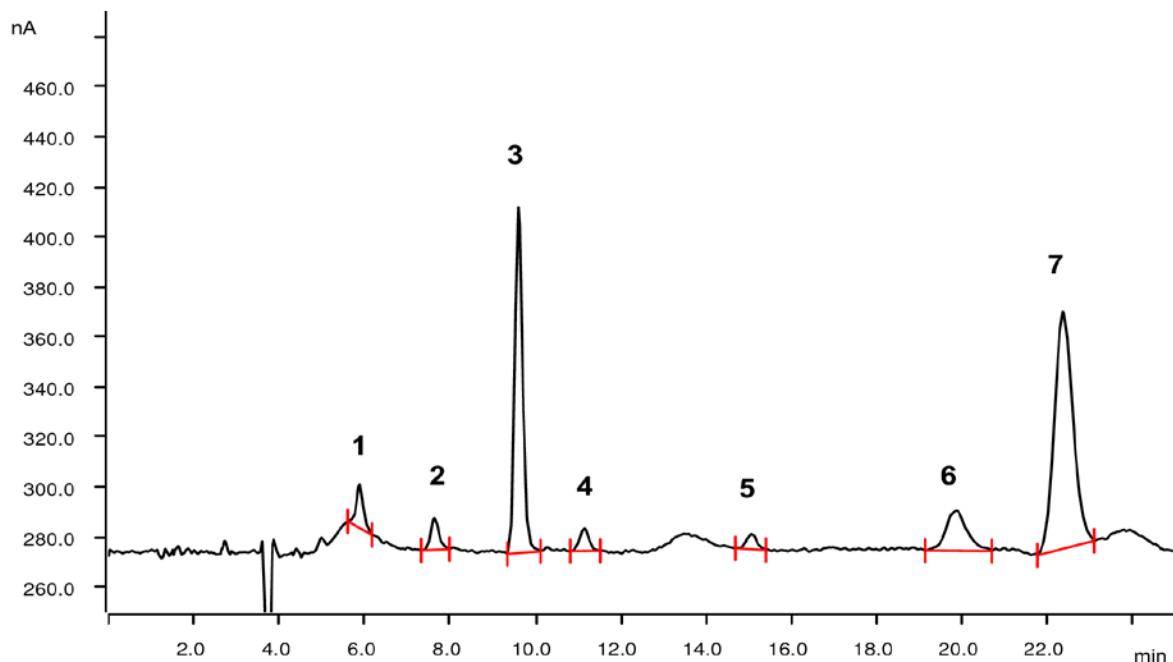


Easily extractable carbohydrates in Italian pasta applying pulsed amperometric detection



Cooked Italian pasta consists of about 30% carbohydrates, mainly starch. Sugars are water soluble and therefore most of them are extracted into the cooking water. This application identifies and quantifies the extractable sugars by extracting pasta with water at 60 °C.

Results

Component	Conc. (injected) [mg/L]	Conc. (pasta) [%]
1 Sorbitol	n.q.	-
2 Mannitol	n.q.	-
3 Glucose	0.295	0.30
4 Fructose	0.031	0.03
5 Lactose	n.q.	-
6 Sucrose	0.131	1.26
7 Maltose	1.257	0.13

Sample

Italian pasta

Sample preparation

5 g of pasta is extracted in 100 mL ultrapure water for 15 min. This extract is further diluted after centrifugation to a final ratio of 1:20'000.

Columns

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

Solutions

Eluent	300 mmol/L sodium hydroxide 3.0 mmol/L sodium acetate
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Parameters

Flow rate	0.5 mL/min
Injection volume	20 µL
Pmax	20 MPa
Recording time	25 min
Column temperature	30 °C

PAD Parameters

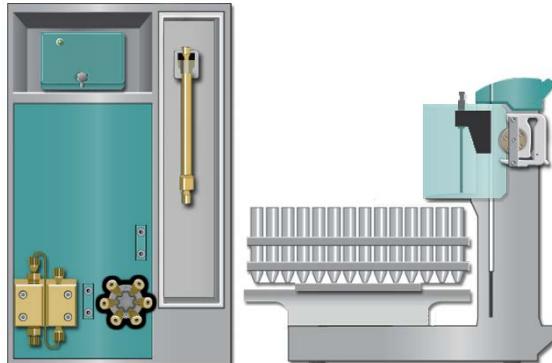
Cell	Wall-Jet cell
Working electrode	Gold
Reference electrode	Palladium
Spacer	50 µm
Measuring potential	0.05 V
Measuring duration	100 ms
Cycle duration	550 ms
Measuring range	200 µA
Temperature	35 °C
Mode	PAD

Analysis

Pulsed amperometric detection

Instrumentation

930 Compact IC Flex Oven/Deg	2.930.2160
IC Amperometric Detector	2.850.9110
919 Professional Sample Processor	2.919.0020
IC equipment Wall-Jet cell: Carb (Au/Pd)	6.5337.010



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