



## Ion and Organic acid Analyses in Milk samples by CE-C4D



*Capillary Electrophoresis can help industrial actors to reduce their analysis costs*

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### INTRODUCTION

Milk quality is determined by the measure of several parameters of its composition. For example anion and cation determinations are often checked in order to detect bovine, caprine or ovine mastitis and organic acids to follow milk fermentation. WynSep developed an easy-to-use methodology to determine main ionic compounds and organic acids in milk with only one buffer, one capillary in two successive runs.

### STANDARD AND REAL ANALYSIS

**Buffer :** WynSep Ion Buffer

**Capillary :** neutral coated, L = 50 cm, ID = 50  $\mu\text{m}$

**Injection :** hydrodynamic, 50 mbar, 5 s

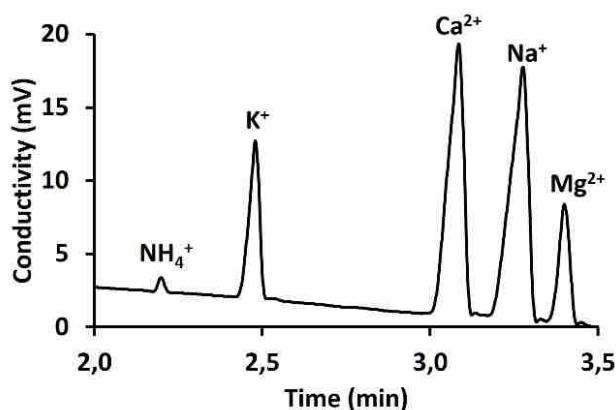
**Voltage :** +20 kV (cations) / -20 kV (anions and organic acids)

**Detection :** C4D

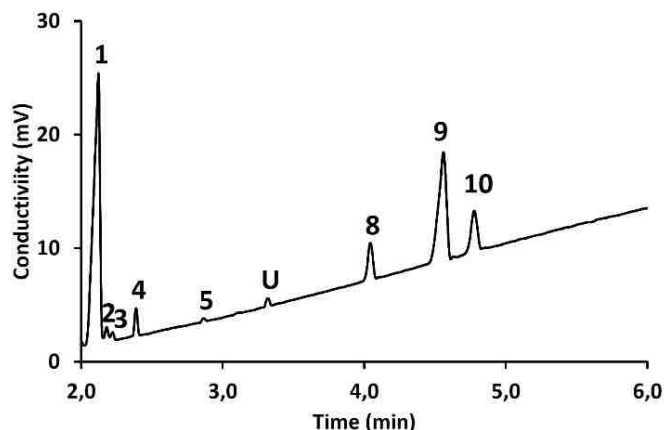
**Temperature :** 25 °C



### Cow's Milk (dilution 1/200)



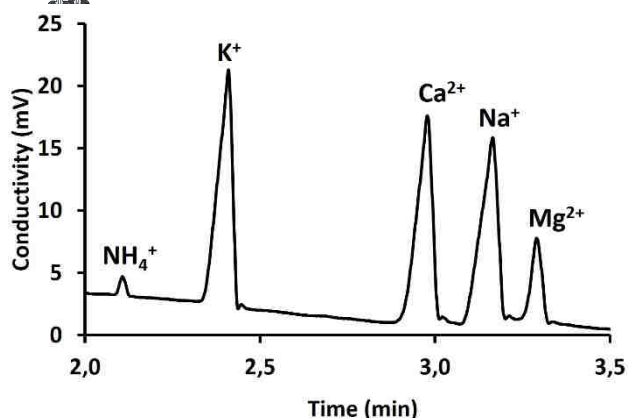
$\text{NH}_4^+$  = 13 mg/L ;  $\text{K}^+$  = 1000 mg/L ;  $\text{Ca}^{2+}$  = 1180 mg/L  
 $\text{Na}^+$  = 750 mg/L ;  $\text{Mg}^{2+}$  = 160 mg/L



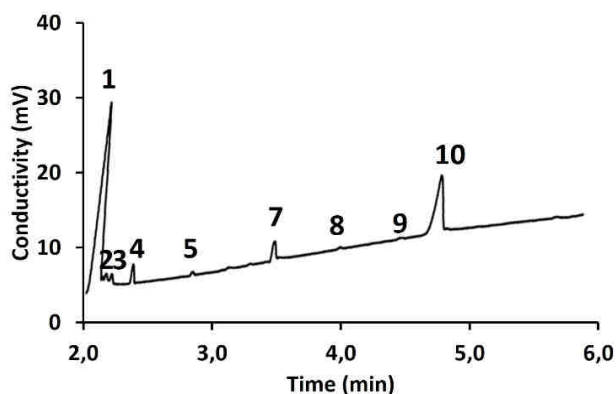
1 - chloride (1980 mg/L) ; 2 - nitrite (50 mg/L) ; 3 - nitrate (25 mg/L) ;  
4 - sulfate (120 mg/L) ; 5 - formate (20 mg/L) ; 8 - acétate (660 mg/L)  
9 - lactate (5300 mg/L) ; 10 - phosphate (1650 mg/L)  
U : unknown peak



### Goat's Milk (dilution 1/200)



$\text{NH}_4^+$  = 20 mg/L ;  $\text{K}^+$  = 2070 mg/L ;  $\text{Ca}^{2+}$  = 1100 mg/L  
 $\text{Na}^+$  = 600 mg/L ;  $\text{Mg}^{2+}$  = 140 mg/L



1 - chloride (1750 mg/L) ; 2 - nitrite (50 mg/L) ; 3 - nitrate (50 mg/L) ;  
4 - sulfate (100 mg/L) ; 5 - formate (25 mg/L) ; 7 - citrate (780 mg/L) ;  
8 - acétate (30 mg/L) ; 9 - lactate (50 mg/L) ;  
10 - phosphate (3650 mg/L)