

## Determination of IONS (Na<sup>+</sup>, K<sup>+</sup>, Mg<sup>+</sup>, Ca<sup>+</sup>) by HPLC.

A simple, reliable and extremely useful method for analysing Na<sup>+</sup>, K<sup>+</sup>, Mg<sup>++</sup> and Ca<sup>++</sup> using isocratic HPLC and conductance detection.

### INSTRUMENTS and METHOD

<b>Pump:</b>	CMA/250 LC-pump
<b>Degasser:</b>	CMA/260
<b>Injector:</b>	CMA/200 Refrigerated Microsampler
<b>Detector:</b>	Waters 430 Conductivity
<b>Column:</b>	IC-Pak C M/D, coated C <sub>18</sub> , 5µm, 150 x 3.9 mm. Waters.
<b>Precolumn:</b>	IC-Pak CM

**Integrator or integration software.**

<b>Mobile phase:</b>	3 mM Nitric acid, 0.1 mM EDTA
<b>Flowrate:</b>	1.0 mL/minute
<b>Temperature:</b>	25 °C (column oven)

### REAGENTS

#### 1. Mobile phase, Nitric acid 3 mmol/L, EDTA 0.1 mmol/L

Nitric acid, HNO <sub>3</sub> , 65 %, Merck 1.00441	208 µL
EDTA, free acid, Titriplex II, Mw: 292.25	29.2 mg
Distilled water to	1000 mL

Stir 15 minutes to solve. Filter through 0.45 µm filter.

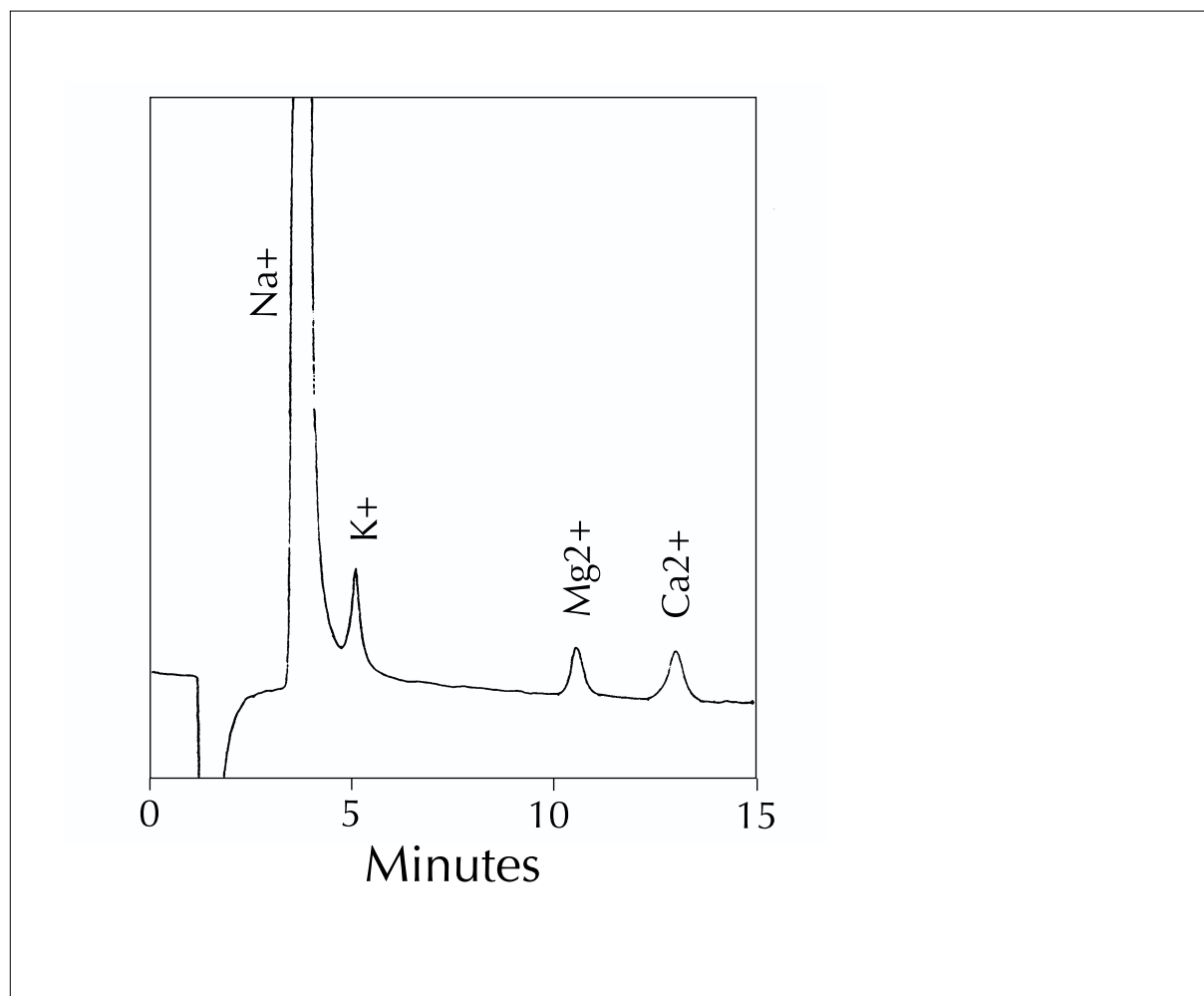
### CALIBRATOR

Ringer  
Na<sup>+</sup> 148 mmol/L, K<sup>+</sup> 4.0 mmol/L, Ca<sup>2+</sup> 2.3 mmol/L, Cl<sup>-</sup> 155.6 mmol/L  
Apoteksbolaget

Artificial Ringer for CNS.  
Na<sup>+</sup> 148 mmol/L, K<sup>+</sup> 2.7 mmol/L, Mg<sup>2+</sup> 0.85 mmol/L, Ca<sup>2+</sup> 1.2 mmol/L,  
Cl<sup>-</sup> 155 mmol/L

## ANALYSIS

1. Equilibrate the chromatographic system.
2. Dilute calibrators and samples 1:20 and inject 10  $\mu$ L.



References: Margareta Nordenvall, Ulf Ulmsten, Urban Ungerstedt.  
Influence of Progesterone on the Sodium and Potassium Concentrations of Rat Uterine Fluid. Investigated by Microdialysis.  
Gynecol. Obstet Invert. 1989; 28:73-77

**CMA** / *Microdialysis*

[www.microdialysis.com](http://www.microdialysis.com)

Box 2 • 171 18, Solna  
Tel 08-470 10 00 • Fax 08-470 10 50

73 Princeton Street, North Chelmsford • MA 01863 • USA  
Tel: +1 (978) 251-1940, (800) 440-4980, Fax: +1 (978) 251-1950