



Determination of cations in drinking waters



Fast Analysis : 3 min !

Cédric SARAZIN
Analytical Application Lab. Manager

INTRODUCTION

Determination and quantitation of K^+ , NH_4^+ , Na^+ , Ca^{2+} , Mg^{2+} cations in drinking waters using Wyn-CE capillary electrophoresis system and an easy to use and sensitive contactless conductimetry detection (C4D).

SEPARATION CONDITIONS

Buffer : Glacial acetic acid + L-Histidine + 18-C-6, pH 4.1
Capillary : bare-fused silica, L = 65 cm, l = 50 cm, ID = 50 μm
Injection : hydrodynamic, 50 mbar, 8 s
Voltage : +30 kV
Detection : C4D, frequency 500 kHz, A = 100%
Temperature : 25 $^{\circ}C$

Standard :

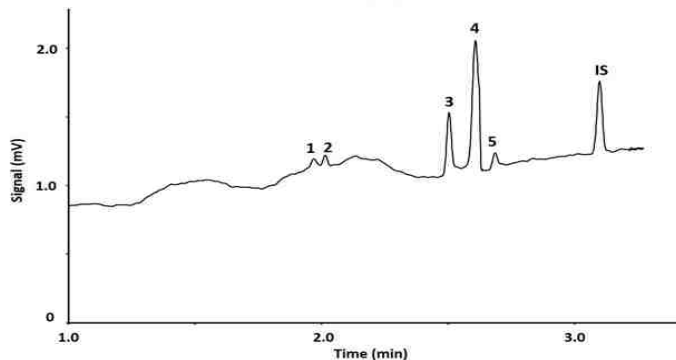
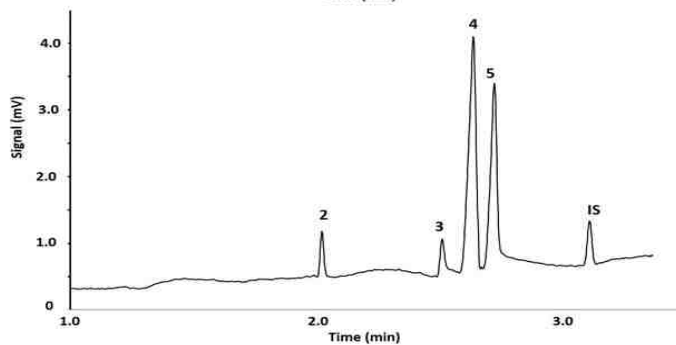
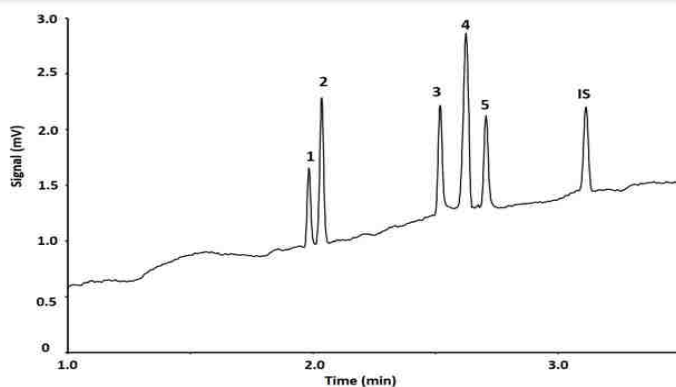
1- NH_4^+ ; 2- K^+ ; 3- Ca^{2+} ; 4- Na^+ ; 5- Mg^{2+} Concentration :
20 μM . (IS = Li^+ , 20 μM)

Sparkling water :

(Dilution 1/50)
2- K^+ (4 μM) ; 3- Ca^{2+} (7 μM) ; 4- Na^+ (138 μM) ;
5- Mg^{2+} (64 μM). (IS = Li^+ , 20 μM)

Tap water :

(Dilution 1/50)
1- NH_4^+ (trace) ; 2- K^+ (trace) ; 3- Ca^{2+} (5 μM) ;
4- Na^+ (28 μM) ; 5- Mg^{2+} (1 μM) ; (IS = Li^+ , 20 μM)



Repeatability (n=10)

RSD (normalized migration times) = 0.3 %
RSD (normalized corrected areas) : 1.2 %