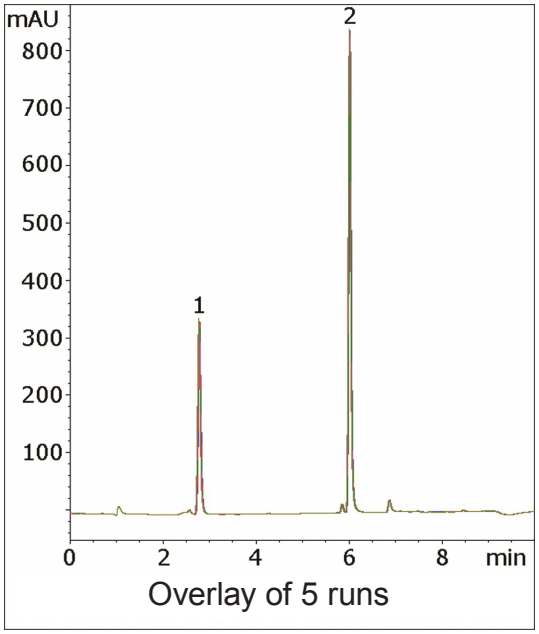
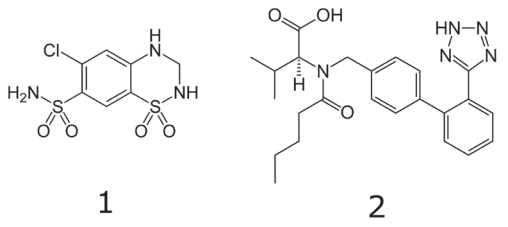
Valsartan/Hydrochlorothiazide (HCT)

Improved gradient method with faster equilibration





Comparison of Bidentate C18® method and USP method using an ordinary C18 Column

	Bidentate C18	Type B C18
Total run time	10 min	40 min
Column volumes for equilibration	1	>10
Solvent usage per run	10 mL	40 mL

Method Conditions

Column: **Cogent Bidentate C18™**, 4µm, 100Å

Catalog No.: 40018-75P

Dimensions: 4.6 x 75 mm

Mobile Phase: A: DI H_2O / 0.1% TFA
B: Acetonitrile / 0.1% TFA

Gradient:

time (min.)	%B
0	10
8	90
9	10

Post Time: 1 min

Injection vol.: 10µL

Flow rate: 1.0mL/min

Detection: UV 265 nm

Sample: **Stock Solution:** A Diovan® HCT tablet containing 160 mg valsartan and 25 mg hydrochlorothiazide was ground and added to a 50 mL volumetric flask. The flask was diluted to mark with 50/50 solvent A / solvent B mixture and sonicated. A portion was then filtered with a 0.45µm nylon syringe filter AQ™ Brand (MicroSolv Tech Corp.).
Working Solution: 100µL of the stock solution was diluted with 900µL of a 50/50 solvent A / solvent B mixture.

Peaks: 1. Hydrochlorothiazide (HCT)
2. Valsartan

t_0: 1 min

Discussion

The USP assay method for valsartan in combination with hydrochlorothiazide features a 27 minute gradient with a 13 minute re-equilibration for a total run time of 40 minutes. Because the Cogent Bidentate C18 column is based on a TYPE-C Silica™ surface, it is much less hydrophilic than ordinary HPLC columns and therefore equilibrates much faster when gradients are used. In this method, the run time was a quarter of the USP method, demonstrating a substantial time and solvent savings for the analytical laboratory. Diovan is marketed by Novartis and is under patent protection in the U.S. until 2012.

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