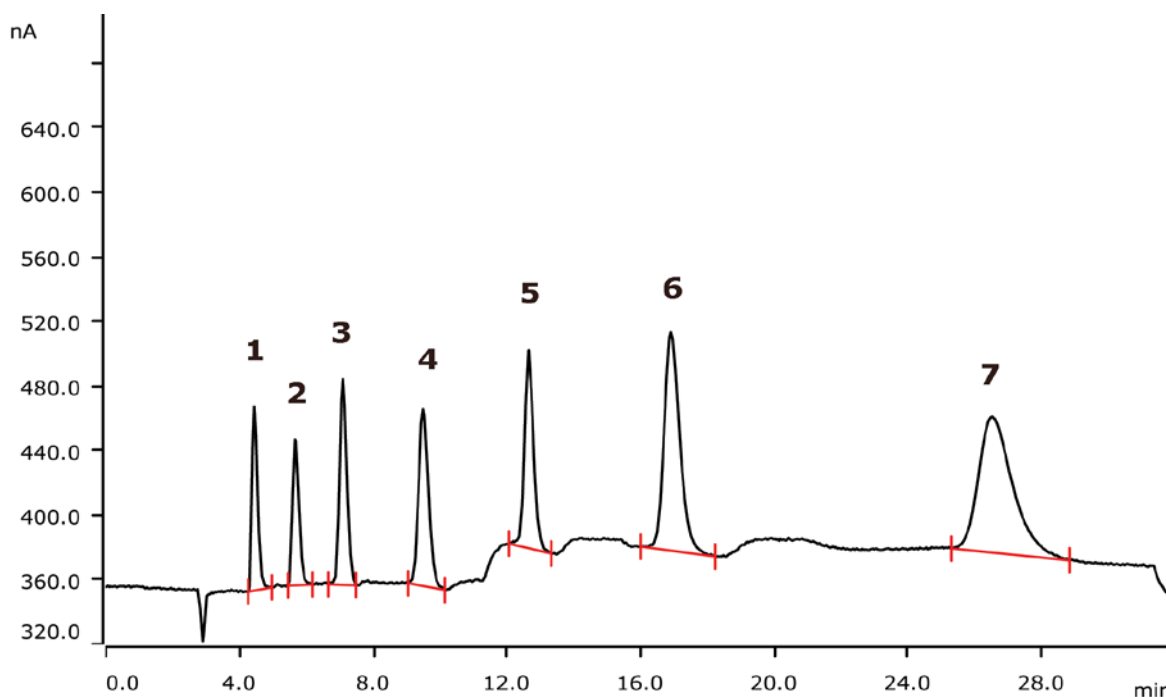


Glucose and maltose derivatives separated on a Metrosep Carb 2 column applying a flow gradient



Maltodextrin is a polysaccharide consisting of glucose units. Maltodextrins are classified as dextrose equivalents (DE, with DE = 3–20). This application shows the determination of glucose (DE = 1), maltose (DE = 2) till maltoheptaose (DE = 7). The separation is achieved on a Metrosep Carb 2 - 250/4.0 column with subsequent pulsed amperometric detection (PAD).

Results

Compound		Concentration [mg/L]	Compound		Concentration [mg/L]
1	Glucose	0.25	5	Maltopentaose	2.0
2	Maltose	0.50	6	Maltohexaose	5.0
3	Maltotriose	1.0	7	Maltoheptaose	10.0
4	Maltotetraose	2.0			

Sample

Standard solution

Sample preparation

None

Columns

Metrosep Carb 2 - 250/4.0	6.1090.430
Metrosep Carb 2 Guard/4.0	6.1090.500

Solutions

Eluent	200 mmol/L sodium hydroxide 150 mmol/L sodium acetate
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Parameters

Flow rate (gradient)	0.7 mL/min (0...10 min) 1.2 mL/min (11...31 min) 0.7 mL/min (32...40 min)
Injection volume	20 µL
P _{max}	20 MPa
Recording time	32 min
Column temperature	40 °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 Compact Flex Oven	2.930.2100
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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