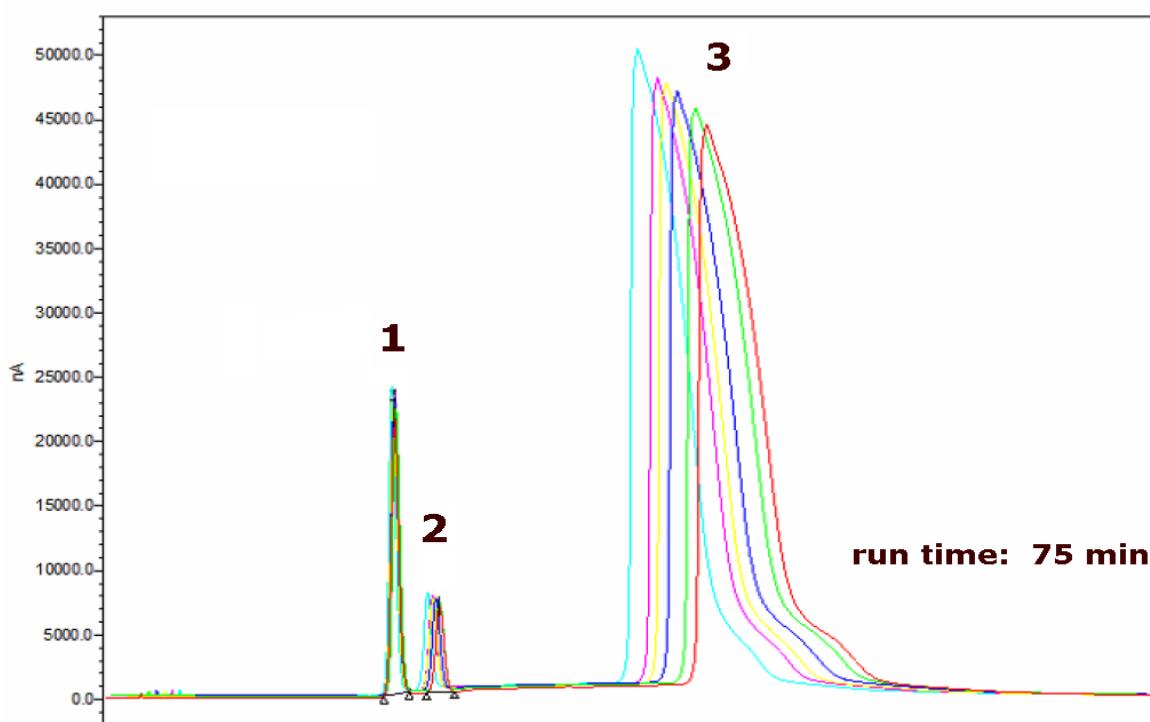


Glucose and galactose in 2% lactose using amperometric detection applying Empower 3.0



This Application Note shows the determination of glucose and galactose in a 2% solution of lactose. The separation is achieved on a Hamilton RCX-30 - 250/4.6 applying pulsed amperometric detection (PAD) at a gold electrode. Instrument control, data acquisition, and data handling is done by Empower 3.0 using the Metrohm IC Driver 2.0 for Empower.

Results

Compound	Concentration	RSD [% , n = 6]
Galactose	300 mg/L	0.3
Glucose	100 mg/L	0.7
Lactose	2%	-

Sample

Synthetic solution of lactose (2%).

Sample preparation

None

Columns

Hamilton RCX-30 - 250/4.6	6.1018.000
Metrosep RP 2 Guard/3.5	6.1011.030

Solutions

Eluent	10 mmol/L sodium hydroxide 0.5 mmol/L sodium acetate
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Parameters

Flow rate	1.0 mL/min
Injection volume	20 µL
P _{max}	34 MPa
Recording time	75 min
Column temperature	32 °C
Sample temperature	4 °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	40 °C
Mode	PAD

Analysis

Pulsed amperometric detection

Instrumentation

940 Professional IC Vario ONE	2.940.1100
945 Professional Amperometric Detector Vario – Amp.	2.945.0020
889 IC Sample Center – cool	2.889.0020
IC equipment Wall-Jet cell: Carb (Au, Pd)	6.5337.010
Metrohm IC Driver 2.0 for Empower	6.6070.200
Empower 3.0	



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