

# IC Application Note No. C-112

**Title:** Inline eluent preparation for cation analysis

**Summary:** Long-term determination of standard cations with automatic inline eluent preparation applying Dosino and Level Control instruments using cation chromatography with direct conductivity detection.

**Sample:** Standard solution (0.25 mg/L each)

**Sample Preparation:** –

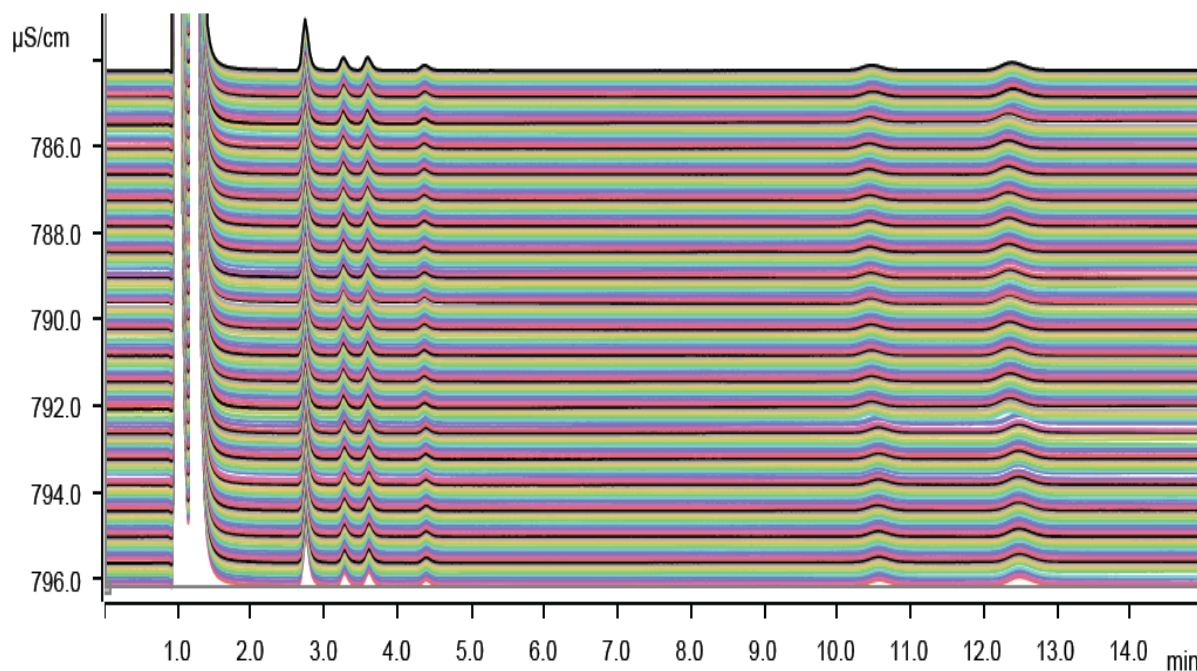
**Column:** 6.1050.420 Metrosep C 4 – 150

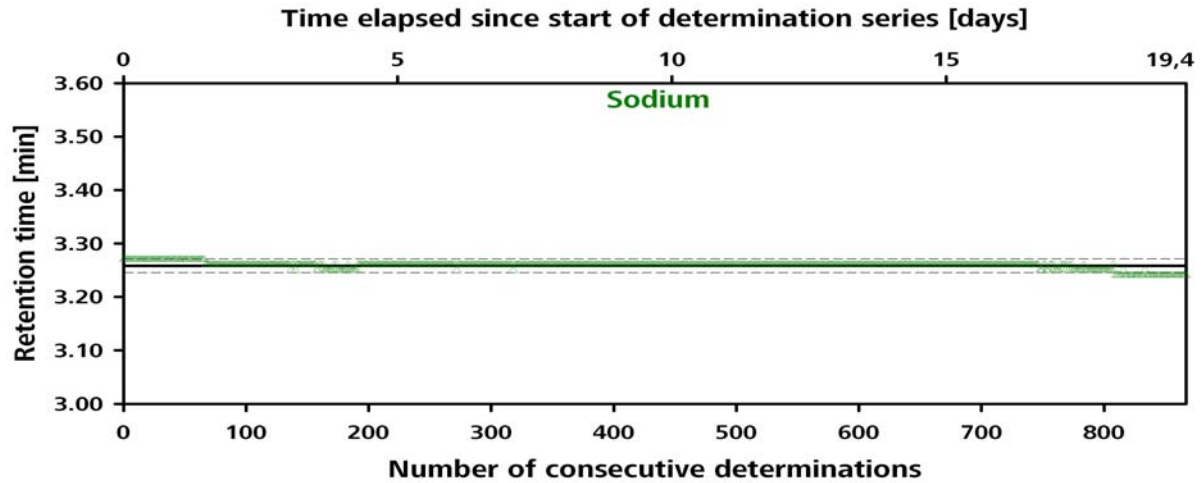
**Eluent (concentrate):** 1.7 mmol/L nitric acid (42.5 mmol/L)  
0.7 mmol/L dipicolinic acid (17.5 mmol/L)

**Flow:** 0.9 mL/min

**Injection Volume:** 10  $\mu$ L

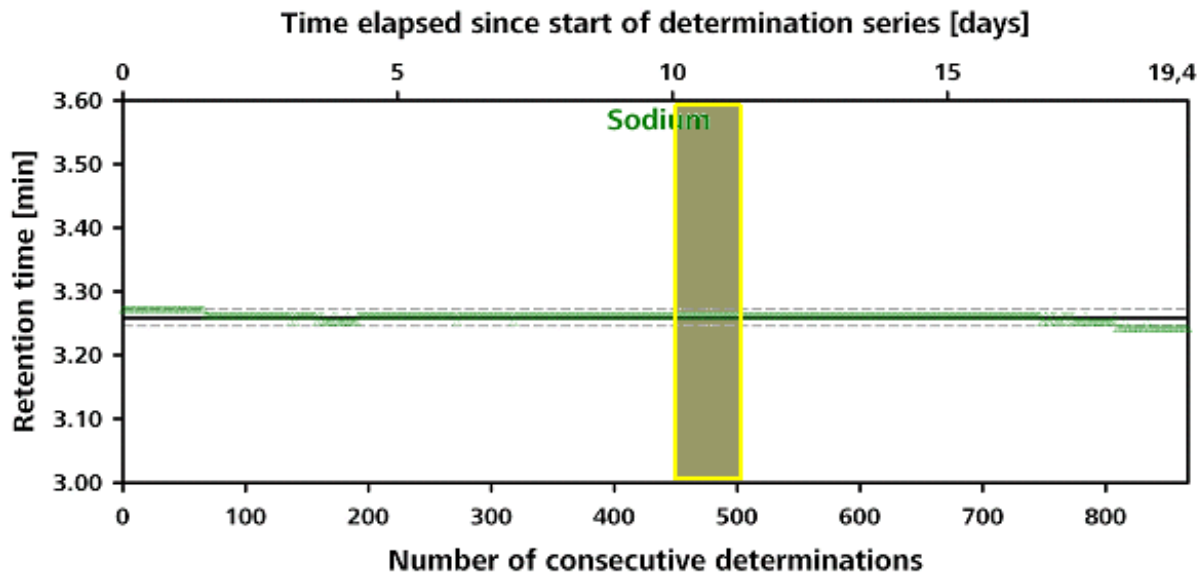
Overlay of 200 subsequent injections:





<b>Results:</b> n = 830	Li <sup>+</sup>	Na <sup>+</sup>	NH <sub>4</sub> <sup>+</sup>	K <sup>+</sup>	Ca <sup>2+</sup>	Mg <sup>2+</sup>
Retention time (RT)	2.74 min	3.26 min	3.59 min	4.38 min	10.49 min	12.41 min
Δ RT	0.02 min	0.03 min	0.03 min	0.06 min	0.21 min	0.21 min
Rel. std. dev.	0.15%	0.17%	0.20%	0.25%	0.40%	0.40%

1-day retention time stability



<b>24 hours</b> n = 40	Li <sup>+</sup>	Na <sup>+</sup>	NH <sub>4</sub> <sup>+</sup>	K <sup>+</sup>	Ca <sup>2+</sup>	Mg <sup>2+</sup>
Average RT	2.74 min	3.26 min	3.59 min	4.36 min	10.49 min	12.41 min
Δ RT	0.0 s	0.0 s	0.6 s	0.6 s	1.8 s	1.2 s
Rel. std. dev.	0.00%	0.00%	0.08%	0.04%	0.07%	0.05%