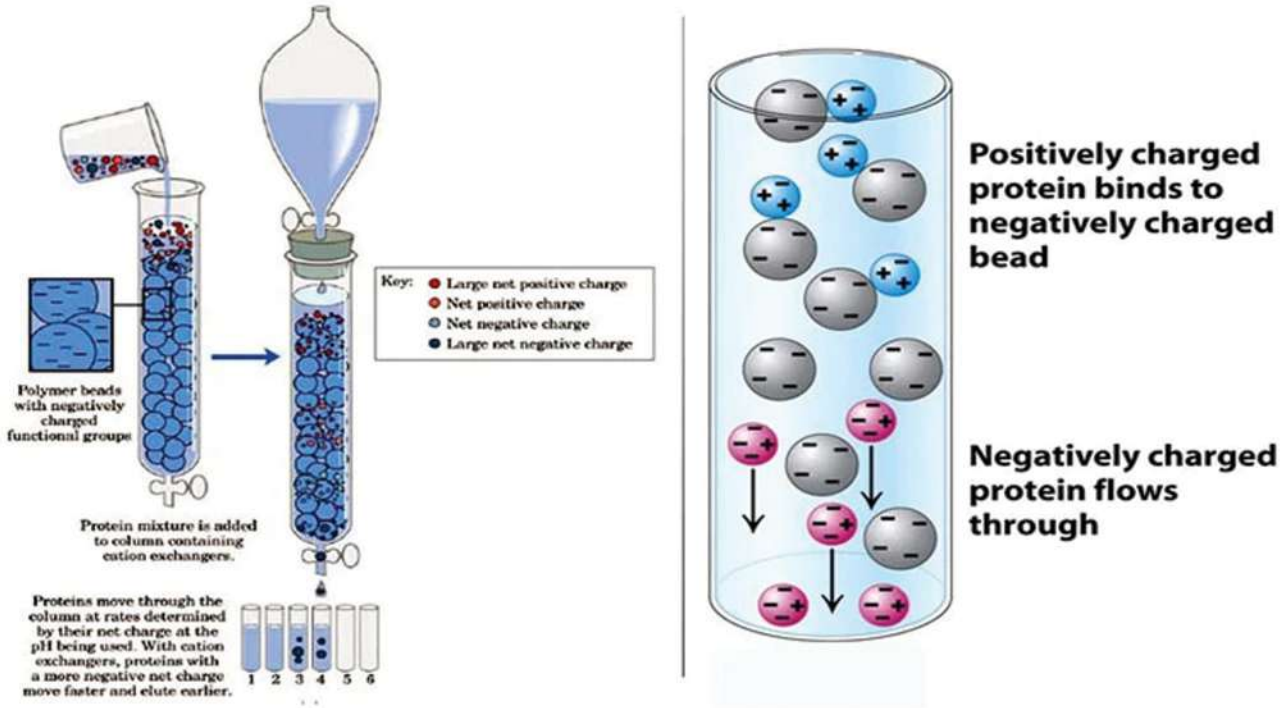
M. Bogusz, M.Erkens, R.D.Maier and I. Schroder, Applicability of reversed-phase base-deactivated columns for systematic toxicological analysis, J. Liq. Chromatogr., 15(1) 127-150 (1992).

RSolv® Axion Columns

Ion Exchange Columns

Key Features:

- Mobile Phase Compatibility: Compatible with aqueous and most organic solvents
- pH Range: Operates efficiently between pH 2 to 8
- Pore Size Range: 300 Å to 1000 Å
- Particle Size Range: 6µm to 7µm
- Column Dimensions: Length: 33 mm to 250 mm and Inner Diameter: 2.1 mm to 10 mm
- Surface chemistry: Available with proprietary polyamide as well as crosslinked polyethylenemine coatings
- MW ranges for weak Cation and Anion exchange columns: For separation of proteins upto 200000 Da
- Functional groups: For Cation exchange columns - Sulfopropyl
  For Anion exchange columns - Carboxymethyl, Quaternary Amine (fully quaternized PEI)



Note:

- Cation exchange columns are based for analysis of enzymes, proteins, catecholamines, peptides, hemoglobin variants, glycosylated hemoglobins, and crystallins
- We also offer Q-300 column which has a support whose ionization has no pH dependence
- All of our strong Cation exchange column supports have constant ionization above pH 3

MADE IN USA

RSolv®
LIFE SCIENCES

Specifications of RSolv® Axion Columns

- ***AX300 (Weak Anion Exchanger)***

AX300 support is a crosslinked polyethyleneimine phase on 6-7µ, 300Å, silica. Selectivity can be altered by mobile phase composition, and pH affects ionization of both the support and the solute. AX-300 permits analysis of proteins up to molecular weights of 200,000 daltons. AX300 has excellent recoveries and loading capacity e.g., 22mg ovalbumin can be loaded onto a 250x4.6 column with no overloading effects

- ***CM300 (Weak Cation Exchanger)***

CM300 support has a polyamide coating containing carboxymethyl groups and is bonded to a 6-7µ, 300Å, silica. Selectivity can be altered by mobile phase salt composition, and pH affects ionization of both the support and the solute. CM-300 permits analysis of proteins up to molecular weights of 200,000 daltons and exhibits excellent recoveries as well as high loading capacity

- ***S300 (Strong Cation Exchanger)***

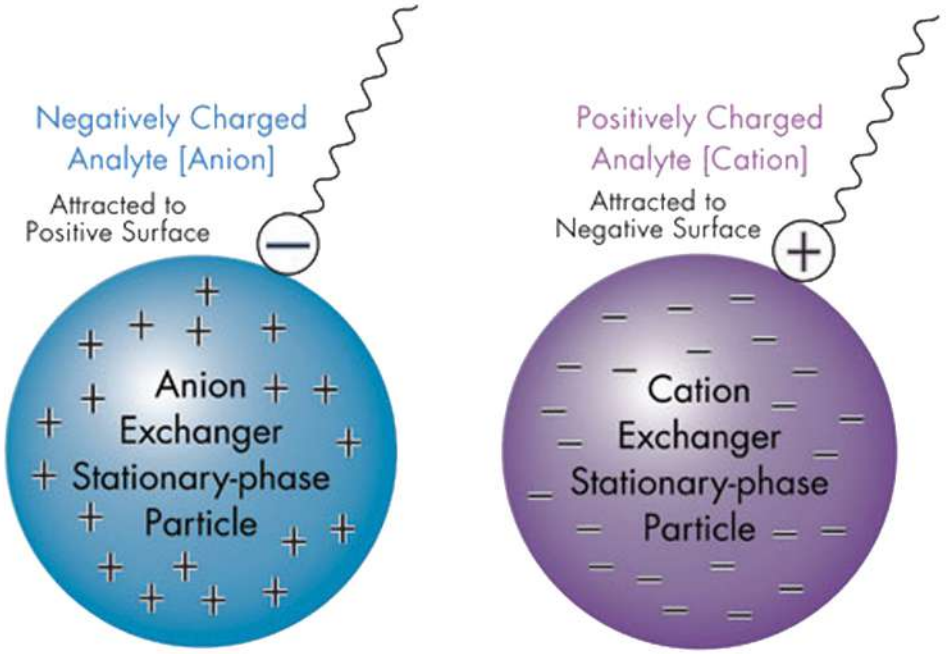
S300 support has a polyamide coating containing sulfopropyl functional groups, bonded to a 6-7µ, 300Å, silica. Ionization of the functional groups on this bonded phase is constant above pH 3. S-300 columns are a good choice for the separation of basic proteins

- ***S1000 (Strong Cation Exchanger)***

S1000 support has a polyamide coating containing sulfopropyl functional groups bonded to a 7µ , 1000Å, silica. Ionization of just the solute affected by pH above pH3. S-1000 columns are excellent columns for the fast analysis of glycosylated hemoglobin.support has a polyamide coating containing sulfopropyl functional groups bonded to a 7µ , 1000Å, silica. Ionization of just the solute affected by pH above pH3. S-1000 columns are excellent columns for the fast analysis of glycosylated hemoglobin

- ***Q300 (Strong Anion Exchanger)***

Q300 support has fully quaternized, crosslinked polyethyleneimine phase on 6-7µ, 300Å silica. Ionization of this support has no pH dependence. Q-300 columns are excellent columns for the rapid separation of proteins and enzymes



MADE IN USA

Axion Columns

RSolv Axion Cation exchange columns exhibit excellent resolution, high loading capacity, compatibility with nonionic detergents and organic solvents, and offer high recovery of biological activity. Suggested applications include proteins, enzymes, nucleotides, peptides, hemoglobins, and catecholamines.

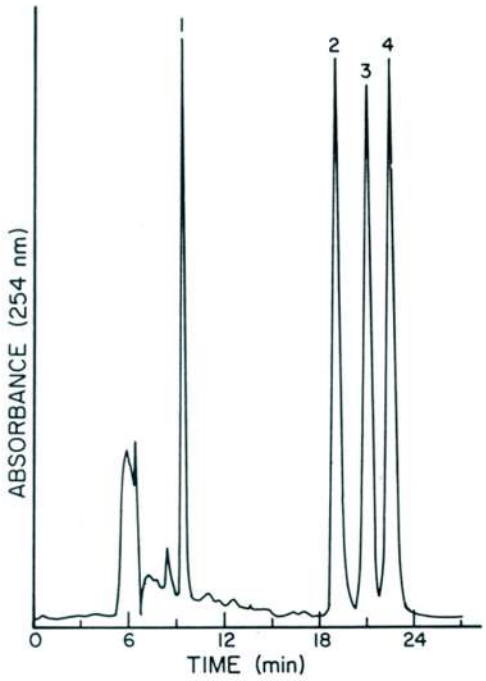
WCX
Axion CM100

5µ, 100Å, Spherical Silica
This weak cation exchanger has a polyamide coating containing carboxymethyl groups and is compatible with aqueous and many organic solvents in the pH range of 2-8. Selectivity can be altered by mobile phase salt composition and pH which affects ionization of both the support and the solute. This support is a superb choice for the separation of small cationic compounds such as catecholamines.

SCX
Axion S1000

7µ, 1000Å, Spherical Silica
This strong cation exchanger has a polyamide coating containing sulfonic acid functional groups. It is compatible with aqueous and many organic solvents in the pH range of 2-8. Ionization of just the solute is affected by pH above 3. This is an excellent column for the fast analysis of glycosylated hemoglobins.

Catecholamines



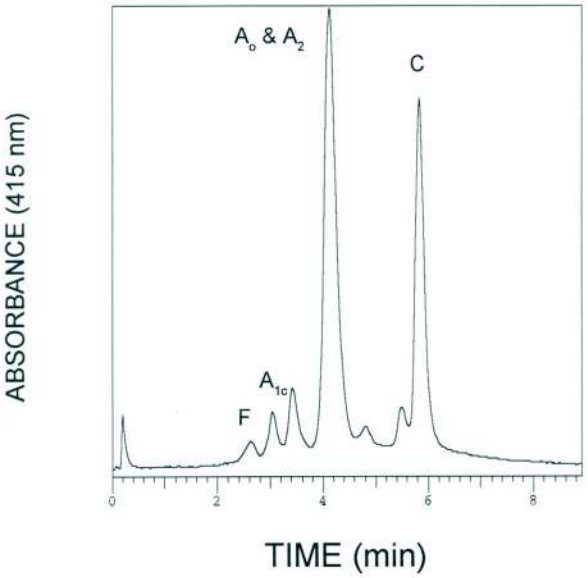
RSolv Axion CM100
250 X 2.1 mm I.D.

Mobile phase
0.35 M KH2PO4, pH 5.9

Flow rate:
0.4 ml/min

Sample:
1 L-Dopa
2 Epinephrine
3 Norepinephrine
4 Dopamine

Hemoglobin



RSolv Axion S1000
50 X 2.1 mm I.D.

Mobile phase
Buffer A: 35 mM Bis-Tris, 3mM Ammonium Acetate, 100 mg/L Potassium Cyanide, pH 6.2
Buffer B: 35 mM Bis-Tris, 16.86 mM Ammonium Acetate, 150 mM Sodium Acetate, 100 mg/L Potassium Cyanide, pH 6.4

Gradient:
0% to 40% B in 1.6 min, 40% to 50% B in 1.2 min, 50% to 100% B in 1.6 min, 100% B for 0.4 min, 100% to 0% B in 0.2 min

Flow rate:
1.0 ml/min

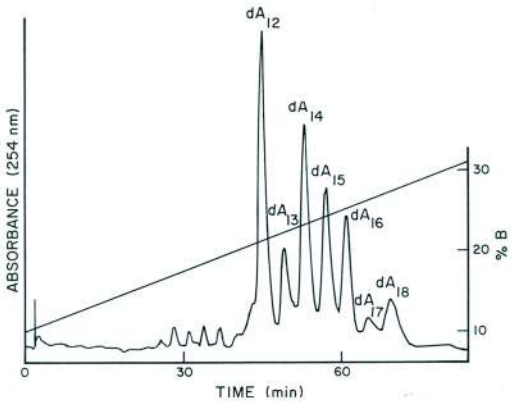
Sample:
AC Trait

WAX

Axion AX100

5µ, 100Å, Spherical silica
This weak anion exchanger is a crosslinked polyethyleneimine support compatible with aqueous and many organic solvents in the pH range of 2-8. Selectivity can be altered by mobile phase composition and pH which affects ionization of both the support and the solute. This 100Å support provides a high surface area for the separation of small molecules. It provides excellent separations of peptides, nucleotides, acidic molecules and oligonucleotides of up to 30 residues.

Oligodeoxyadenylic Acid



RSolv Axion AX100
100 x 4.6mm column.

Mobile phase
A: 0.05 M NaH_2PO_4, pH5.9
+30% Methanol
B: 0.05 M NaH_2PO_4
1.0 M $(NH_4)2SO_4$ + 30% Methanol

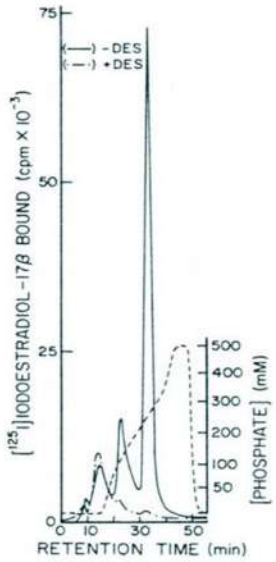
Flow rate:
0.6ml/min

Sample:
Oligodeoxyadenylic acid p(dA)12-18

Axion AX1000

7µ, 1000Å, Spherical silica
This weak anion exchanger is a crosslinked polyethyleneimine phase compatible with aqueous and many organic solvents in the pH range of 2-8. Selectivity can be altered by mobile phase composition and pH affects ionization of both the support and the solute. It is particularly well suited for the separation of proteins larger than 200,000 Daltons such as estrogen receptor isoforms.

Estrogen Receptor Isoforms



RSolv Axion AX1000
250 x 4.6mm column

Mobile phase
A: 10 mM KH2PO4, 1.5 mM EDTA,
1.0 mM DTT 10% (v/v) glycerol, pH 7.4
B: 500 mM KH2PO4, 1.5 mM EDTA,
1.0 mM DTT 10% (v/v) glycerol, pH 7.4

Temperature:
4°C

Flow rate:
1.0 ml/min

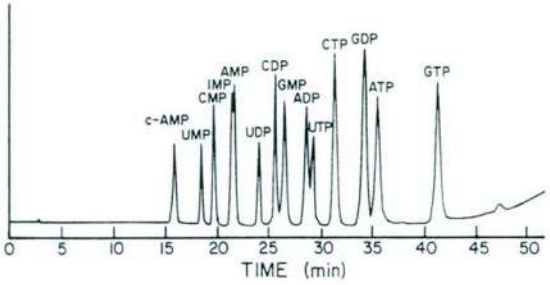
Sample:
Estrogen receptor isoforms

SAX

Axion Q100

5µ, 100Å, Spherical silica
Q100 is a strong anion exchange quaternized crosslinked polyethyleneimine support. It is compatible with aqueous and many organic solvents in the pH range of 2-8. Ionization of this support has no pH dependence. This 100Å packing material is an excellent choice for the rapid separation of peptides, small proteins and small anionic particles such as nucleotides.

Nucleotides



RSolv Axion Q100
250 x 4.6mm column

Mobile phase
A: 0.01 M NaPO., pH 6.6
B: 0.7 M NaPO4, pH 6.6

Gradient:
100% A for 5min, 0-25% B in 11.3 min
25-45%B in 18 min. 45-100% B in 25 min

Detection:
UV 254 nm

Flow rate:
1.0 ml/min

Sample:
Nucleotides

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