



Determination of 11 preservatives in food and cosmetic matrices



Good example of CE high power of Separation with 11 preservatives separated in 4 minutes

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ÉTABLISSEMENT PUBLIC D'ENSEIGNEMENT ET DE FORMATION

Developments carried out by BTS Anabiotech Students of Le Gros Chêne High School

INTRODUCTION

A High-performance capillary electrophoretic method with UV detection was developed to analyze 11 preservatives frequently used. In the optimized separation conditions, the 11 targeted compounds were resolved in 4 minutes. This method was then applied to the analysis of cosmetic cream and orange juice. This development was carried out as part of experimental projects in Le Gros Chêne HighSchool (France).

STANDARD AND REAL ANALYSIS

Buffer : borate 20 mM, pH 8.0
Capillary : fused-silica capillary, L = 40 cm, ID = 50 μ m
Injection : hydrodynamic, 50 mbar, 3 s
Voltage : +25kV
Detection : UV, 206 nm
Temperature : 35 °C

Identification :

EOF : Electroosmotic Flow

- 1 – chlorphenesin
- 2 – butyl p-hydroxybenzoate
- 3 – propyl p-hydroxybenzoate
- 4 – ethyl p-hydroxybenzoate
- 5 – methyl p-hydroxybenzoate
- 6 – hippuric acid
- 7 – dehydroacetic acid
- 8 – anisic acid
- 9 – sorbic acid
- 10 – benzoic acid
- 11 – salicylic acid
- 12 – hydroxybenzoic acid

Preservatives in cosmetic cream were extracted by sulfuric acid and a mixture ethanol/water.

