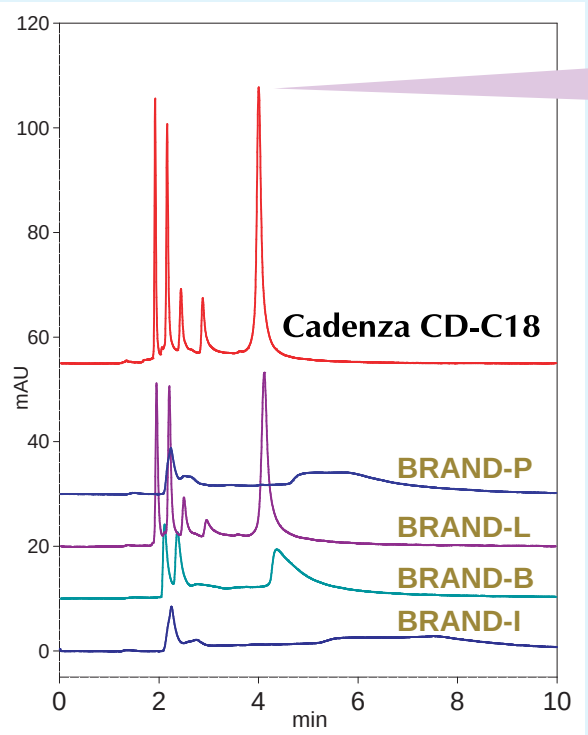
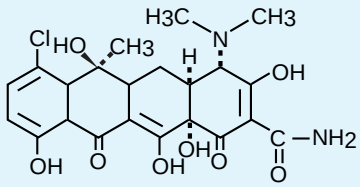
Cadenza CD-C18 150 x 4.6 mm Technical

Comparison of Antibiotic Peak Shapes

Antibiotic Peak Shape Appears Easy





chlortetracycline

150 x 4.6 mm
10 mM formic acid / acetonitrile = 75 / 25
1.0 mL/min, 37 deg.C, 260 nm

Cadenza CD-C18's surface structure offers the finest peak response in the market.
Antibiotics have physiological activities and complex structures, and are also one of the mostly difficult materials for HPLC. Chlortetracycline shows an chelating structure and exhibits unusual interaction in the stationary phase.

The above chromatograms compare the features of columns on the market today. LC-MS often requiers formic acid in the mobile phase, and under these difficult conditions, Cadenza offers the best peak shape to compared columns. This is related to the influence of metal impurities found on the surface in the stationary phase. All of the comparable columns use "highly pure silica" suggesting that a slight amount of metal impurity is influencing the eluent behavior of the solute.

Cadenza CD-C18 employs a different design for the stationary phase than conventional columns. This is polymeric endcapping, a design aiming to minimize the non-specific interaction of silica materials. Polymeric endcapping has a silicone-covered structure on the silica material. This design physically and chemically covers the interaction of the metallic impurities and solute on the material. This sheltering effect provides excellent peak shape even for chemical compounds such as chlortetracycline that are sensitive to the stationary phase.

The next-generation in high-resolution HPLC column is Cadenza CD-C18. The design offers the highest number of plates as well as excellent peak shape.