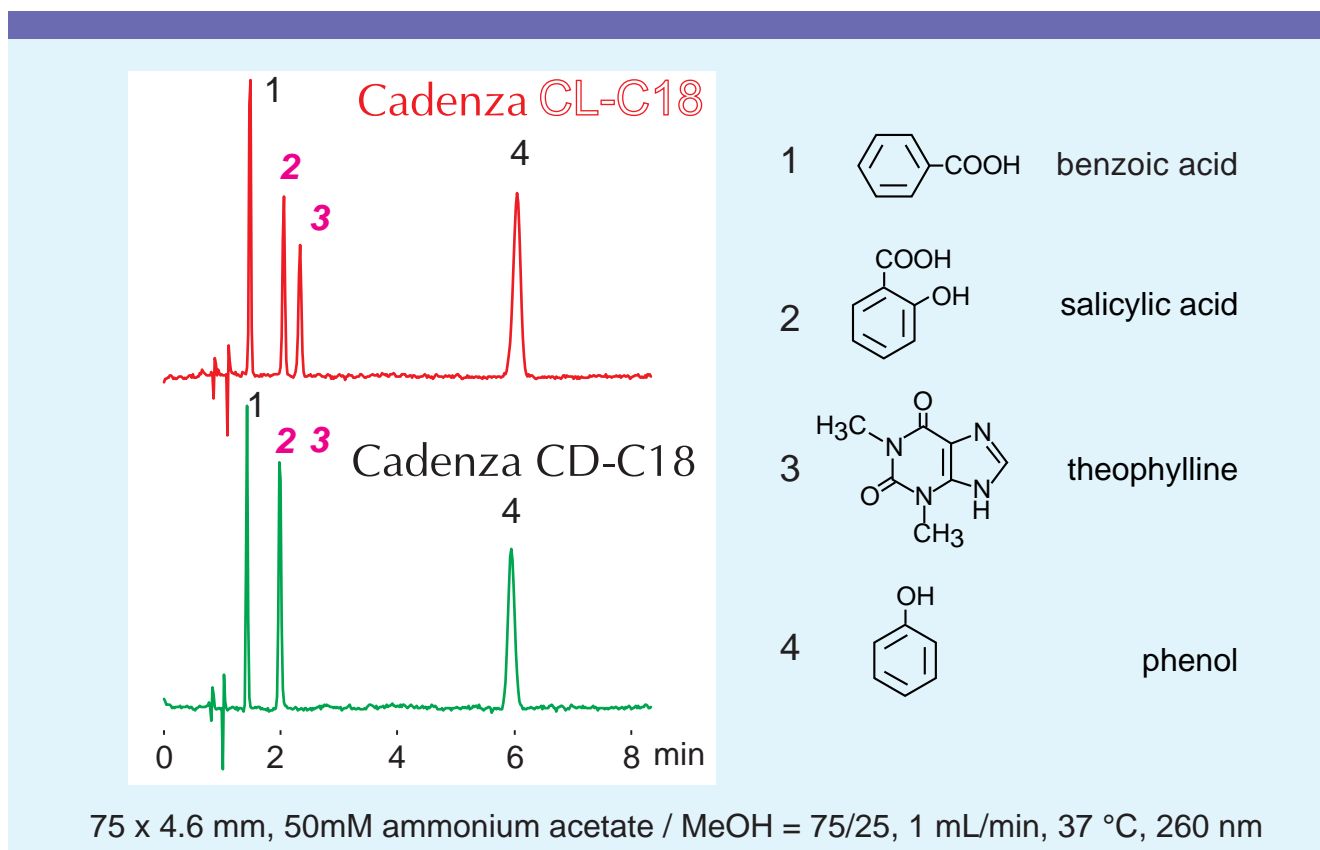


Cadenza CL-C18
Cadenza CD-C18

75 x 4.6 mm

Technical

Separation properties for acidic compounds on CL-C18



For certain applications, better separation can be achieved by using CL-C18 instead of CD-C18. Analytes differing by pKa value or structure, that co-elute on CD-C18, may in fact be separated by CL-C18.

The manufacturing process of CL-C18 employs proprietary "controlled end-capping" technology. This novel manufacturing process allows for a controlled amount of residual silanols to remain on the silica surface of CL-C18, providing different selectivity than the fully end-capped CD-C18.

In the figure above, the separation of ionized salicylic acid (neutral pH conditions) and theophylline is obtained on CL-C18, but not on CD-C18. The observed longer retention for theophylline on CL-C18 is due to an increase in electrostatic interaction between analyte and residual silanols. On the other hand, acidic compounds (benzoic acid and salicylic acid) showed similar retention on both ODS phases. This observation shows that there is no ion-exclusion between these ionized acidic compounds and silanols.

Cadenza CD-C18 and Cadenza CL-C18 have the same base silica and ODS ligand density. The only difference between the two phases is the amount of residual silanols on the silica surface. The separation / retention mechanisms of analytes of interest can be better understood by using both ODS phases under the exact same experimental conditions. Thus - both columns used together will be useful for separation optimization.