Analysis of Tequila Carbohydrates

Application Note

Food and Beverage

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Introduction

Tequila is a spirit made from the blue agave plant, which is known to contain raffinose, a trisaccharide commonly found in a variety of vegetables and whole grains. The Agilent Hi-Plex Ca ligand-exchange chromatography column is able to separate raffinose from the other sugars and ethanol that make up this alcoholic beverage.

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Conditions

Column	Agilent Hi-Plex Ca, 7.7 × 300 mm, 8 µm (p/n PL1170-6810)
Sample	Sugars in tequila
Sample size	20 mg/mL
Mobile phase	100% DI H_2O
Flow rate	0.6 mL/min
Injection volume	20 µL
Temperature	85 °C
Detector	RI

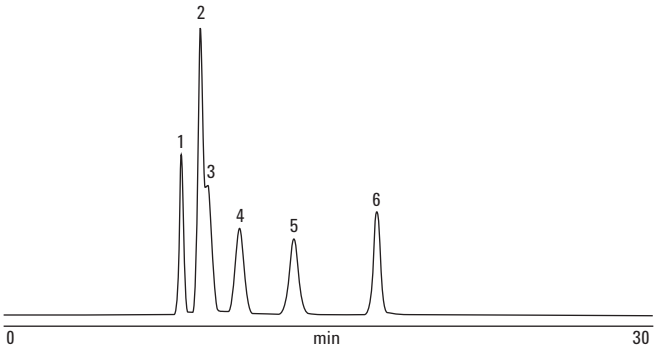

Figure 1. Separation of sugars in tequila using an Agilent Hi-Plex Ca 8 µm column. See Table 1 for peak identification.

Table 1. Peak Identification for Figure 1

Peak	Name	Time (min)	Height (µV)	Area (%)	Width 50% (min)	As. USP	10% Asymmetry	Res. HW	Plate counts	Plates/m
1	Raffinose	8.27	338184.7	12.365	0.21	1.01	1.01	0.00	8972	29906
2	Sucrose, maltose	9.13	608399.4	29.454	0.29	0.98	1.06	2.08	5657	18858
3	Lactose	9.45	273004.4	14.285	0.30	3.67	3.19	0.65	5607	18690
4	Glucose	10.92	184788.9	14.740	0.44	1.04	1.04	2.35	3401	11337
5	Fructose	13.43	161682.3	14.199	0.49	1.01	1.00	3.19	4217	14055
6	Mannitol	17.24	219822.6	14.958	0.35	0.96	0.96	5.34	13125	43750
Total			**1785882.3**	**100.000**						

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