

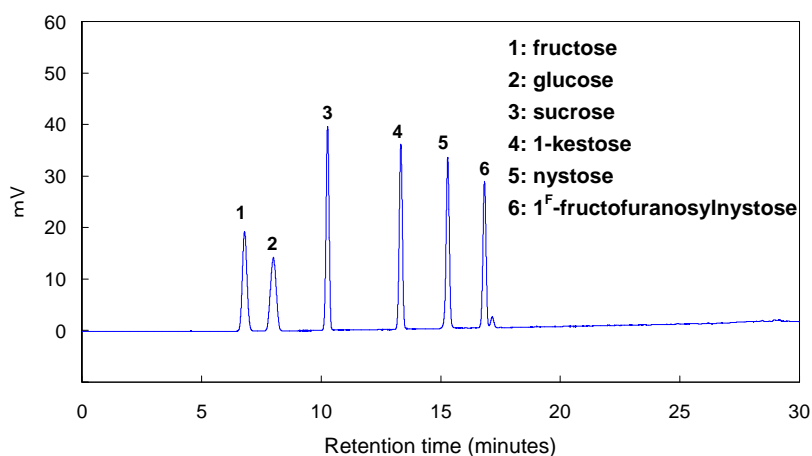
**Gradient Separation of Oligosaccharides in Alcoholic Beverages:  
application using Evaporative Light Scattering Detector (ELSD)**

Gradient elution is commonly used in hydrophilic interaction chromatography (HILIC) of oligosaccharides to decrease analysis time while maintaining high resolution of individual oligomers. Since refractive index (RI) detectors, which are generally used for detecting sugars, are not compatible with gradient elution, we employed evaporative light scattering (ELS) to detect the sample components following their separation on a high resolution TSKgel Amide-80 HR column. Examples of the separation of various oligosaccharides by gradient elution using ELSD are introduced here.

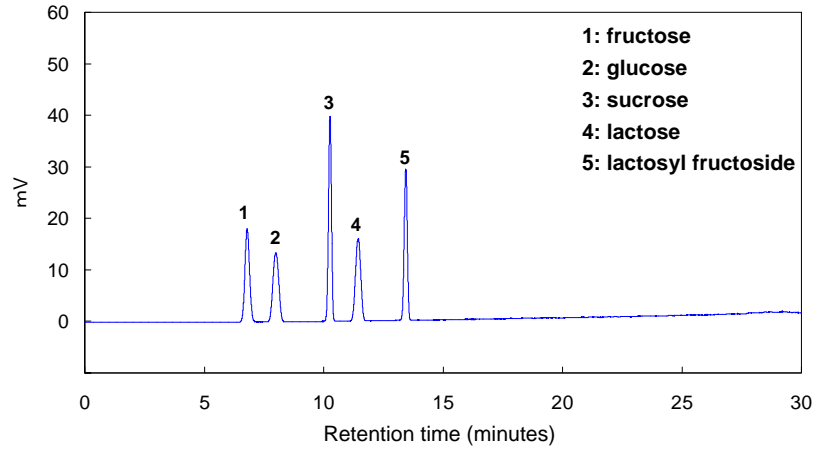
**Table 1. Conditions**

Column:	<b>TSKgel Amide-80 HR, 5µm, 4.6mm ID x 25cm</b>
Mobile phase:	A: water B: acetonitrile
Gradient:	0min (80%B) → 25min (40%B) → 27min (40%B) → 28min (80%B)
Flow rate:	1.0mL/min
Detection:	ELSD (Sedere) Temp.: 40°C, Nebulizer gas: N <sub>2</sub> , Gas pressure: 360kPa, Gain: 1
Temperature:	80°C
Injection vol.:	20µL

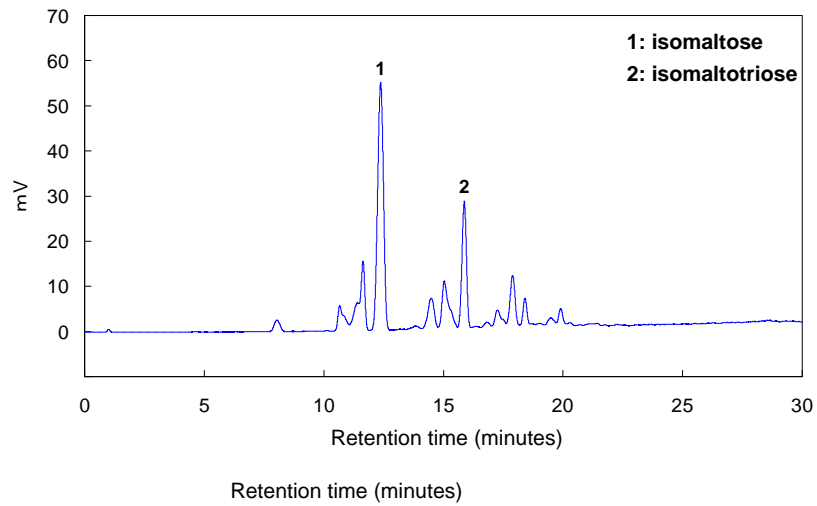
**Figure 1. Chromatogram of oligosaccharide reference standards (0.2g/L each)**



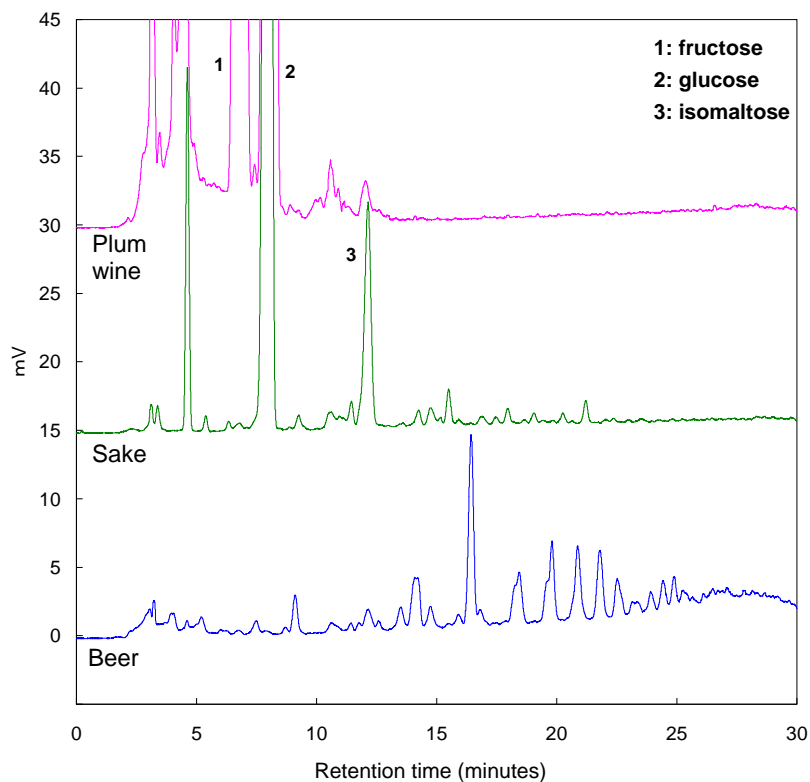
**Figure 2. Chromatogram of lactooligosaccharide reference standards (0.2g/L each)**



**Figure 3. Chromatogram of isomaltooligosaccharide reference standards (1g/L)**



**Figure 4. Chromatogram of alcoholic beverages (diluted 25-fold in 50% aqueous solution of acetonitrile)**



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