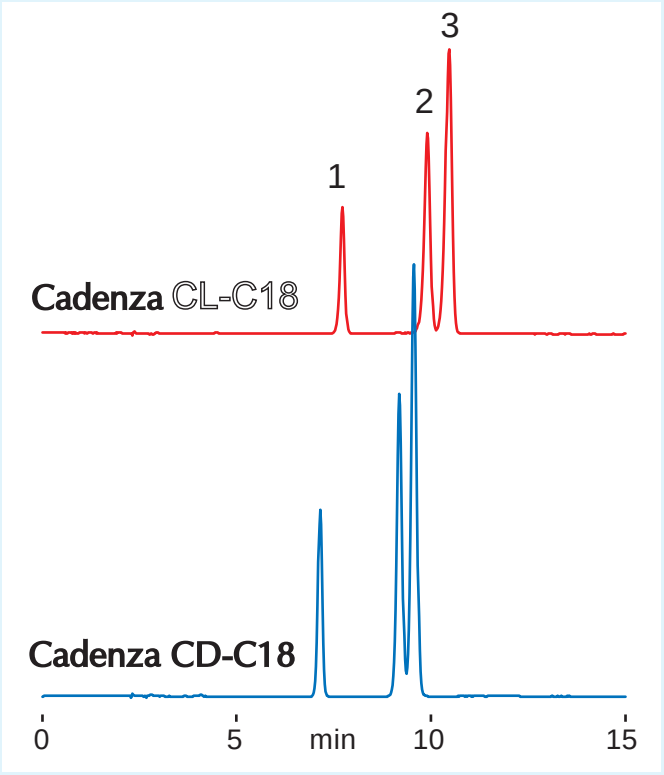
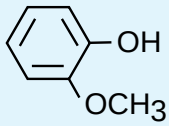
Cadenza CL-C18
Cadenza CD-C18

150 x 4.6 mm

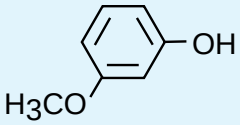
Technical

Positional isomers separation on CL-C18

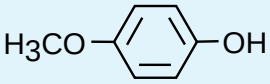


1 

o-methoxyphenol

2 

m-methoxyphenol

3 

p-methoxyphenol

150 x 4.6 mm, 0.1% acetic acid / MeOH = 60 / 40, 0.7 mL/min, 37 deg.C, 260 nm

In addition to hydrophobic interaction, several secondary interactions occur within an ODS column. For example, silanols or siloxanes from the surface of silica can also interact with certain analytes (electrostatic interaction). Many compounds are affected by this secondary interaction.

Both CD-C18 and CL-C18 have the same ODS ligand density. The only difference being CL-C18 is designed to have an optimal amount of residual silanols (CD-C18 is fully end-capped).

In the di-substituted benzene separation above, separation is better on CL-C18 than CD-C18. The reasons for improved separation on CL-C18 are as follows: First, the silanols (dipole moment) on CL-C18 interact with the phenolic OH groups (dipole) by dipole-dipole interaction. Second, the pi electrons in the aromatic ring are localized by substituent group (causing dipole moment). The sum of these dipole moments results in strong dipole-dipole interaction between these analytes and residual silanols on CL-C18. Overall, separation for these positional isomers is improved on CL-C18.

Different separations can require different column selectivities. Using both CD-C18 and CL-C18 will expand the separation possibilities.