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Analysis of Whey Proteins by Capillary Electrophoresis Using Buffer-Containing Polymeric Additives

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This paper shows the possibilities of capillary electrophoresis for analysis of the major whey proteins (ß-lactoglobulin A, ß-lactoglobulin B, α-lactalbumin, and BSA) in standard samples and raw and UHT milks. A new separation buffer, consisting of Tris-boric acid, SDS, and polyethylene glycol 8000, was used for the separation. Good migration time reproducibility was achieved for the proteins of standard samples and those of real samples analyzed on the same day and on 3 different d. Area reproducibility for the protein peaks ranged from 2.7% for ß-lactoglobulins to 17.9% for BSA, including standard and real samples. Also, the concentration of the major proteins determined in the milks studied agrees quite well with the values obtained by HPLC. Furthermore, analysis time can be fourfold smaller using capillary electrophoresis than that usually obtained in HPLC.

Key Words: capillary electrophoresis • whey proteins • protein analysis

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