



The world 's first multi-mode ODS column

# Scherzo C18 Family

Particle Size 3µm  
Pore Size 13nm  
Purified Porous Silica

## Multi-Mode Reversed Phase + Anion Exchange + Cation Exchange

Simultaneous analysis of both cationic and anionic compounds

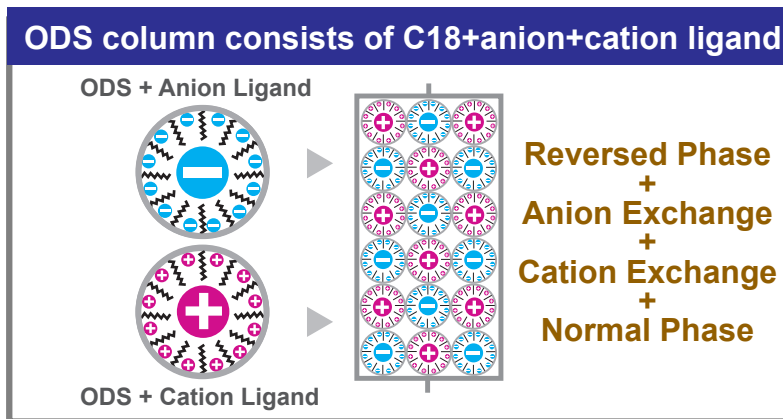
ODS + Ion Exchange separation mode

Three kinds of packings with different ion exchange capacities

For polar compounds

Different selectivity from a conventional ODS column

LC-MS compatible without using ion-pair reagent

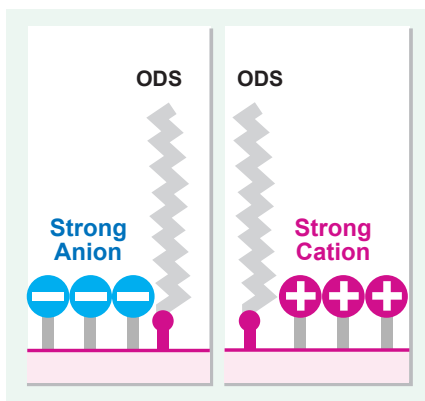


Scherzo family columns can operate without adding an ion-pairing reagent which is required for conventional ODS columns. In addition, both anionic and cationic compounds are retained on this column. The hydrophobicity of the Scherzo family is similar to that of a conventional ODS column, so analysis of a compound in combination with a Unison UK-C18 column (conventional ODS phase) will be very effective for method development.

## INNOVATION !

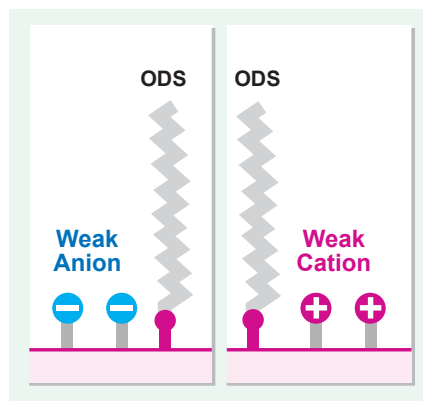
### Three kinds of ODS with different ion exchange capacities

Scherzo SS-C18



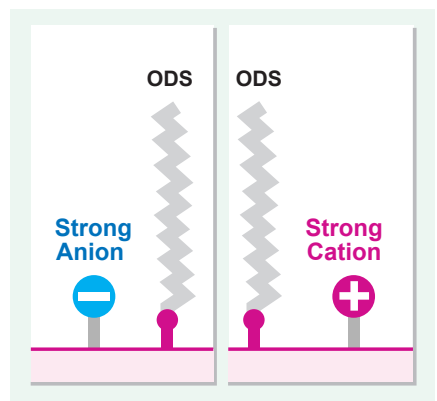
Large amount of strong ionic ligands loaded onto this ODS column. Effective for improved retention of zwitterions or weak ionic compounds

Scherzo SM-C18



Weak ionic ligands adequately loaded onto this ODS column. Designed for separation of basic/acidic compounds at neutral pH condition

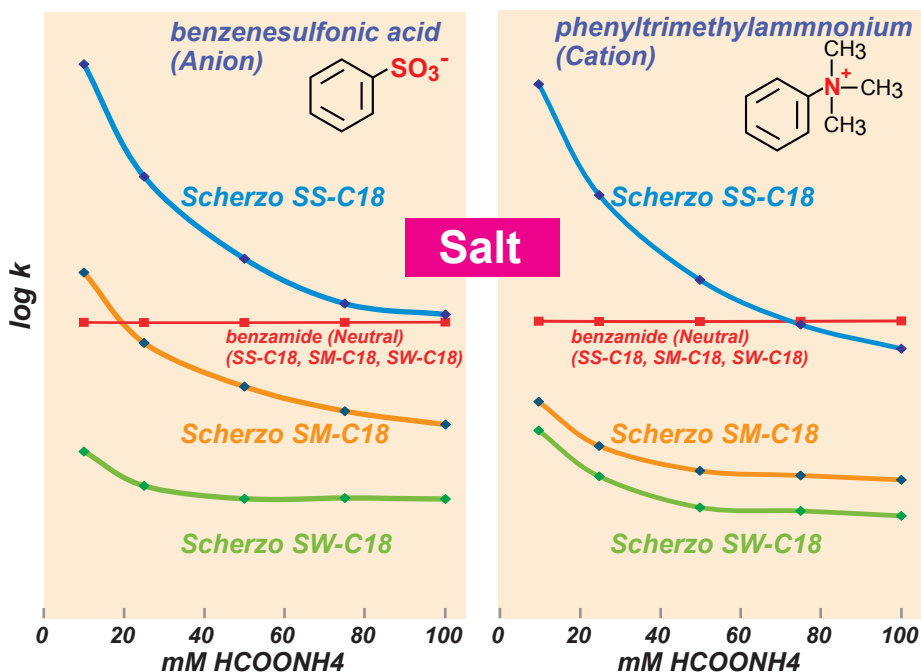
Scherzo SW-C18



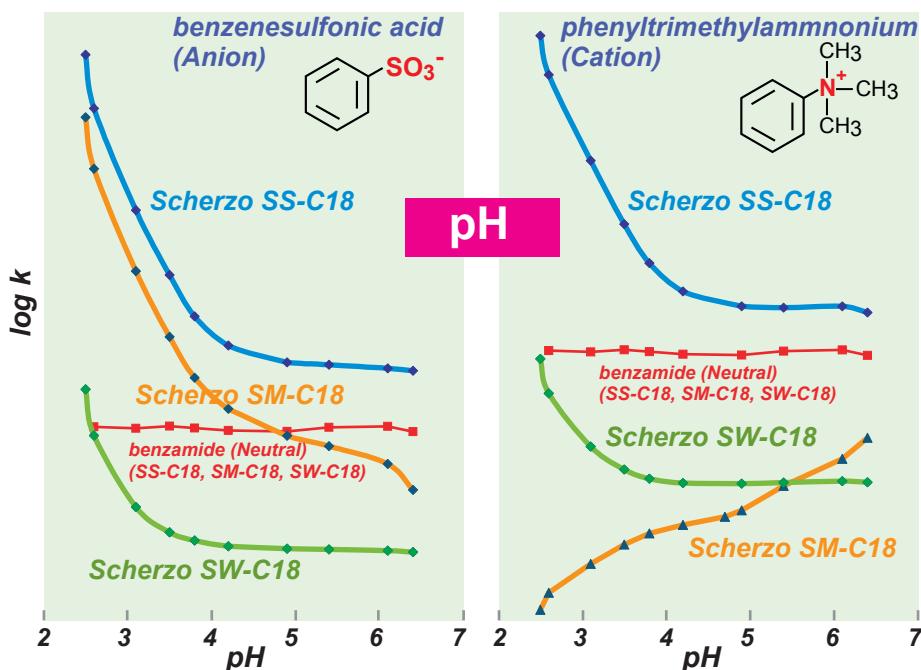
Low amount of strong ionic ligands loaded onto this ODS column. Effective for strong ionic compound elution or basic compounds with formic acid eluent

## Retention properties of multi-mode ODS, Scherzo family

You can find the best HPLC conditions by optimizing salt concentration or pH to improve retention / separation for ionic compounds, which is difficult on a conventional ODS column.



For the Scherzo multi-mode ODS column, optimizing the salt concentration is as important as optimizing the organic solvent. In the left figure, retention of both anionic and cationic compounds are decreased when salt concentration is increased. At the same salt concentration, SS-C18, which consists of a large amount of strong ionic ligands, retains strongly. SM-C18, with weak ionic ligands has medium retention. And finally, SW-C18, which has a low amount of strong ionic ligands, shows the lowest retention.



pH is also an important factor for the elution of ionic compounds. Retention will be dramatically changed between neutral pH (ammonium acetate or formate) and low pH (formic acid) conditions. SS-C18 and SW-C18 consist of strong ionic ligands and retention will be increased under low pH conditions. On the other hand, SM-C18 consists of weak ionic ligands which cannot ionize at a low pH - therefore, retention of basic compounds will be decreased due to a decrease in ionization capacity at low pH.

## Product Information

Spec.: purified porous silica, 3 $\mu\text{m}$  particle, 13nm pore, ODS+anion+cation ligand

Column Name	Column I.D.	Column Length	Guard Column
Scherzo SS-C18	0.075mm - 0.5mm	10mm, 20mm, 30mm	Guard Holder
Scherzo SM-C18	1mm, 1.5mm, 2mm, 3mm	50mm, 75mm, 100mm	Cartridge Column
Scherzo SW-C18	4.6mm, 6mm, 10mm	150mm, 250mm, 500mm	

Imtakt USA ([info@imtaktusa.com](mailto:info@imtaktusa.com)) North America

Imtakt Corp./JAPAN ([info@imtakt.com](mailto:info@imtakt.com)) Other Countries

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