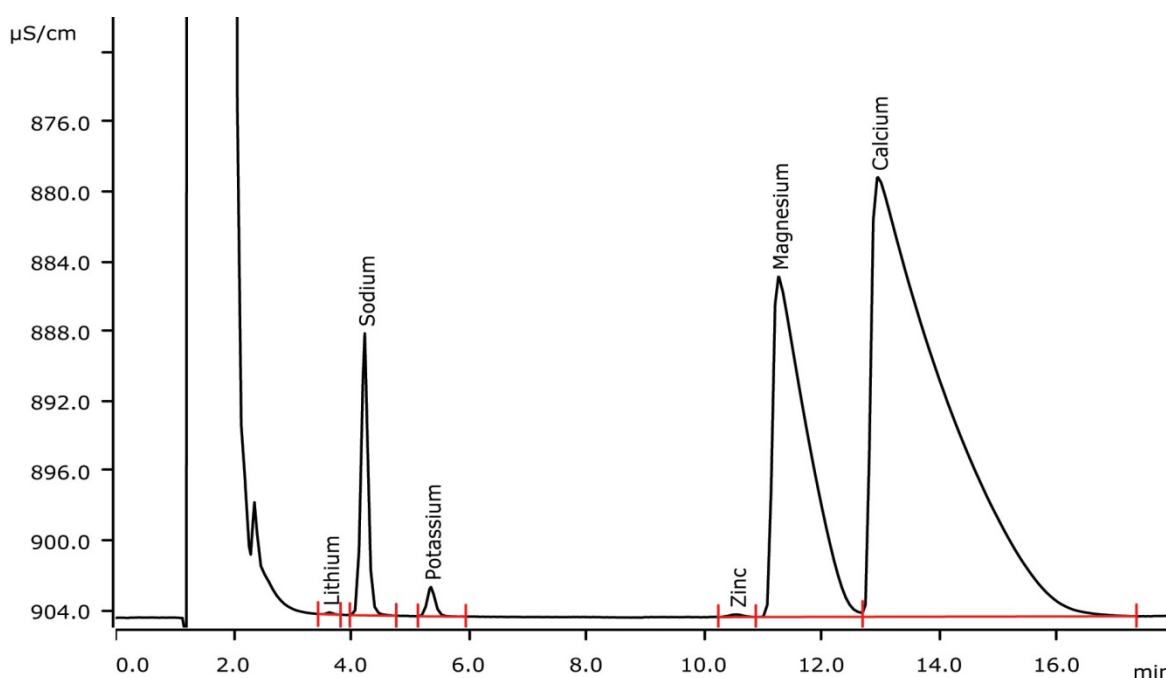


# Cations in small sample volumes by using Intelligent Pick-up Technique (MiPuT)



With Metrohm intelligent Pick-up Technique (MiPuT), the determination of cations in small sample volumes is straightforward. MiPuT allows to inject a very small aliquot of a very limited sample volume: only 10 µL out of 100 µL sample are required. Calibration is performed by injecting different volumes of a single mixed standard solution. For corresponding anion determination, see AN-S-302.

## Results

	Tap water [mg/L] (n = 6)	RSD [%] (n = 6)
Lithium	0.01	3.4
Sodium	5.92	0.5
Potassium	1.35	0.7
Zinc	0.20	8.1
Magnesium	20.2	0.4
Calcium	90.8	0.5

### Sample

Tap water

### Sample preparation

Metrohm intelligent Pick-up Technique (MiPuT)

### Columns

Metrosep C 4 - 150/2.0	6.1050.220
Metrosep C 4 Guard/2.0	6.1050.600

### Solutions

Eluent	2.0 mmol/L nitric acid 0.4 mmol/L oxalic acid
Transfer solution	Ultrapure water

### Parameters

Flow rate	0.3 mL/min
Injection volume	10 µL
P <sub>max</sub>	25 MPa
Recording time	18 min
Column temperature	45 °C

### Analysis

Direct conductivity detection

### Instrumentation

850 Professional IC AnCat – MCS	2.850.3030
IC Conductivity Detector	2.850.9010
858 Professional Sample Processor – Pump	2.858.0020
Sample rack 159 × 2 mL + 3 × 300 mL (for Eppendorf vials)	6.2041.480
Pick-up needle MF	6.2624.100
800 Dosino (liquid handling)	2.800.0010
Dosing Unit 2 mL	6.3032.120

### Calibration MiPuT

Calibration range	Factor of 10
Standard solution:	
Lithium	0.1 mg/L
Sodium	2.0 mg/L
Potassium, zinc	0.5 mg/L
Magnesium	5.0 mg/L
Calcium	20 mg/L
1. Level	5 µL
2. Level	10 µL
3. Level	15 µL
4. Level	25 µL
5. Level	50 µL

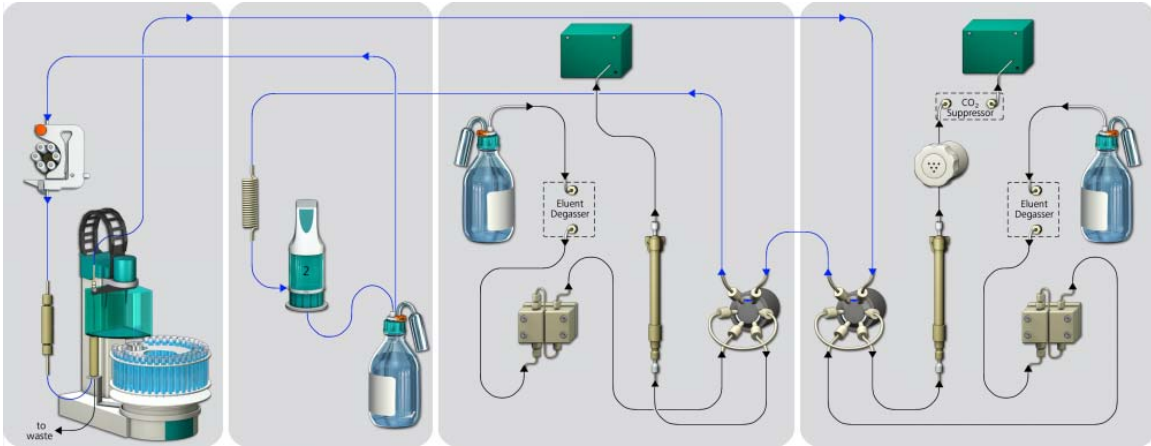


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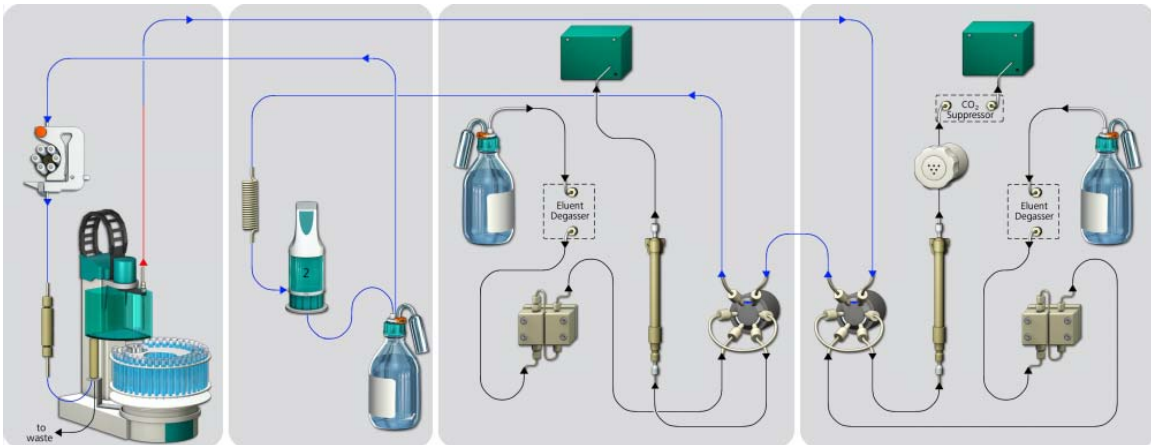
 **Metrohm**

### Flow chart (AnCat setup)

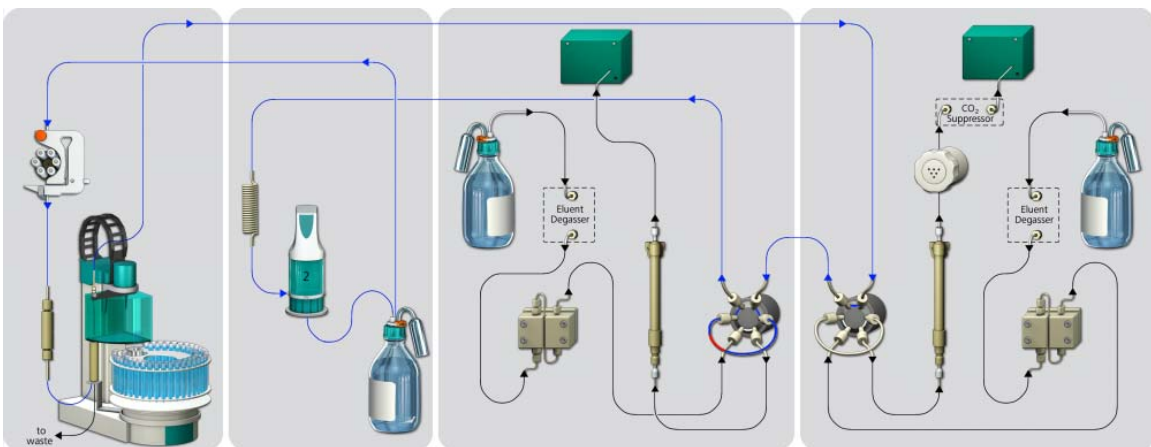
Rinsing:



Pick-up:



Transfer:



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