HPLC-UV Method for the Determination of Telmisartan Using a Core Enhanced Technology Accucore Column

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Key Words

- **Telmisartan**
- **Accucore RP-MS**
- **Hypertension**
- **Solid Core**
- **Core Enhanced Technology**
- **High speed**

Abstract

This application note demonstrates the use of the Thermo Scientific Accucore RP-MS column for the determination of telmisartan by HPLC-UV.

Introduction

Accucore™ HPLC columns use Core Enhanced Technology™ to facilitate fast and high efficiency separations. The 2.6 µm diameter particles are not totally porous, but rather have a solid core and a porous outer layer. The optimised phase bonding creates a series of high coverage, robust phases. Accucore RP-MS uses an optimized alkyl chain length for more effective coverage of the silica surface. This coverage results in a significant reduction in secondary interactions and thus highly efficient peaks with very low tailing. The tightly controlled 2.6 µm diameter of Accucore particles results in much lower backpressures than typically seen with sub-2 µm materials.

Telmisartan is an angiotension II receptor antagonist used for the treatment of hypertension.

This application note demonstrates the successful analysis of telmisartan using an Accucore RP-MS column.

Experimental Details

Chemicals and Reagents

Chemicals and Reagents	Part Number
Fisher Scientific HPLC grade water	W/0106/17
Fisher Scientific HPLC grade ammonium acetate	A/3446/50
Fisher Scientific HPLC grade acetonitrile	A/0626/17
Telmisartan purchased from Sigma Aldrich	

Sample Handling Equipment

NSC Mass Spec Certified 2 mL clear vial with blue bonded PTFE silicone cap	MSCERT4000-34W

Separation Conditions

Separation Conditions		Part Number
Instrumentation:	Thermo Scientific Accela UHPLC system	
Column:	Accucore RP-MS 2.6 µm, 50 x 2.1 mm	17626-052130
Mobile phase:	70:30 (v/v) 20 mM ammonium acetate/acetonitrile	
Flow rate:	0.4 mL/min	
Column temperature:	25 °C	
Injection details:	1 µL partial loop	
Injection wash solvent:	water	
UV detector wavelength:	230 nm	
Backpressure:	150 bar	

Solutions

Working standard contained 20 µg/mL of telmisartan in water.

Results

The analysis was performed on an Accucore RP-MS 2.6 μm, 50 x 2.1 mm column. As shown in Figure 1, telmisartan was analyzed in less than 2 minutes. Table 1 shows the results from six replicate injections.

	Telmisartan
Retention time (minutes)	1.15
%RSD on retention time	0.2
Asymmetry	1.31
%RSD on asymmetry	0.7

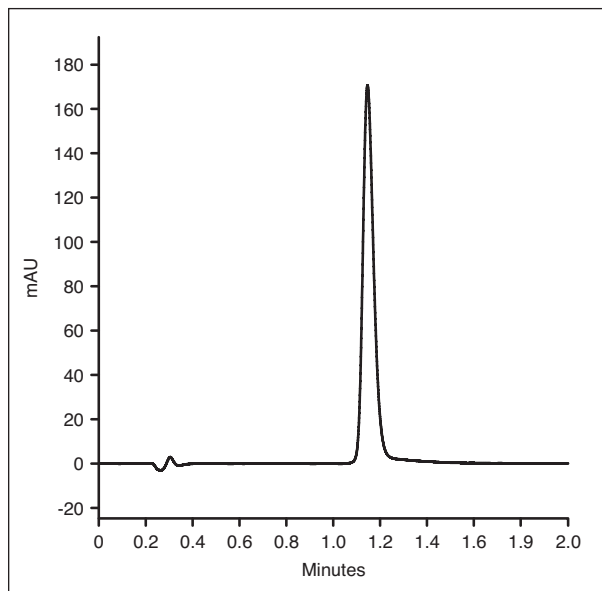Table 1: Retention time and asymmetry results for telmisartan

Figure 1: Chromatogram of telmisartan analyzed using an Accucore RP-MS 2.6 μm, 50 x 2.1 mm column

Conclusions

Replicate injections of telmisartan showed that Accucore RP-MS produced stable and reproducible results. This demonstrates that Accucore RP-MS is an excellent choice of column for the rapid analysis of telmisartan.

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