

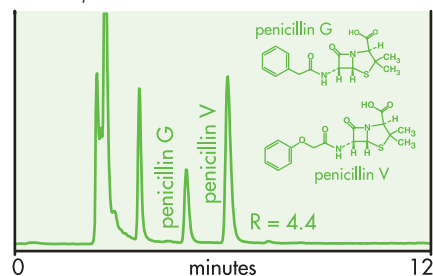
VYDAC® Columns for USP and Pharmaceutical Analyses

The VYDAC SELECTAPORE™ column line consists of three C18 reversed phases for small molecule analysis. Variations in selectivity based on bonding chemistry and pore size improve the chances of detecting contaminants in new pharmaceutical products. For routine analyses of pharmaceuticals, on the other hand, analytical conditions and suitability requirements are specified by USP. The VYDAC SELECTAPORE 300P column

is recommended for USP analyses. The polymeric C18 phase of this column contributes stability and long column life. The specially treated base silica minimizes tailing for alkaline analytes, and the 300 Å pore size provides uniform surface access for large multi-ring molecules. Performance is guaranteed to meet USP suitability criteria, as indicated by the examples shown here.

Penicillin V

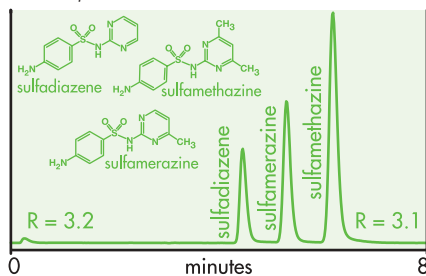
USP requires R not less than 3.0.



Column: VYDAC 218WP54 (C18, 300 Å, 5 µm, 4.6 mm ID x 250 mm). Detection: 254 nm. Flow: 1.0 mL/min. Mobile phase: 60:40 water:ACN with 1% HOAc. Isocratic.

Trisulfapyrimidines

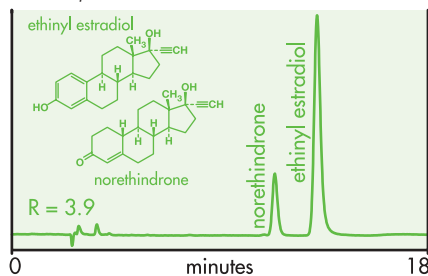
USP requires R not less than 3.0.



Column: VYDAC 218WP54 (C18, 300 Å, 5 µm, 4.6 mm ID x 250 mm). Detection: 254 nm. Flow: 1.0 mL/min. Mobile phase: 86:13:1 water:ACN:glacial acetic acid. Isocratic.

Norethindrone and ethinyl estradiol

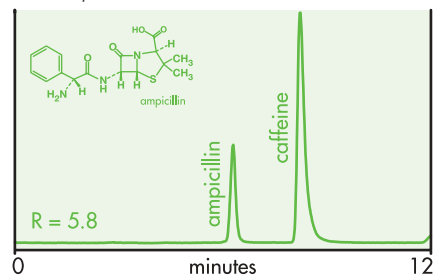
USP requires R not less than 2.0.



Column: VYDAC 218WP54 (C18, 300 Å, 5 µm, 4.6 mm ID x 250 mm). Detection: 200 nm. Flow: 1.0 mL/min. Mobile phase: 20 mM KH₂PO₄, pH 6.0, 35% ACN. Isocratic.

Ampicillin

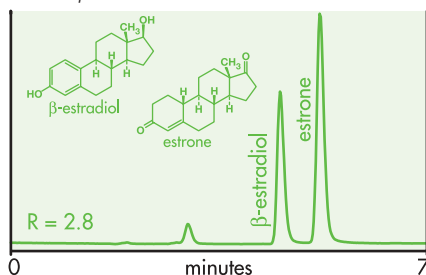
USP requires R not less than 2.0.



Column: VYDAC 218WP54 (C18, 300 Å, 5 µm, 4.6 mm ID x 250 mm). Detection: 254 nm. Flow: 1.0 mL/min. Mobile phase: 909:80:10:1 water:ACN:1M KH₂PO₄:1N acetic acid. Isocratic.

β-Estradiol

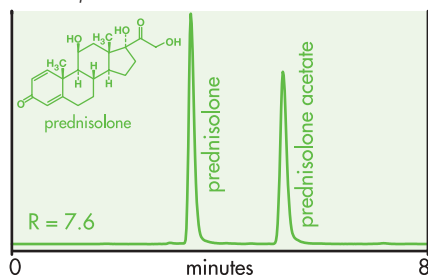
USP requires R not less than 2.0.



Column: VYDAC 218WP54 (C18, 300 Å, 5 µm, 4.6 mm ID x 250 mm). Detection: 205 nm. Flow: 1.0 mL/min. Mobile phase: 51:49 ACN:water. Isocratic.

Prednisolone acetate

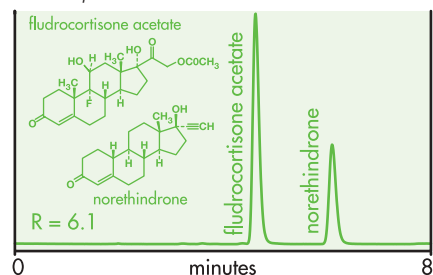
USP requires R not less than 2.0.



Column: VYDAC 218WP54 (C18, 300 Å, 5 µm, 4.6 mm ID x 250 mm). Detection: 254 nm. Flow: 1.0 mL/min. Mobile phase: 40% ACN in water (v/v). Isocratic.

Fludrocortisone

USP requires R not less than 2.5.



Column: VYDAC 218WP54 (C18, 300 Å, 5 µm, 4.6 mm ID x 250 mm). Detection: 254 nm. Flow: 1.0 mL/min. Mobile phase: 45:55 ACN:water. Isocratic.

Separation of Barbiturates on Small-Pore and Wide-Pore Reversed-Phase Columns

Barbiturates are derivatives of barbituric acid. They act as sedatives, hypnotics, and anti-convulsants by exerting depressant effects on the central nervous system. They are valued as therapeutics, but also common as drugs of abuse.

The five active barbiturates shown at right were separated on a VYDAC 201SP54 column (C18, 5 μm , 90 \AA , 4.6 mm ID x 250 mm) with a simple acetonitrile:water mobile phase (Figure 2a). With an acidic phosphate buffered mobile phase (Figure 2b) the five compounds also separated on this column. The order of elution was reversed for phenobarbital/butalbital and for secobarbital/mephobarbital due to differences in the mobile phase. Differences in counterions and pH will affect reversed-phase selectivity.

The five barbiturates were also separated with the acidic mobile phase on a monomerically bonded C18 reversed-phase column with 300 \AA pore size (Figure 2c). When the same separation was done on a polymerically bonded 300 \AA C18 column (Figure 2d), subtle differences in selectivity were observed.

Ordering Information

Cat. No. Description

201SP54	Column. SELECTAPORE 90M. Monomeric C18. 90 \AA . 5 μm . 4.6 mm ID x 250 mm.
218TP54	Column. Polymeric C18. 300 \AA . 5 μm . 4.6 mm ID x 250 mm.
238TP54	Column. Monomeric C18. 300 \AA . 5 μm . 4.6 mm ID x 250 mm.
218WP54	Column. SELECTAPORE 300P. Polymeric C18. 300 \AA . 5 μm . 4.6 mm ID x 250 mm.

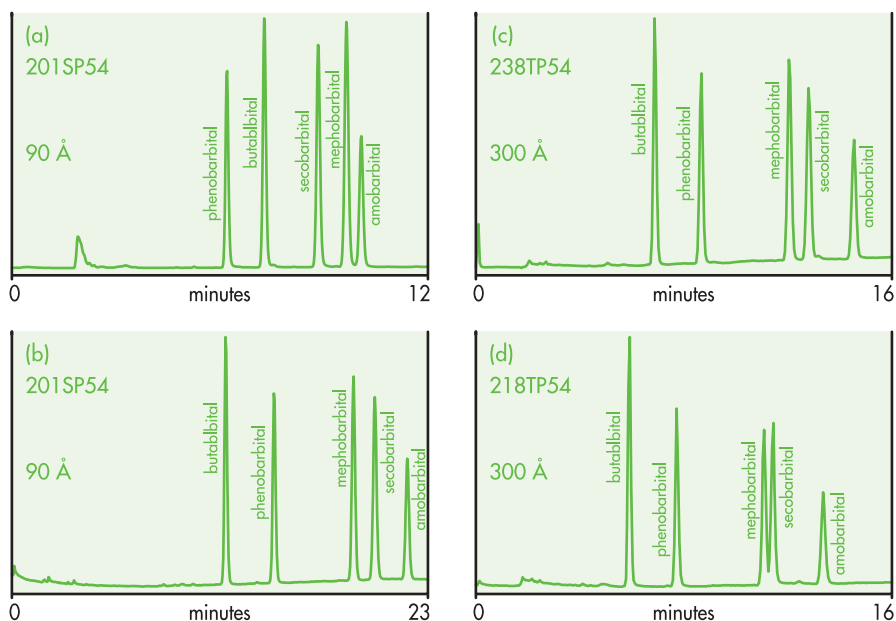
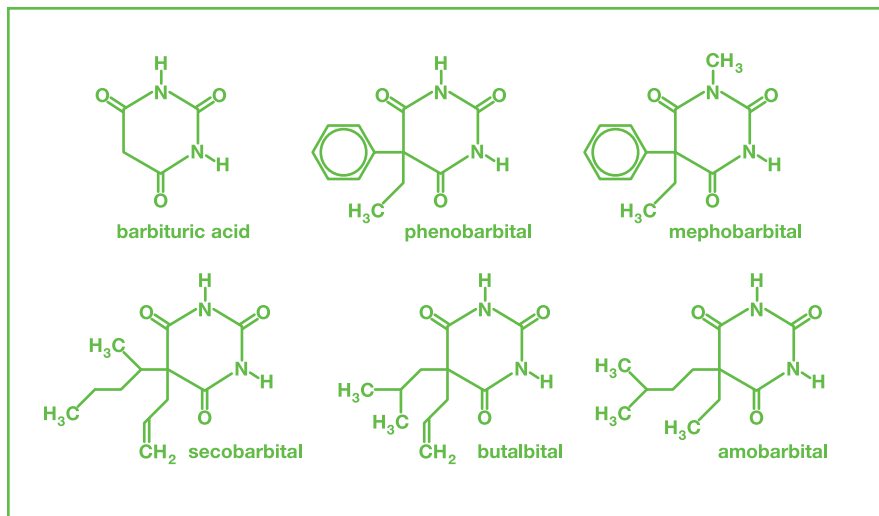


Figure 2. Separation of five barbiturates on VYDAC reversed-phase columns. Columns: (a & b) VYDAC 201SP54 (monomeric C18, 90 \AA , 5 μm , 4.6 mm ID x 250 mm). (c) VYDAC 238TP54 (monomeric C18, 300 \AA , 5 μm , 4.6 mm ID x 250 mm). (d) VYDAC 218TP54 (polymeric C18, 300 \AA , 5 μm , 4.6 mm ID x 250 mm). Mobile phases: (a) A = water. B = ACN. Gradient from 30% to 60% B over 20 minutes. (b,c,&d) A = 50 mM KH_2PO_4 , pH 2.51, 20% ACN. B = 90% ACN. Gradient from 0% to 20% B over 20 minutes.

To place an order, call your local Grace Vydac distributor.

