Conventional HPLC columns are generally alkyl-bonded silica gels. Silica based phases are mechanically stable and provide high efficiency. However, they cannot be used under alkaline conditions and their residual silanol groups can adsorb organic bases.

HPLC columns packed with polystyrene gels are free from residual silanol groups and can be used under alkaline conditions, but they provide low efficiencies and undergo excessive shrinkage and swelling with various solvents, thus limiting the range of eluents and flow rates that can be used. Polymer-based reversed-phase columns have, therefore, generally been viewed as inferior in strength and separation efficiency.

apHera™ reversed phase columns provide the superior advantages of both silica and polystyrene columns, without the disadvantages of either. This was accomplished using a vinyl alcohol copolymer base that keeps the surface wetted even with high carbon loads. The porous structure has an average pore diameter large enough to produce ideal results for small analytes, peptides and proteins.
Figure 2. Peptide Mix at High pH on apHera C18

column: apHera C18, 15 cm x 4.6 mm I.D., 5 µm
mobile phase A: 10 mM piperidine/HCl, pH 11.1
mobile phase B: 50:50, (20 mM piperidine/HCl, pH 11.1):acetonitrile
flow rate: 0.45 mL/min. (4 mm ID); 0.6 mL/min. (4.6 mm ID)
temp.: 35 °C
det.: 220 nm
injection: 7 µL (4 mm ID), 10 µL (4.6 mm ID)
sample: peptide mix in mobile phase A
gradient: col vols %A %B
0 80 20
20 0 100

TRADEMARK: apHera – Sigma-Aldrich Biotechnology LP