

论文

硝酸银硅胶柱层析分离血浆不饱和脂肪酸

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摘要:

目的: 利用硝酸银硅胶填料有效分离出血浆混合脂肪酸中的亚油酸。方法: 通过改进的FOLCH法提取血浆总脂后, 再采用皂化、酸化水解的方法将总脂转化为混合脂肪酸。用ghosh法将硅胶改性为硝酸银硅胶后, 以亚油酸为对象, 通过静态吸附试验了解硝酸银硅胶对不饱和脂肪酸的吸附特性, 采用柱层析的方法分离血浆混合脂肪酸中的亚油酸。结果: 血浆与有机溶剂在1: 5时既能有效萃取血浆总脂, 用正己烷: 二氯甲烷: 乙醚=89: 10: 1作为洗脱剂, 将洗脱液甲酯化后进行GC和GC-MS检测, 硝酸银硅胶柱的洗脱液中亚油酸的纯度60.74%, 硅胶柱的为23.65%, 不饱和脂肪酸得到了较好的纯化。

关键词: 硝酸银硅胶 血浆 亚油酸 不饱和脂肪酸

Extraction and Separation of Unsaturated Fatty Acids in Blood Plasma by Silver Nitrate-silica Gel Column Chromatography

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Abstract:

A rapid and efficient method for separation of unsaturated fatty acid is described as the FOLCH method that is extract total lipids of blood plasma with 1: 20 blood plasma to extrcatant (methanol: chloroform=1: 2). The method is modification from it that allows the proption of blood plasma to extrcatant(methanol: dichloromethane=1: 2)reducing from1: 20 to 1: 5. we prepared silver nitrate-silica gel by the Ghosh method, and, drew the adsorption isotherm of linoleic acid to understand the character of silver nitrate-silica gel for adsorbing unsaturated fatty acid. In addition, fatty acids were eluted with a mixture of n-hexane: dichloromethane: ethyl ether=89: 10: 1 after the sample has been loaded column. After that, linoleic acid was quantitatively analysed and the others fatty acids were qualitatively analysed by GC and GC-MS. There are distinct differences for purification of linoleic acid and the others fatty acids in the eluent, the silver nitrate-silica gel can well purified unsaturated fatty acids in blood plasma.

Keywords: Silver nitrate-silica gel Blood plasma Linoleic acid Unsaturated fatty acid

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