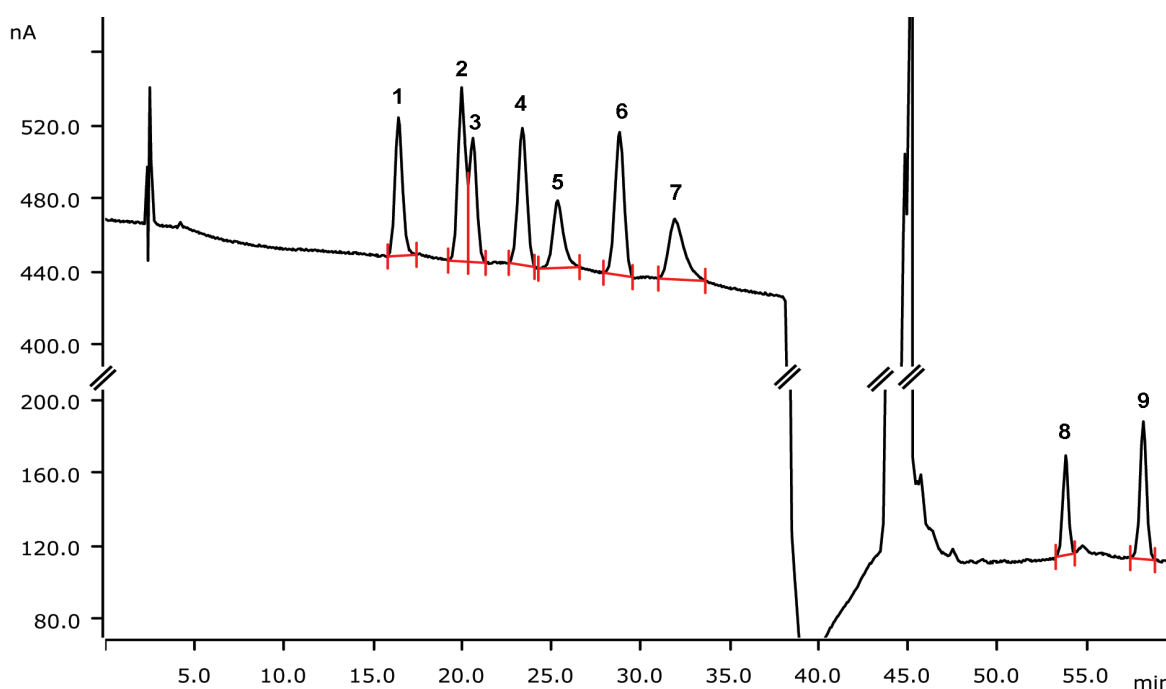


# Separation of sugars and sugar acids applying a low-pressure gradient



A low-pressure gradient allows the separation of sugars as well as strongly retained sugar acids in a reasonable run time. The separation of the saccharides is achieved on a Metrosep Carb 2 - 250/4.0 column with subsequent pulsed amperometric detection (PAD). Under the selected conditions, galactose and arabinose are not fully separated.

## Results

Compound	Standard [mg/L]	Compound	Standard [mg/L]
1 Fucose	1.0	6 Xylose	1.0
2 Galactose	1.0	7 Mannose	1.0
3 Arabinose	1.0	8 Galacturonic acid	1.0
4 Glucose	1.0	9 Glucuronic acid	1.0
5 Rhamnose	1.0		

## Sample

Standard

## Sample preparation

Direct injection

## Columns

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

## Solutions

Eluent A	1.0 mmol/L sodium hydroxide 1.0 mmol/L sodium acetate
Eluent B	100 mmol/L sodium hydroxide 170 mmol/L sodium acetate
Eluent C	300 mmol/L sodium hydroxide

## Parameters

Flow rate	0.6 mL/min
Injection volume	20 µL
P <sub>max</sub>	20 MPa
Recording time	60 min
Column temperature	20 °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

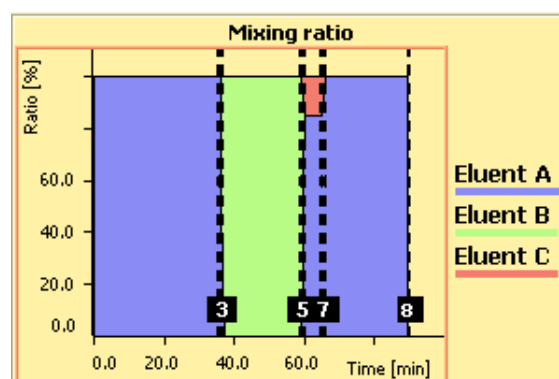
Pulsed amperometric detection

## Instrumentation

940 Professional IC Vario ONE/LPG	2.940.1150
IC Amperometric Detector	2.850.9110
858 Professional Sample Processor	2.858.0020
IC equipment Wall-Jet cell: Carb (Au, Pd)	6.5337.010

## Gradient

	Time [min]	Eluent A [%]	Eluent B [%]	Eluent C [%]	Curve	Flow
▶ 1	Start	100	0	0		0.6
2	36.0	100	0	0	Linear	0.6
3	37.0	0	100	0	Linear	0.6
4	59.0	0	100	0	Linear	0.6
5	60.0	85	0	15	Linear	0.6
6	65.0	85	0	15	Linear	0.6
7	66.0	100	0	0	Linear	0.6
8	90.0	100	0	0	Linear	0.6



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