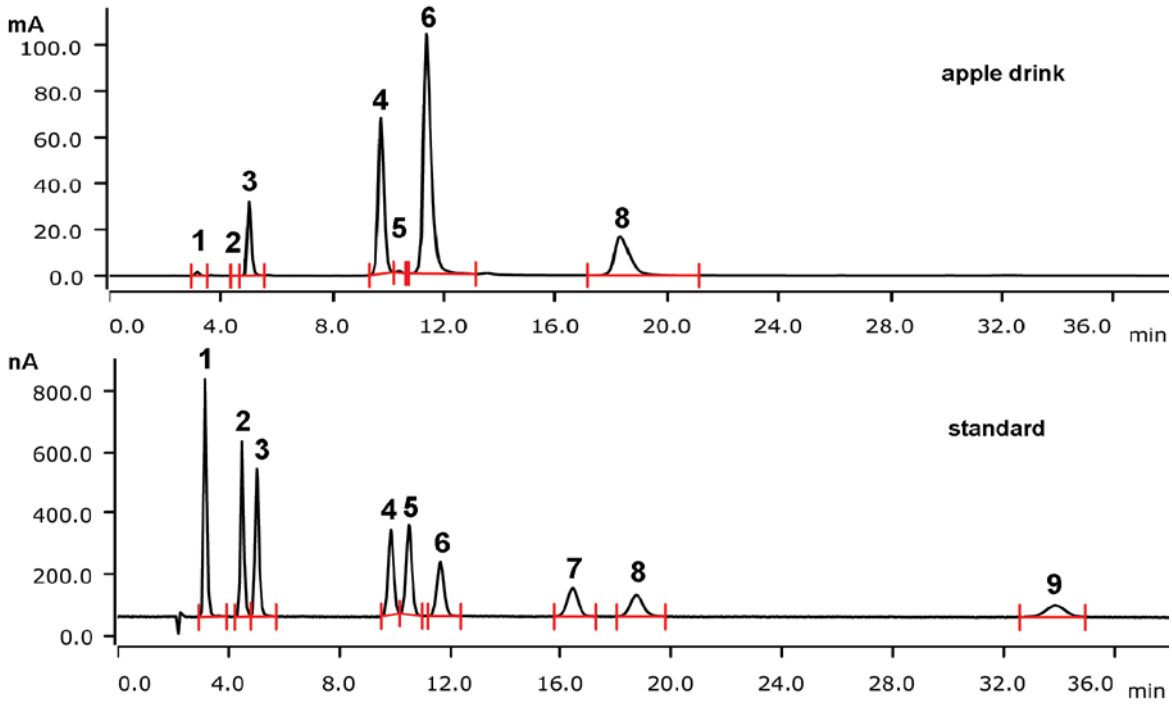
IC Application Note P–62

Sugars and sugar alcohols in an apple drink applying pulsed amperometric detection



Sugars and sugar alcohols in food are separated on a Metrosep Carb 2 - 150/4.0 column and detected with pulsed amperometric detection. The method is applied to an apple drink.

Results

	Compound	Standard [mg/L]	Apple drink [g/100 g]		Compound	Standard [mg/L]	Apple drink [g/100 g]
1	Inositol	1.0	0.01	6	Fructose	1.0	3.17
2	Arabitol	1.0	<0.01	7	Lactose	1.0	n.d.
3	Sorbitol	1.0	0.31	8	Sucrose	1.0	1.36
4	Glucose	1.0	1.23	9	Maltose	1.0	n.d.
5	Xylose	1.0	0.01				

n.d. not detected

Metrohm

Sample

Apple drink

Sample preparation

Dilution 1:50 with ultrapure water. Injection after Inline Ultrafiltration.

Columns

Metrosep Carb 2 - 150/4.0	6.1090.420
Metrosep Carb 2 Guard/4.0	6.1090.500

Solutions

Eluent	100 mmol/L sodium hydroxide 10 mmol/L sodium acetate

Parameters

Flow rate	0.5 mL/min
Injection volume	20 µL
P_{max}	20 MPa
Recording time	38 min
Column temperature	30 °C

PAD Parameters

Cell	Wall-Jet cell
Working electrode	Gold
Reference electrode	Palladium
Spacer	50 µm
Measuring potential	0.05 V
Measuring duration	100 ms
Cycle duration	550 ms
Measuring range	200 µA
Temperature	33 °C
Mode	PAD

Analysis

Pulsed amperometric detection

Instrumentation

930 Compact IC Flex Oven/Deg	2.930.2160
IC Amperometric Detector	2.850.9110
858 Professional Sample Processor	2.858.0020
IC equipment Wall-Jet cell: Carb (Au, Pd)	6.5337.010
IC equipment: Inline Ultrafiltration	6.5330.110