USP Method for HPLC
Analysis of Buspirone

Application

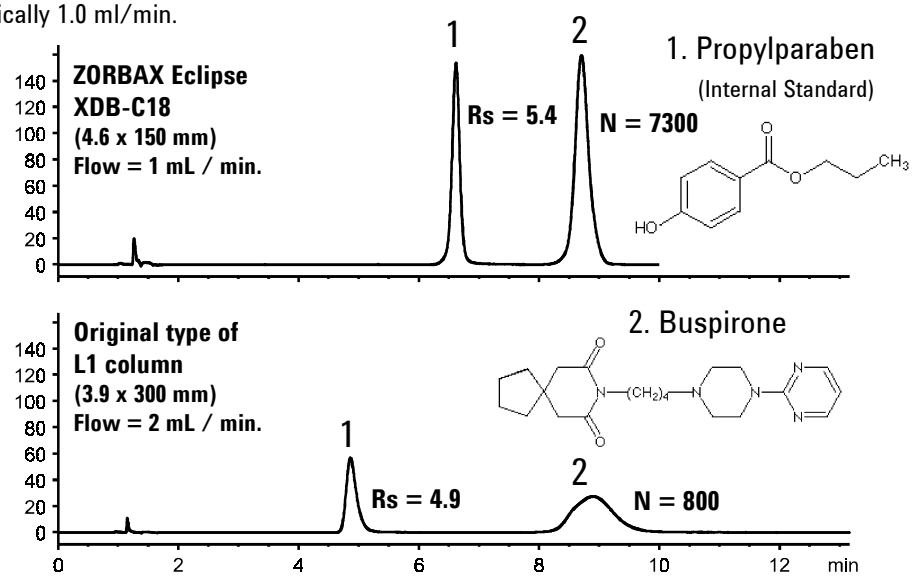
Pharmaceutical

Robert Ricker

According to the United States Pharmacopeia (USP), L1 column packing is defined as "octadecyl silane chemically bonded to porous silica or ceramic micro-particles, 3 to 10 µm in diameter". Some USP methods specifying an L1 column also use intermediate pH, and many of these methods were done on a 10 µm, 3.9 x 300 mm column. Until recently there was no modern alternative to the older 10 µm C18 column for intermediate pH-range applications.

ZORBAX Eclipse XDB-C18 is available as a state of the art L1 alternative, available in 3.5 and 5.0 µm particle sizes and various column dimensions.

Below is a comparison of the USP method for the anxiolytic, buspirone HCl, performed on the original brand of L1 column and on a modern L1 column, ZORBAX Eclipse XDB-C18. Buspirone is an anxiolytic. The USP Method uses a pH 7.5 acetonitrile: phosphate buffer (40:60) mobile phase and a flow rate of 2.0 ml/min. Intermediate pH imparts a negative charge on the stationary phase which may be detrimental to peak shape. The 2.0 ml/min. flow rate is standard on the older 3.9 x 300 mm columns. On 150 mm columns flow rate is typically 1.0 ml/min.



Conditions: LC: Hewlett Packard 1050
Column: ZORBAX Eclipse XDB-C18 Agilent P/N: 993967-902
Mobile Phase: ACN : 10 mM KH_2PO_4 (pH 7.5) (40:60)
UV: 254 nm; 23°C; Inj Vol: 25 µL (5 µg / µL)

Highlights

- *Improved peak shape using ZORBAX Eclipse XDB-C18.*
- *Higher efficiency of ZORBAX Eclipse XDB-C18.*
- *Using ZORBAX Eclipse XDB-C18 as a state of the art L1 column offers:*
  - *Greater sensitivity*
  - *Reduced analysis time*
  - *Reduced back pressure*
  - *Shorter length offers reduced solvent use per analysis*
- *USP performance is easily surpassed using ZORBAX Eclipse XDB-C18.*
  - *Resolution between buspirone and the internal standard, propylparaben is greater on the Eclipse XDB-C18 because the buspirone peak is much sharper than on the original L1 column.*

Agilent Technologies

Robert Ricker is an application chemist based at Agilent Technologies, Wilmington, Delaware.

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