Application Note

610060H

Analysis of Sugar Alcohols by High Performance Liquid Chromatography with Evaporative Light Scattering Detection

Introduction

Evaporative Light Scattering Detector(ELSD) is an universal HPLC detector whose detection principle is the light scattering phenomenon. The scattering occurs when light is irradiated to particles of residual involatile components after removing the volatile mobile phase by heating from the column effluent sprayed with nitrogen gas. In detection section, LED is used as Light source for irradiating to particle of involatile components and scattered light is converted to electrical signal by photomultiplier to measure intensity. Sugar and fat which had been usually measured using refractive index detector or short wavelength range of UV detector can be measured with higher sensitivity and more stable baseline.

In this report, sugar alcohols were measured with ELSD as a detector and polymer NH_2 column under HILIC mode.

Keyword : sugar alcohols, HILIC, polymer NH_2 column, ELSD

Experimental

Equipment		Conditions	
Pump:	PU-2089	Column:	Shodex Asahipak NH2P-50 4E (4.6 mmID x 250 mmL)
Autosampler:	AS-2057	Eluent:	Water/Acetonitrile (25/75)
Column oven:	CO-2060	Flow rate:	1.0 mL/min
Detector:	ELS-2040	Column temp.:	30ºC
		ELSD condition:	Nebulizer temp.; 30ºC
			Evaporator temp.; 30ºC
			Gas flow rate; 1.4 SLM
		Injection volume:	10 µL
		Standard sample:	Xylitol, Mannitol, Inositol, Maltitol
			1.0 mg/mL each in Water/Acetonitrile (50/50)

Results

Chromatogram of standard mixture of sugar alcohols is shown in Fig. 1. Each constituent was clearly separated and detected.

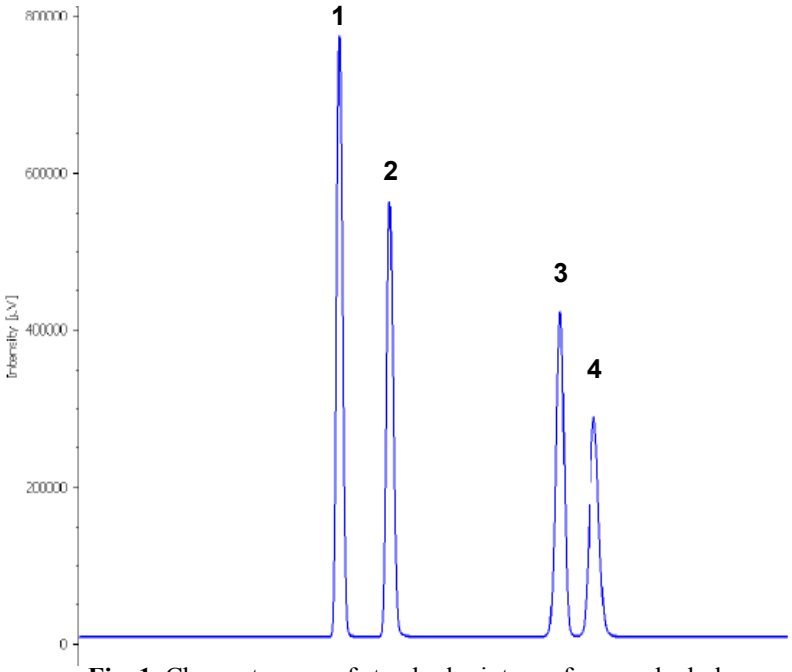

Fig. 1. Chromatogram of standard mixture of sugar alcohols
1: Xylitol, 2: Mannitol, 3: Inositol, 4: Maltitol

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