

研究论文

毛细管气相色谱法测定乳脂中的cis-9,trans-11-共轭亚油酸

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摘要 建立了测定乳脂中cis-9, trans-11-共轭亚油酸(CLA)的毛细管气相色谱方法。样品经正己烷-异丙醇提取、甲醇-甲醇钠甲酯化后,进行气相色谱分析;采用程序升温,以保留时间定性,外标法定量。采用该方法测得共轭亚油酸的回收率为100.26%,相对标准偏差(RSD)为1.9%(n=6),检测限为1 mg/L。该方法样品用量少,前处理简单,建立的实验条件准确可靠,不仅可以用来测定cis-9, trans-11-CLA的含量,而且对于乳制品中所含的其他脂肪酸的分析测定也具有指导意义。

关键词 [cis-9, trans-11-共轭亚油酸](#) [毛细管气相色谱](#) [乳脂](#)

分类号

Analysis of cis-9, trans-11-Conjugated Linoleic Acid in Milk Fat by Capillary Gas Chromatography

Abstract

Conjugated linoleic acid (CLA) is a term representing a mixture of positional and geometric isomers of octadecadienoic acid with a conjugated double bond system. Conjugated linoleic acid has attracted a great deal of interest among nutritionists because it is a natural fat component that appears to have a number of health improvement properties. The cis-9, trans-11-CLA is the major CLA isomer found in dairy products accounting for 75% to 90% of the total CLA in milk fat. A capillary gas chromatographic method equipped with a flame ionization detector for the analysis of the cis-9, trans-11-CLA in milk fat was developed. The cis-9, trans-11-CLA was extracted with hexane-isopropanol, methylated with methanol-sodium methylate and cis-9,trans-11-CLA was separated and quantified using gas chromatography. Retention time of the peaks was used for qualitative analysis, while external standard method was used for quantitative analysis. The recovery of the cis-9, trans-11-CLA was 100.26%. The relative standard deviation was 1.9% (n=6). This method presented is advantageous for high precision, high sensitivity analysis with smaller sample size and simpler pretreatment. It would be of significance for analyzing the contents of other fatty acids in the milk and milk products.

Key words [cis-9, trans-11-CLA](#) [capillary gas chromatography](#) [milk fat](#)

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