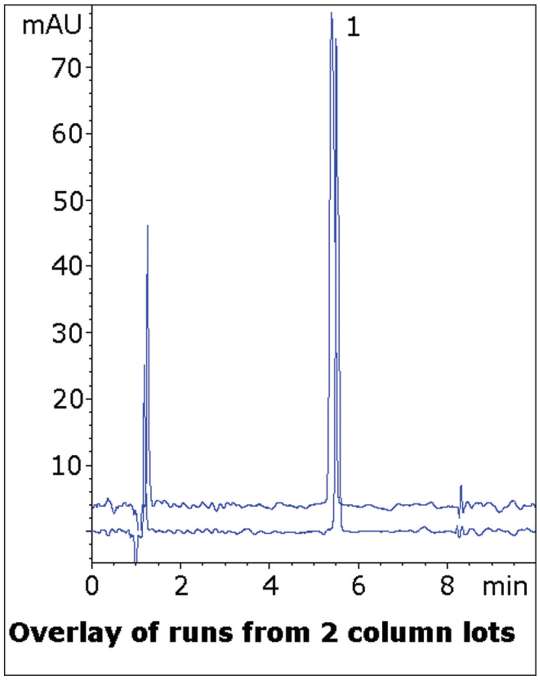
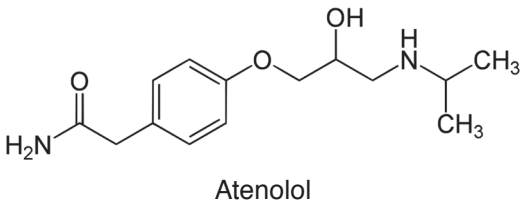
Atenolol Tablet

No ion pairings needed



Overlay of runs from 2 column lots



Atenolol

Note: Atenolol is a selective ß$_1$ receptor antagonist. It is used to treat various cardiovascular diseases such as hypertension. It is available by prescription under the trade name Tenormin®.

Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100Å

Catalog No.: 70000-7.5P

Dimensions: 4.6 x 75 mm

Solvents: A: DI H_2O / 0.1% formic acid (v/v)
B: Acetonitrile / 0.1% formic acid (v/v)

Gradient:

time (min.)	%B
0	90
1	90
6	40
7	90

Post Time: 3 min

Injection vol.: 2µL

Flow rate: 1.0 mL/min

Detection: UV 225 nm

Sample: 25mg strength atenolol tablet was ground and added to a 25mL volumetric flask. A portion of 50/50 solvent A/solvent B diluent was added and the flask was sonicated 10 min. It was then diluted to mark and mixed. A portion was filtered with a 0.45µm nylon syringe filter (MicroSolv Tech Corp.) and diluted 1:10.

Peak: 1. Atenolol

t_0: 0.9 min

Discussion

The USP assay method for atenolol uses heptane sulfonate and dibutyl amine in the mobile phase, which are slow to load and remove from the column. These reagents are added to improve the peak tailing which must be not more than 2.0. The method shown is a significant improvement since the peak is very symmetrical without the use of ion pair agents. Furthermore, the method is LCMS compatible.

Data from two column lots is shown to illustrate lot-to-lot consistency.

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