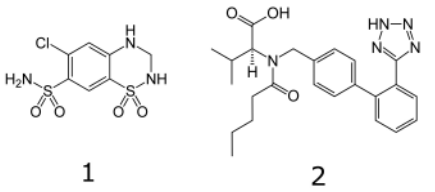
APPLICATION NOTES

Cogent™ Bidentate C18 with TYPE-C Silica™

HPLC
RP

Valsartan/Hydrochlorothiazide (HCT)

Improved gradient method with faster equilibration



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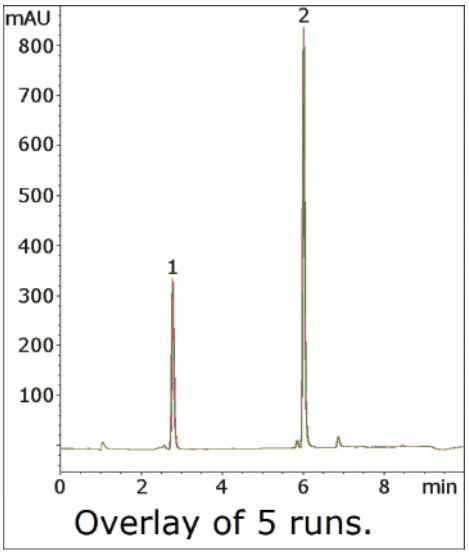

Peaks: 1. Hydrochlorothiazide (HCT)
2. Valsartan

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
Flow rate: 1.0 mL/min
Injection Vol.: 10 µL
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 0.45 micron nylon syringe filter AQ™ Brand (MicroSolv Tech Corp).
Working Solution: 100 µL of the stock solution was diluted with 900 µL of a 50/50 solvent A/solvent B mixture.
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 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.

For more information visit www.MTC-USA.com

Cat. No.	Description
40018-75P	Bidentate C18™ HPLC Column, 100A, 4µm, 4.6mm x 75mm

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