

SHINWA EXPRESS

Application

V O L. 281

Analysis of honey using the ULTRON AF-HILIC-CD

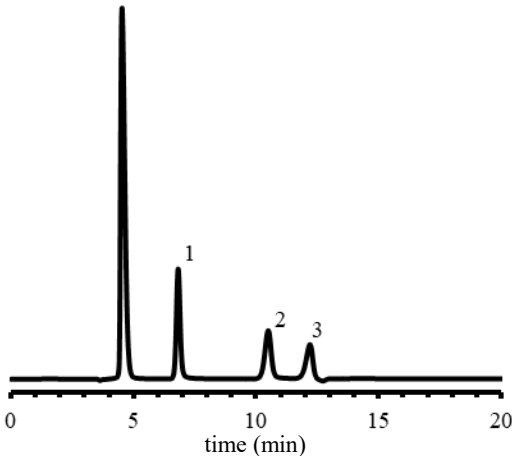
Honey is mainly composed of the monosaccharides glucose and fructose. Depending on the type of honey, it has also been reported to contain the disaccharide sucrose and turanose, an isomer of sucrose.

In this study, an acacia honey sample was analyzed using ULTRON AF-HILIC-CD following the sample preparation procedure described below. The results showed that the acacia honey sample contained 20.16 mg/mL of fructose and 15.12 mg/mL of glucose.

*Note: Each concentration (mg/mL) was calculated by multiplying the concentration ratio (shown in the table) by the glycerin concentration (126.03 mg/mL).

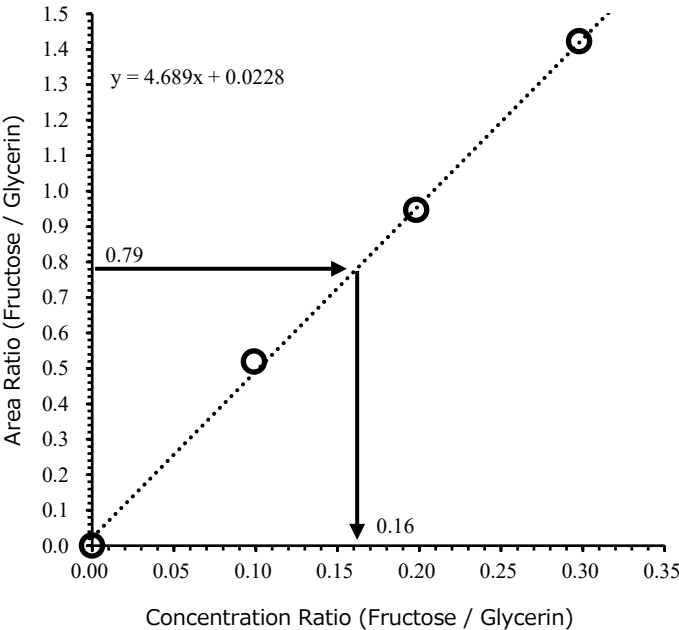
Sample Preparation Conditions

- 1. We weighed 1,962 mg of acacia honey and dissolve it in 40 mL of water.
- 2. Added 10 mL of 10% glycerin solution as an internal standard.
- 3. Added 50 mL of acetonitrile, and filter the solution using a hydrophilic filter.

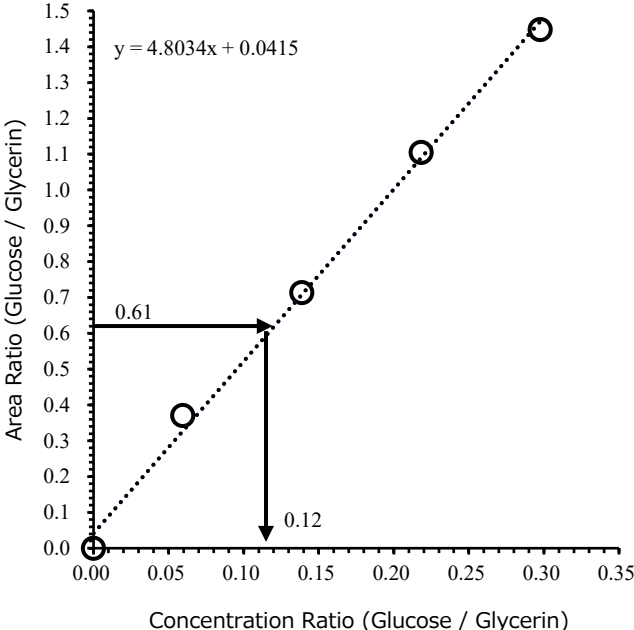


Column: ULTRON AF-HILIC-CD (5 μm)
Column size: 150 mmL x 4.6 mm I.D.
Mobile phase: 20 mM CH₃CO₂NH₄/CH₃CN = 15/85
Flow rate: 0.5 mL/min
Column temp.: 50°C
Detection: RI
Sample: Acacia honey
1.Glycerin (126.03 mg/mL) (IS)
2.Fructose
3.Glucose
Diluent: 50% acetonitrile
Injection vol.: 5 μL

Fructose Calibration Curve



Glucose Calibration Curve



	Area Ratio		Concentration Ratio		Concentration (mg/mL)	
	Fructose / Glycerin	Glucose / Glycerin	Fructose / Glycerin	Glucose / Glycerin	Fructose	Glucose
Acacia honey	0.79	0.61	0.16	0.12	20.16	15.12

● Features of the ULTRON AF-HILIC-CD

1. ULTRON AF-HILIC-CD is a HILIC column in which β -cyclodextrin is chemically bonded to a silica gel via a spacer.
2. The column has high selectivity for molecular structure difference.
3. The column shows high resolution analysis for structural analogues and structural isomers.
4. The column is suitable for sugar analysis by suppressing schiff base formation and anomer separation.

■ Analytical column specifications ■

ULTRON AF-HILIC-CD

Product name	Particle size (μm)	Column dimensions Length x I.D. (mm)
ULTRON AF-HILIC-CD	2	50×2.0
		50×3.0
		100×2.0
		100×3.0
		150×2.0
		150×3.0
ULTRON AF-HILIC-CD (PLSS)※ ※ PLSS: PEEK-Lined Stainless steel		50×2.0
		100×2.0
		150×2.0
ULTRON AF-HILIC-CD (Two Guard Cartridges)		
ULTRON AF-HILIC-CD	5	100×2.0
		100×4.6
		150×2.0
		150×4.6
		250×2.0
		250×4.6
ULTRON AF-HILIC-CD.G		10×4.0
ULTRON AF-HILIC-CD (Two Guard Cartridges)		5×2.0
		10×4.6
Holder for Guard Cartridge (with Coupler)	-	For 5×2.0 mm column
		For 10×4.6 mm column

※ Please do not hesitate to contact us for the other dimensions.
Please feel free to contact us with questions related to analyses.
Column screening services are also available.

Please be aware that specifications and prices are subject to change without prior notification.



SHINWA CHEMICAL INDUSTRIES LTD.

50-2 Kagekatsu-cho, Fushimi-ku
Kyoto 612-8307 Japan
TEL: +81-75-621-2360 FAX: +81-75-602-2660
E-mail: info@shinwa-cpc.co.jp
Website: <https://shinwa-cpc.co.jp/en/>