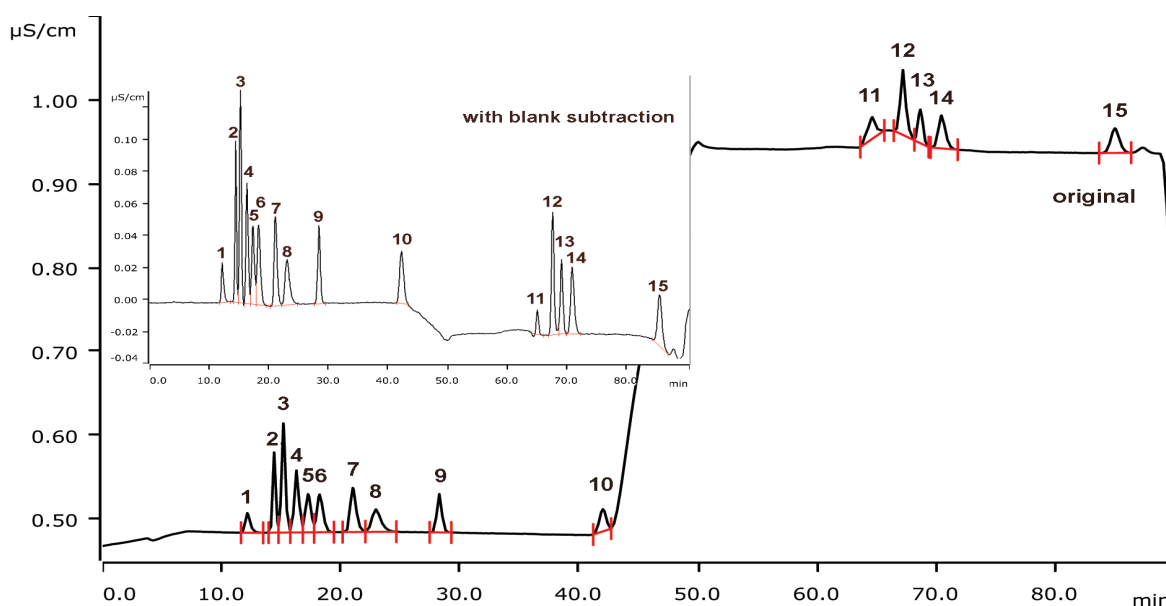


15 organic acids separated on a Metrosep A Supp 7 - 250/4.0 applying a high-pressure gradient



High-pressure gradients combine the superior separation of a weak eluent with the increased elution power of a more concentrated eluent. The weak eluent enables separation of early eluting, difficult to separate components. While the more concentrated eluent speeds up the elution of stronger retained components. Here, a high-pressure gradient is applied to separate 15 organic acid anions in one run. The blank subtraction feature in the MagIC Net software facilitates peak detection and therefore quantification.

Results

Anion	Conc. [mg/L]	Anion	Conc. [mg/L]	Anion	Conc. [mg/L]
1 Gluconate	0.5	6 Butyrate	0.5	11 Malonate	0.5
2 Lactate	0.5	7 Methacrylate	0.5	12 Malate	0.5
3 Acetate	0.5	8 Valerate	0.5	13 Glutarate	0.5
4 Propionate	0.5	9 Methylsulfate	0.5	14 Adipate	0.5
5 Isobutyrate	0.5	10 Dichloroacetate	0.5	15 Phthalate	0.5

Sample

Standard solution

Sample preparation

Direct injection.

Columns

Metrosep A Supp 7 - 250/4.0	6.1006.630
Metrosep A Supp 4/5 Guard/4.0	6.1006.500

Solutions

Eluent A	6.4 mmol/L sodium carbonate 2.0 sodium hydrogen carbonate
Eluent B	Ultrapure water
Suppressor regenerant	500 mmol/L sulfuric acid
Rinsing solution	STREAM

Instrumentation

940 Professional IC Vario ONE/SeS/HPG	2.940.1440
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
800 Dosino	2.800.0010
MSM-HC Rotor A	6.2842.000

Parameters

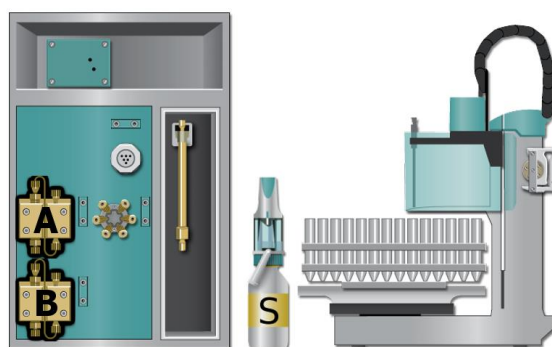
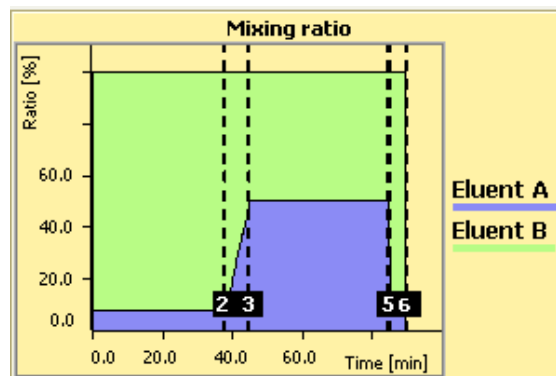
Flow rate	0.7 mL/min
Injection volume	20 µL
P _{max}	15 MPa
Recording time	90 min
Column temperature	45 °C

Analysis

Conductivity detection after sequential suppression

High-pressure gradient

	Time [min]	Eluent A [%]	Eluent B [%]	Curve	Flow
▶ 1	Start	8	92		0.8
2	38.0	8	92	Linear	0.8
3	45.0	50	50	Linear	0.8
4	84.9	50	50	Linear	0.8
5	85.0	8	92	Linear	0.8
6	90.0	8	92	Linear	0.8
7					



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