



# apHera Reversed-Phase HPLC Columns

## Features

- Stable vinyl copolymer base
- pH range 2-12
- 300 Å pore size
- Stable in all organic solvents
- Amenable to washing with alkaline solutions
- Available as C4, C8, and C18

## Applications

- bases/pharmaceuticals
- peptides
- proteins

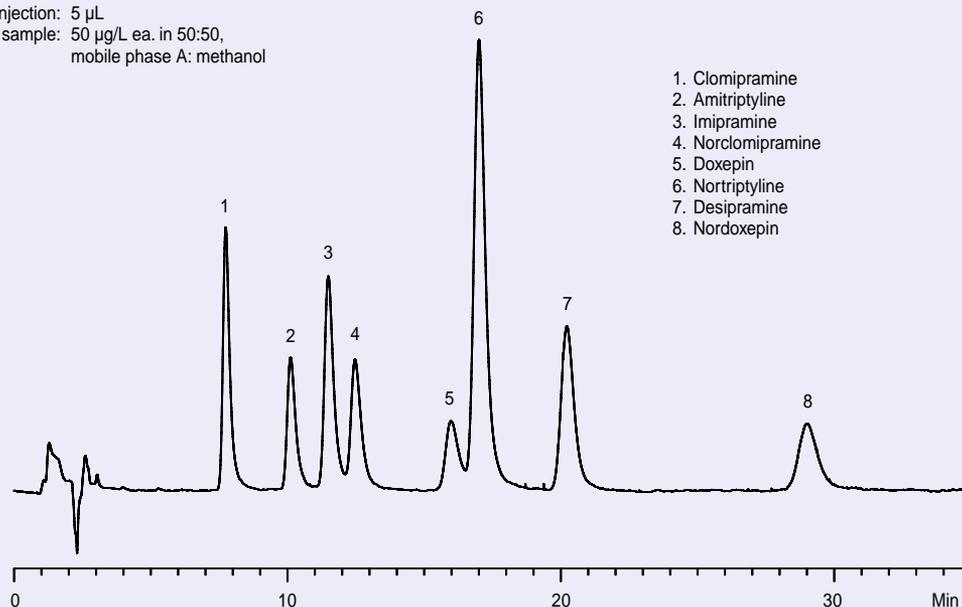
Conventional HPLC columns are generally alkyl-bonded silica gels. Silica based phases are mechanically stable and provide high efficiency. However, they cannot be used under alkaline conditions and their residual silanol groups can adsorb organic bases.

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 1. Tricyclic Antidepressants at High pH on apHera C18

column: apHera C18, 15 cm x 4.6 mm I.D., 5 µm  
mobile phase A: 10:90, (0.1M piperidine/HCl, pH 11.1):water  
mobile phase B: 10:90, (0.1M piperidine/HCl, pH 11.1):acetonitrile  
mobile phase mixing ratio: A:B = 40:60  
flow rate: 0.6 mL/min.  
temp.: 35 °C  
det.: 215 nm  
injection: 5 µL  
sample: 50 µg/L ea. in 50:50,  
mobile phase A: methanol



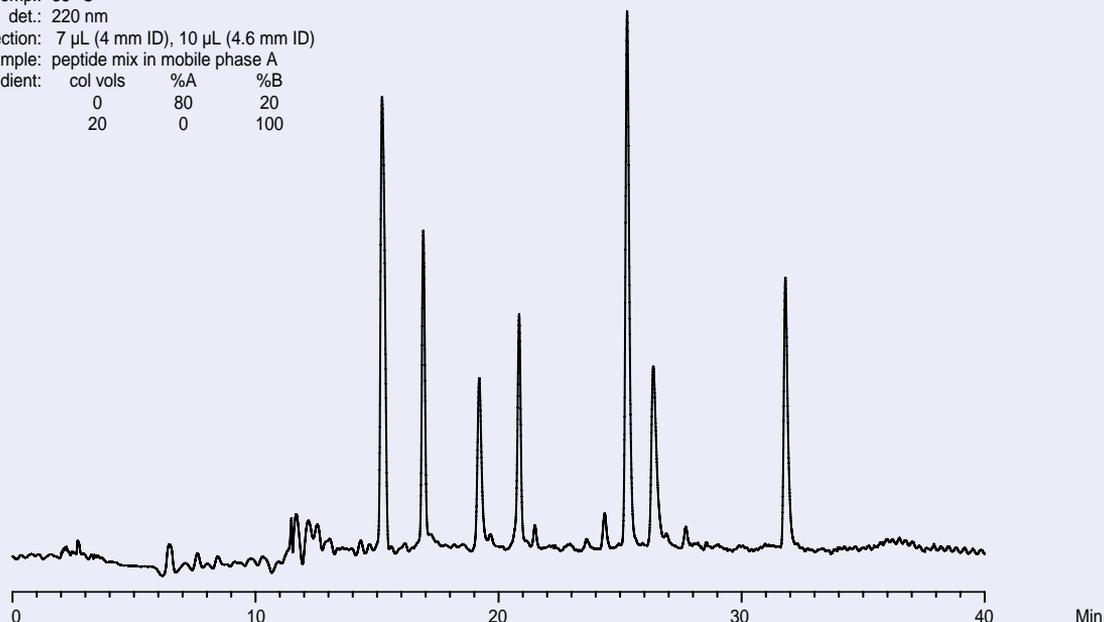
1. Clomipramine
2. Amitriptyline
3. Imipramine
4. Norclomipramine
5. Doxepin
6. Nortriptyline
7. Desipramine
8. Nordoxepin

G004776



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



## Ordering Information

### apHera Columns

	Length (cm)	I.D. (mm)	Cat. No.
<b>apHera NH<sub>2</sub></b>	15	4.6	56401AST
	25	4.6	56403AST
	15	2.0	56400AST
<b>apHera C18</b>	15	4.6	56102AST
	25	4.6	56103AST
	15	2.0	56100AST

	Length (cm)	I.D. (mm)	Cat. No.
<b>apHera C8</b>	15	4.6	56202AST
	25	4.6	56203AST
<b>apHera C4</b>	15	4.6	56302AST
	25	4.6	56303AST

TRADEMARK: apHera – Sigma-Aldrich Biotechnology LP

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*Accelerating Customers'  
 Success through Innovation and  
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