SHISEIDO Column List

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Lower-molecular compounds

Is it soluble in water, methanol or acetonitrile?

Normal-phase using low-polar organic solvent such as hexane for a mobile phase. → SILICA | NH2 | CN

Is it ionized in the dissolved status?

Reversed-phase using water-based methanol or acetonitrile for a mobile phase. → C18 Columns

Reversed-phase adding ion-pair reagent to the mobile phase. → C18 Columns

Retained? Too strong → C8DD; Not enough → CR, Others

Reversed-reverse phase hydrophilic compound retained under CH3CN-rich mobile phase (>60%) → PC HILIC

Ion exchange using buffer solution for a mobile phase. → SCX | NH2

C18 Columns

	Size (um)	Pore (nm)	Specific Area (m^2/g)	C%	Density ($umol/m^2$)	pH range		
CAPCELL CORE	2.7	9	150	7	2.9	1.5-10	USP L1 B MS	.Alternative way for the highest efficiency at fast analysis with low pressure in HPLC/UHPLC .For Improved separation including basic compound
MGII	3 (5)	10	300 (260)	15	2.3 (2.7)	2-10	USP L1 B MS	.For multicomponent analysis with a variety of characteristics .For analysis of basic compounds under neutral condition .For high flow rate/high-speed analysis For LC-MS analysis
MGIII, MGIII-H	3 (5)	10	300 (260)	15	2.3 (2.7)	2-10	USP L1 B MS	.For LC-MS analysis / UHPLC-MS(MGIII-H) .For basic compound analysis under acid conditions
IF(1.8µm) IF2(2.2µm)	1.8/2.2	12						For high flow rate/high-speed analysis under high-pressure condition For pursuit of high separation capacity for rapid analysis with HPLC
UG120	3 (5)	12						For separation of hydrophobic compounds For change of separation patterns
MG	3 (5)	10						.For multicomponent analysis with a variety of characteristics .Especially for analysis including coordination compounds
AQ	3 (5)	8	330 (300)	12 (11)	1.7	2-9	USP L1 P	.For analysis of polar compounds .For short-time analysis of hydrophobic compounds
ACR	3 (5)	8	300	17	2.6	1-10	USP L1 A PH	.For analysis under acid condition for semi aliquoting in continuous use
UG80	5	8	340	18	2.5	2-10	USP L1	.For review of analytical conditions aiming at aliquoting .For improving separation of hydrophobic compounds

- Core-shell applied polymer-coating technology. High NTP derived by short diffusion paths.
- Excellent separation property for basic compounds with excellent durability.60Mpa-ressistant.
- A first choice if C_{18} column. First C18 optimized for basic compounds under neutral condition.
- The world's best blocking of silanol group by applying Ultimate Polymer Coating.
- Best balance between polarity and hydrophobicity of the packing material surface.
- Excellent separation property for in any conditions.
- Use of silica substrates with less micropores increases the effective specific surface.
- Improves the lot repeatability of basic compound retention under acid conditions.
- Low bleeding ideal for MS analysis under acid conditions. MGIII-H is 50Mpa-ressistant.
- Optimized Sub2µm colun
- Reduces the influence of
- Realizes the good peak s
- Extremely low-polar pack
- Reduces the secondary e
- Best balance between polarity and hydrophobicity of the packing material surface.
- Inhibits the influence of metal coordination.
- Increase the surface polarity by reducing the rate of C18 group introduction.
- C18 column applicable even 100% water-based phase.
- World's best acid resistance
- High stereoselectivity derived from polymeric bonding.
- The specific surface is high and retention is large due to a small micropore diameter same as UG120.
- Perfect for preparation HPLC because of the high loadability.

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Others

	Size (um)	Pore (nm)	Specific Area (m^2/g)	C%	Density ($umol/m^2$)	pH range		
PC HILIC	5	10	450	-	-	3-7.5	P MS	.For compounds that can not be retained by C18 .For LC-MS analysis
CR (C18+SCX) (1:4/ 1:20/ 1:50)	3 (5)	10-12	-	-	-	2-7	B MS	.For multicomponent analysis including basic compounds .For analysis of LC-MS (no ion-pairs are necessary)
C8 DD	3 (5)	8	300	11	3.8	1.5-10	USP L7 PH	.For multicomponent analysis including polar compounds .For shortening the analysis time
Ph CN	5	12	300	8 (5)	3.7 (13.9)	2-10	USP L11 AR USP L10 AR	.For multicomponent analysis including aromatic rings .For change of separation patterns
NH2 SCX	5	8	540 (450)	14 (9)	1.2 (0.9)	2-8 (2-7)	USP L8 A USP L9 B	.For analysis of polar compounds NH2: Normal phase・anion exchange SCX: Cation exchange

- Different functional groups of UG120 type.
- Advantages of polymer coating is intact (good durability).
- Mixed stationary phases of SCX and C18.
- Prepares columns of different ratios of SCX and C18.
- Introducing C8 group as a functional group.
- Excellent acid and alkaline resistance.
- Lot-to-lot reproducibility comparable to C18 column.
- A column for hydrophilic interaction chromatography.
- Retains polar compounds with acetonitrile of 60% or more.

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Column introduction by sample

Sugar

SUCREBEAD *II*	Separation is achieved by using electro static action between the negative charge generated by dissociation of sugar hydroxyl under alkaline mobile phase condition and the positive charge of the quaternary ammonium on the packing material surface. Flow of the alkaline mobile phase allows direct electrochemical detection. ・Styrene-divinylbenzene-based polymer columns. ・Strong anion exchange column by the quaternary ammonium.	For polysaccharide analysis For oligosaccharide analysis For disaccharide analysis
SUCREBEAD *I*		
NH2	Retains and separates sugars in the normal phase mode. The mobile phase is with water/CH3CN. To apply it to a pulse electrochemical detector, pH balanced solution is mixed with post column. ・pH durability improves with contribution of polymer coating. ・The bridged structure of polyamine allows longer retention and good durability.	For monosaccharide analysis For analysis of disaccharide and oligosaccharide For analysis of sugar alcohol
C18 column (AQ etc.)	Retains and separates derivatized sugar in the reversed phase.	For analysis of derivatized sugar

Nucleic acid

Nucleonavi	Perfect for analysis of DNA and RNA of 20-40 mer. ・Inert specification unaffected by metal. ・Eliminates wall effect by the glass-clad structure. ・Reduced absorption compared to particulate columns.	For DNA/RNA analysis
MGII AQ	Retention and separation by hydrophobic interaction under water-rich condition. AQ allows analysis in the 100% water-based phase (buffer).	For nucleotide analysis For nucleoside analysis For analysis of nucleic-acid bases
PC HILIC	Retains and separates nucleic acid and nucleic-acid base by hydrophilic interaction. Acetonitrile of 60% or more are used for the mobile phase.	
NH2	Retained and separated by the anion exchange mode. Buffer is used for the mobile phase.	
SCX	Retained and separated by the cation exchange mode. Buffer is used for the mobile phase.	

Proteins and peptides

Proteonavi (Wide pore columns)	Follows up retention and separation of peptides and proteins. A column with large retention of proteins and peptides despite the functional group of C4. ・Excellent acid resistance. ・Excellent recovery rate. USP L26	Under acid condition, For analysis of high-molecular compounds For analysis and review of aliquoting
SG300 C18, C8, C1 (Wide pore columns)	Columns for analysis of proteins and peptides with the molecular weight of 10,000 or more. Give a first choice to C8. A lineup of semi-micro columns is available.	For analysis of small amount samples For micro HPLC analysis
ACR, C8DD, etc.	For improving durability of the acid mobile phase analysis including TFA such as peptide mapping. A lineup of micro columns is available.	

Biological samples

MF series C8, Ph, SCX	A column that deproteination is available on line. Proteins with heavier molecular weight are eluted first in the size elimination mode. The target component is retained by other separation modes. In addition to the analysis columns, a lineup of cartridge columns for column switching is available. ・Retention using hydrophobic interaction: in descending order of hydrophobicity, C8 > Ph ・Retention using ion exchange function for basic compounds: SCX	For analysis of drugs and metabolites in biological samples For low-molecular compound analysis in high molecular Pretreatment columns in the column switching method

Optical resolution columns

Chiral CD-Ph	A column that cyclodextrin (CD) is combined as a chiral selector. Retention by hydrophobic interaction can be obtained by phenylcarbamating CD. The hit rate is high among basic and neutral compounds including a benzene ring.
Ceramospher RU-2 Ceramospher RU-1	An optical resolution column based on clay mineral. A heavy load can be processed because it has the layered interaction field. Rutenium complex is used for a chiral selector. Customized specification of a different elution order is also available.

SHISIEDO CO.,LTD
Frontier Science Business division

URL: http://hplc.shiseido.co.jp/main/

B Excellent for retention and peak shape
P Suitable for retention of polar compounds
MC Excellent peak shape of metal-coordination compounds
A Suitable for retention of acid compounds
AR Suitable for retention of compounds with aromatic rings
HPR High pressure resistance of 40MPa
MS Suitable for use in MS
pH Excellent pH resistance