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QUANTITATIVE DETERMINATION OF FATTY ACIDS IN INFANT FORMULA BY GAS CHROMATOGRAPHY WITHOUT DERIVATIZATION

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Abstract:

Fatty acids play important roles in biological systems and the newborns fatty acids requirements are covered only by the milk. It is of particular interest to qualify the content of the fatty acids in the milk. This study was performed to determine the levels of some fatty acids in the infant formulas and also to describe a method without derivatization for the fatty acids analysis and applying it to the control of infant formulas. Free fatty acids were produced by adding isopropanol- KOH to milk fat extract and heating it to saponify and acidify by H2SO4. Free fatty acids were extracted and were quantified by capillary gas chromatography on a fused silica column (AT-1000) and flame ionization detector. The average experimental values of lauric, palmitic, stearic and linoleic fatty acids contents of twenty infant formulas were 6.47, 16.52, 2.11 and 14.56 g/100g, respectively. The obtained experimental values of lauric and linoleic fatty acids contents of twenty infant formulas were in good agreement with the values proposed by standards of codex alimentary.

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