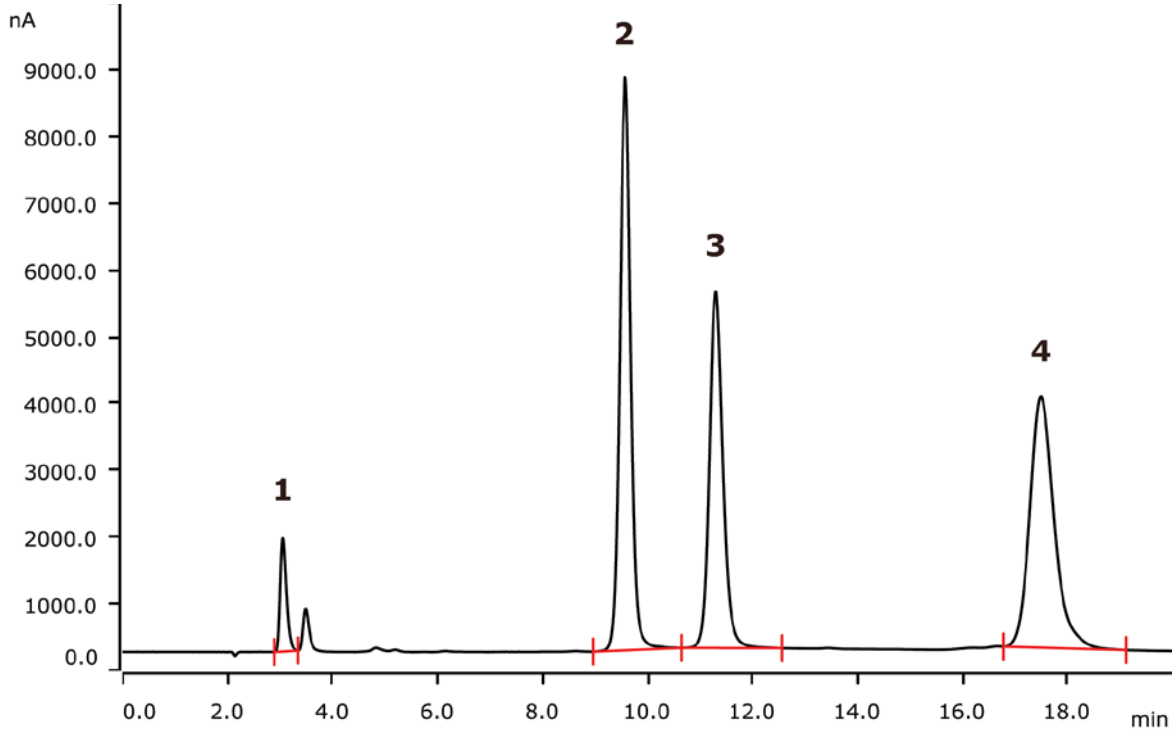
IC Application Note P–72

Carbohydrates in orange juice applying pulsed amperometric detection



Besides the typical sugar components, orange juice contains inositol. This sugar alcohol is an important signaling and messenger molecule. This Application Note shows the determination of inositol besides glucose, fructose, and sucrose in orange juice on a Metrosep Carb 2 - 150/4.0 column with pulsed amperometric detection (PAD).

Results

	Compound	Conc. [g/L]	RSD (%, n = 12)		Compound	Conc. [g/L]	RSD (%, n = 12)
1	Inositol	1.5	0.5	4	Fructose	23.2	0.3
2	Glucose	20.6	0.3	5	Sucrose	42.5	0.4

Metrohm

Sample

Orange juice

Sample preparation

Dilution 1:1000.

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
Recording time	20 min
Column temperature	30 °C

PAD Parameters

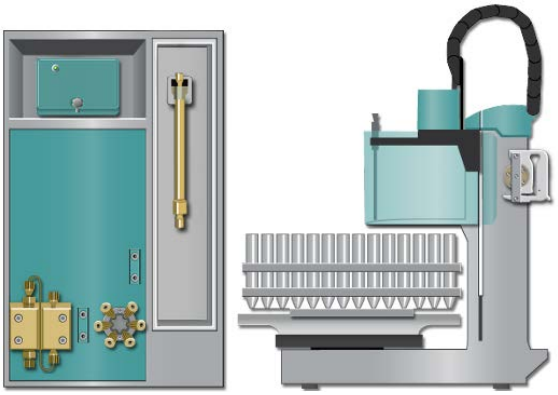
Cell	Wall-Jet cell
Working electrode	Gold
Reference electrode	Palladium
Spacer	50 µm
Measuring potential	0.05 V
Measuring duration	100 ms
Cycle duration	550 ms
Measuring range	200 µA
Temperature	35 °C
Mode	PAD

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



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