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Application Note

Method Transfer from an Agilent 1100 Series LC System to an ACQUITY UPLC H-Class System with Gradient SmartStart Technology: Analysis of an Active Pharmaceutical Ingredient and Related Substances[1]

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This is an Application Brief and does not contain a detailed Experimental section.

Abstract

This application highlight demonstrates an assay for the analysis of abacavir and related substances that was successfully transferred from an Agilent 1100 Series LC System to an ACQUITY UPLC H-Class System.

Introduction

When transferring a method to a different HPLC/UHPLC instrument, the new instrumentation must provide the same separation and meet all of the system suitability requirements of the original method/instrument. For gradient separations, the impact of dwell volume can be dramatic and should be considered when

transferring a method across chromatographic instruments.

Experimental

LC Conditions

Sample:	Abacavir and related substances
Sample diluent:	Water
Systems:	1. Agilent 1100 Series LC System 2. ACQUITY UPLC H-Class System with ACQUITY UPLC PDA Detector and CH-A
Transfer:	Gradient delay was entered using SmartStart Technology
Wavelength:	245 nm
Column temp.:	36 °C
Column:	CORTECS C_{18}, 2.7 µm, 4.6 x 75 mm
Mobile phase A:	0.1% Trifluoroacetic acid in water
Mobile phase B:	85% Methanol in water
Flow rate:	1.85 mL/min
Injection volume:	5 µL

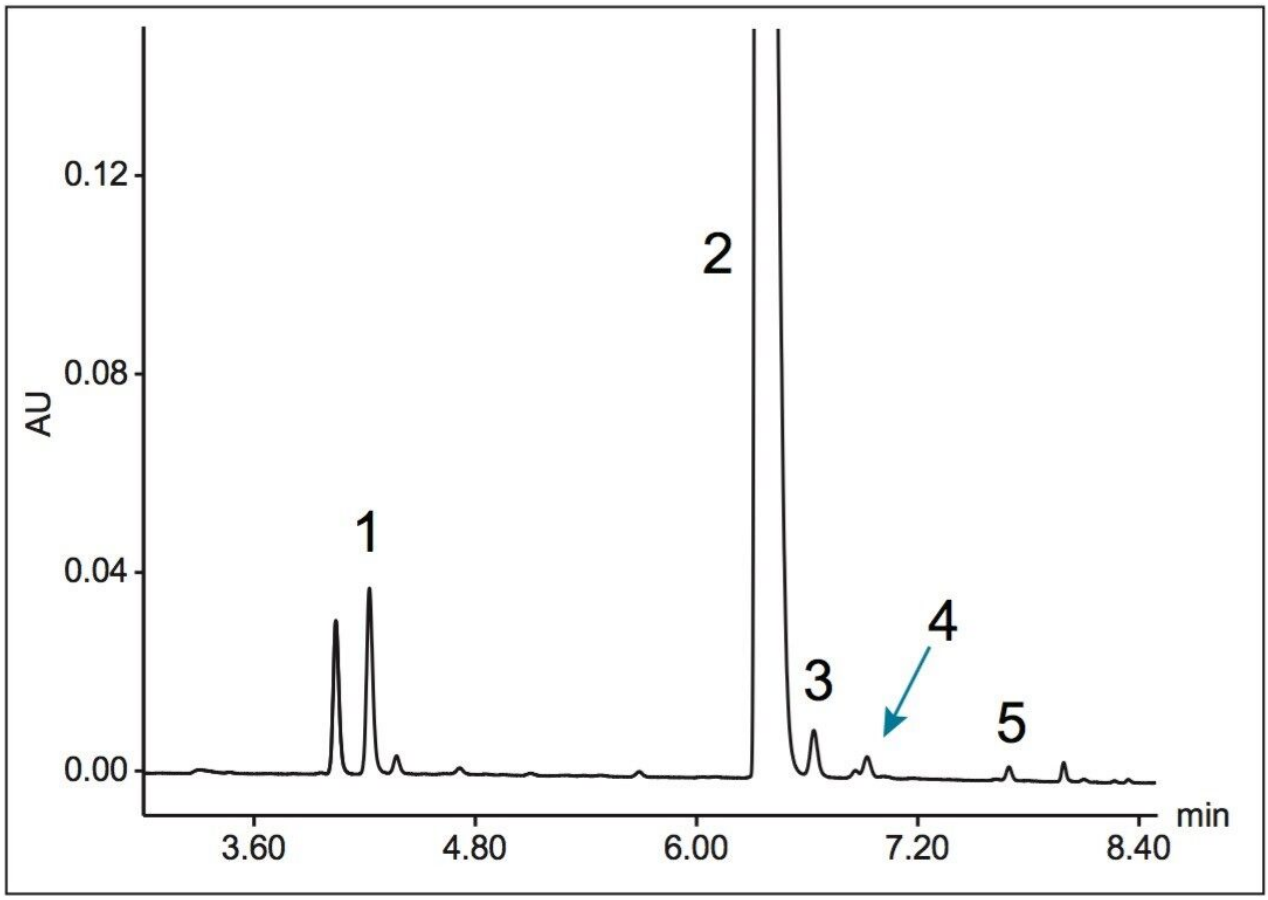
Gardient:

Time (min)	%A	%B	%C
Initial	95	5	Initial
6.38	70	30	6.38
10.37	10	90	10.37

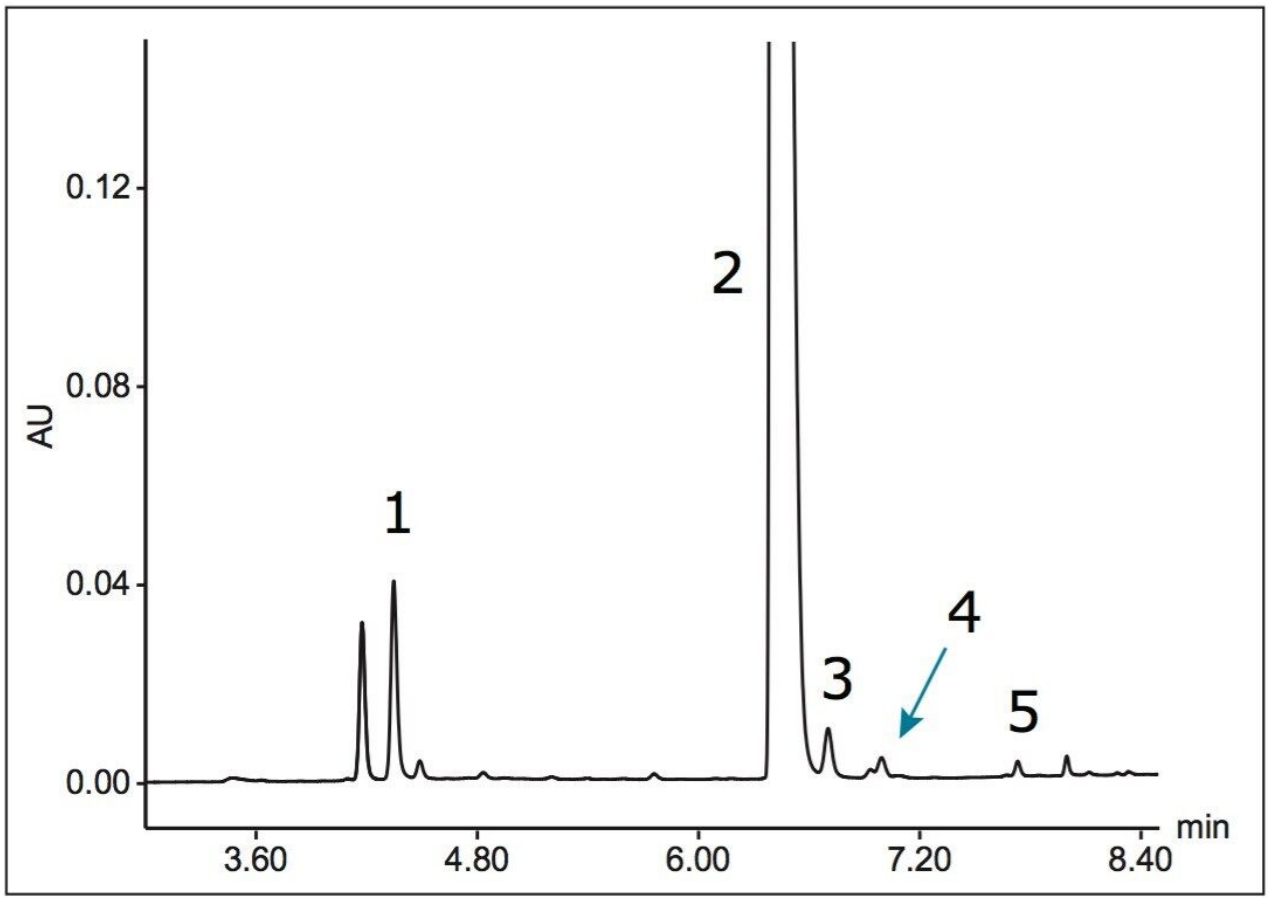
Results and Discussion

Name	t_R Agilent 1100	t_R ACQUITY UPLC H-Class
1. Descycleopropyl abacavir	4.23	4.35
2. Abacavir	6.34	6.4
3. 1R, 4R Trans abacavir	6.64	6.7
4. O-(4-Chloro-2,5-diaminopyrimidynl)-abacavir	6.93	6.99
5. O-t-Butyl-abacavir	7.70	7.73

Agilent 1100 Series LC System



ACQUITY UPLC H-Class System



Conclusion

An assay for the analysis of abacavir and related substances was successfully transferred from an Agilent 1100 Series LC System to an ACQUITY UPLC H-Class System. Using gradient SmartStart Technology in the instrument method, the differences in system volume were factored into the method. No changes to the gradient table were required.

References

1. For complete experimental details, refer to full technical brief 720005252EN at waters.com

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ACQUITY UPLC H-Class PLUS System <https://www.waters.com/10138533>

ACQUITY UPLC PDA Detector <https://www.waters.com/514225>

720005253, December 2014