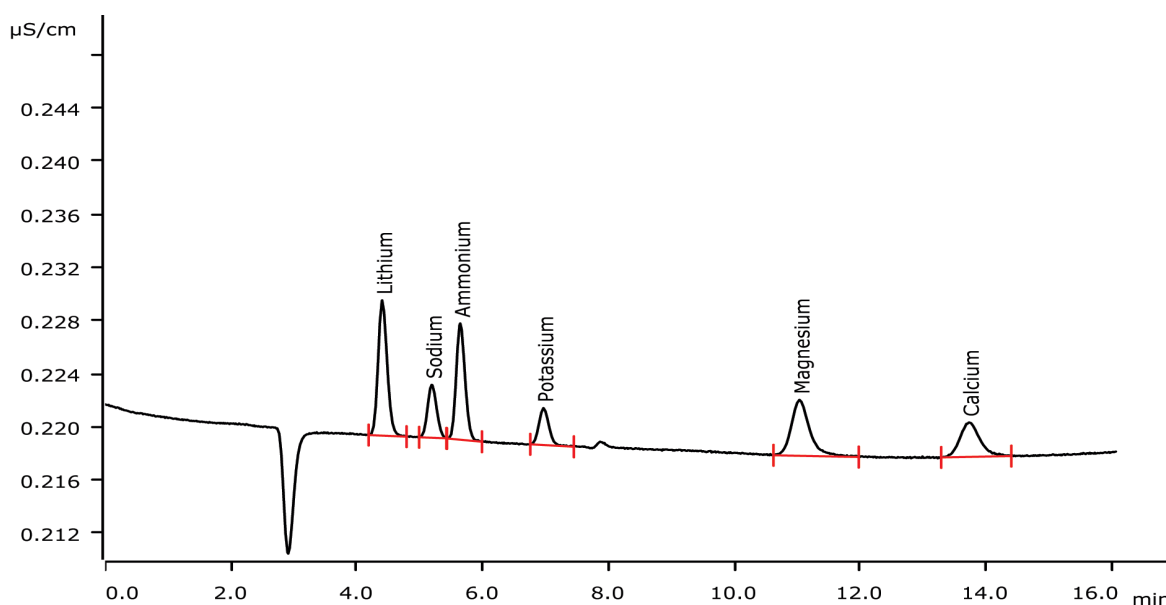


Reproducibility of 10 µg/L injections after cation suppression



In cation chromatography with sequential suppression, cations are detected in their hydrogen carbonate form. The eluent – mainly nitric acid – is converted to carbonic acid. After decomposition of the latter, the carbon dioxide is removed by the CO₂ Suppressor. The reduction of the baseline noise allows to reduce the detection limits and improves the reproducibility, even for very low concentrations. Here, the reproducibility for a 10 µg/L standard is shown.

Results

Cation [10 µg/L] each	RSD [% , n = 30]	Cation [µg/L]	RSD [% , n = 30]
Lithium	1.31	Potassium	1.61
Sodium	1.19	Magnesium	1.83
Ammonium	0.97	Calcium	2.66

Sample

Standard solution (10 µg/L of each cation)

Sample preparation

None

Columns

Metrosep C Supp 1 - 250/4.0	6.1052.430
Metrosep C Supp 1 Guard/4.0	6.1052.500

Solutions

Eluent	5.0 mmol/L nitric acid 50 µg/L rubidium
Suppressor regenerant	70 mmol/L sodium carbonate 70 mmol/L sodium hydrogen carbonate
Rinsing solution	STREAM

Analysis

Conductivity detection after sequential suppression

Instrumentation

930 Compact IC Flex Oven/SeS/Deg	2.930.2460
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor	2.858.0020
800 Dosino	2.800.0010
MSM-HC Rotor C	6.2842.200
IC equipment: Dosino regeneration	6.5330.190

Parameters

Flow rate	1.0 mL/min
Injection volume	20 µL
P _{max}	15 MPa
Recording time	16 min
Column temperature	40 °C



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