Application Note





Analysis of Sugar Alcohols by HPLC-ELSD

Introduction

An evaporative light scattering detector (ELSD) is a universal HPLC detector whose detection principle is based the light scattering phenomenon. The scattering occurs when light is irradiated on to particles of residual non-volatile components after removing the volatile mobile phase using heat and sprayed with nitrogen gas. In detection portion, LED is used as the light source for irradiating the nonvolatile components and scattered light is converted into an electrical signal by the photomultiplier to measure the intensity. Sugar and fat, which had been usually measured using a refractive index detector or a short wavelength range of a UV detector, can be measured with higher sensitivity and a more stable baseline.

In this report sugar alcohols were measured using ELSD as a detector and a polymer NH2 column in HILIC mode



Keywords: : sugar alcohols, HILIC, polymer NH₂ column, ELSD, HPLC, Xylitol, Mannitol, Inositol, Maltitol

JASCO INC.

28600 Mary's Court, Easton, MD 21601 USA Tel: (800) 333-5272, Fax: (410) 822-7526 Application Library: http://www.jascoinc.com/applications

Experimental

Equipment

Pump:	PU-2089
Autosampler:	AS-2057
Column oven:	CO-2060
Detector:	ELS-2040

Conditions

Column:	Shodex Asahipak NH2P-50 4E (4.6 mmID x 250 mmL)
Eluent A:	Water/Acetonitrile (25/75)
Flow rate:	1.0 mL/min
Column temp.:	30°C
FELSD condition:	Nebulizer temp.: 30°C Evaporator temp.: 30°C 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)

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Results

The chromatogram of a standard mixture of sugar alcohols is shown in figure 1.



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

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