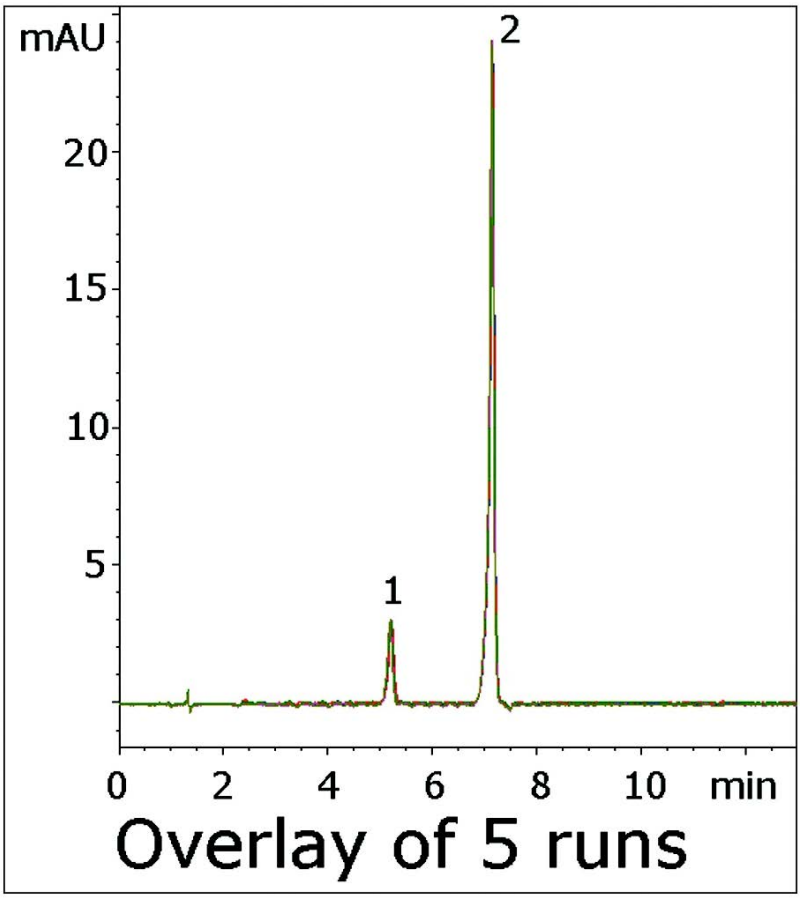
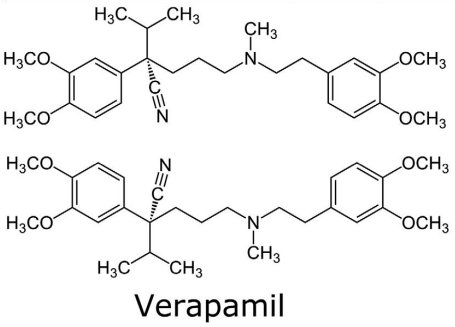
Verapamil and Impurity Analyzed with HPLC – AppNote

Alternative to USP Method with Improved Peak Efficiency

The USP impurities Method for Verapamil uses an Acetate Buffer with the ion pair agent 2-Aminoheptane to reduce Peak Tailing of the API and its Impurity. This Application Note uses an LCMS compatible Mobile Phase and produces Symmetrical Peaks for both Compounds. Excellent Resolution was also obtained between the two Peaks, far exceeding the USP System Suitability of Rs≥1.5.

This Method is a significant improvement over the USP monograph and illustrates the considerable potential for analyses of Amine containing solutes.





Peaks:

1. Verapamil Related Compound B
2. Verapamil

Method Conditions

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

Catalog No.: 70000-7.5P

Dimensions: 4.6 x 75mm

Mobile Phase:

A: DI Water / 10mM Ammonium Formate

B: 95:5 Acetonitrile / 10mM Ammonium Formate (v/v)

Gradient:

Time *(minutes)*	%B
0	100
9	85
10	100

Post Time: 4 minutes

Injection vol.: 1µL

Flow rate: 1.0mL / minute

Detection: UV @ 278nm

Sample Preparation: Sample mixture contained 0.1mg / mL Verapamil and 0.02mg / mL Verapamil Related Compound B in a diluent of 50:50 Solvent A / Solvent B. Peak identities were confirmed with individual Standards.

t_0: 0.9 minutes

Note: *Verapamil is an L-type calcium channel blocker used in the treatment of Hypertension, Angina Pectoris, and Cardiac Arrhythmia.*

Attachment

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Date: 05-17-2024