APPLICATION NOTE

WynSep Adaptive Separation

Lactoserum Proteins Analysis by Capillary Electrophoresis

Developments carried out by TFFFC Platform (INP Purpan, Toulouse)

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Dairy products constitute a major component of human food. In order to determine milk quality, origin, and adulteration, food laboratories need analytical technique with high performances. Lactoserum proteins are important markers of this quality. In this Application Note, a capillary electrophoresis method using a UV detection is described for the milk proteins analysis. Due to the use of a short capillary, and a very simple buffer, fast separations of α-lactalbumin, β-lactoglobulin A, and β-lactoglobulin B are obtained (<10 minutes).

SAMPLE PREP for 50 g of Fresh Milk

- Adjust milk pH at 5.5 with formic acid
- Centrifugation 10 min, 4°C, 4800 rpm
- Take off the solid phase from the Tube
- Ajust the remaining phase at pH 5.0 with formic acid
- Centrifugation 10 min, 4°C, 4800 rpm
- Elimination of the supernatant (cream) and the centrifugate (caseins) in order to have the lactoserum
- Filtration of the lactoserum with 0.2 µm filter

ANALYTICAL CONDITIONS

Buffer : Boric Acid + Sodium Sulfate, pH 8.0

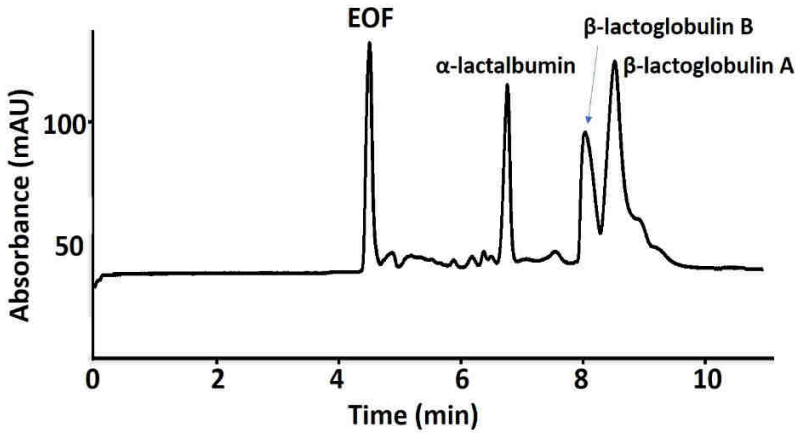
Capillary : silica bare-fused

Injection : hydrodynamic, 50 mbar, 5 s

Voltage : +9 kV

Detection : UV direct, 214 nm

Temperature : 25 °C



Proteins	pI	kDa
α-lactalbumin	4.5	14.2
β-lactoglobulin A	5.1	18.4
β-lactoglobulin B	5.1-5.3	18.3

CAPILLARY ELECTROPHORESIS FOR PROTEINS

- FAST SEPARATION
- ECONOMIC, low cost consumables
- SEPARATION WITH HIGH RESOLUTION
- ECOLOGIC no gas, no solvent