

## Separation of Cephalosporins on ZORBAX XDB-C8

Application Pharmaceutical Robert Ricker

Cephalosporins are a widely prescribed class of antibiotics. Separation of five cephalosporins, of varying pKa's, is demonstrated at pH 7.0 on a ZORBAX XDB-C8 column. Chromatographic separations are best achieved by using a mobile-phase pH that is at least 1 unit away from the pKa for any of the sample components. With intermediate-pH applications, more silanol groups are ionized and available to interact with analytes. The extra-dense bonding and double endcapping of ZORBAX Eclipse<sup>™</sup> packings (e.g., XDB-C8) shield ionized silanols from analytes.



## **Conditions:**

ZORBAX XDB-C8 (4.6 x 150 mm) (Agilent P/N: 993967-906) Mobile Phase: (85:15) 25 mM Na<sub>2</sub>HPO<sub>4</sub> (pH 7.0) : ACN Injection 5μL, 1 mL/min, 40°C, Detect. UV (254 nm)

## Highlights

- Separation of cephalosporins is best achieved at pH 7.0 -- avoiding partially ionized sample components and maintaining the buffer range of phosphate.
- The ZORBAX XDB-C8 operates at pH 7.0 with good peak shape due to extradense bonding and double endcapping.



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