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论文

牛血清白蛋白脂质体包封率的测定方法研究

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摘要:

在较温和的实验条件下，制备粒径约100 nm包载模型药牛血清白蛋白(BSA)脂质体，将双波长考马斯亮蓝G-250染料结合法用于测定BSA脂质体包封率时游离蛋白质含量。BSA包封率测定运用凝胶柱色谱法，考察不同型号的葡聚糖凝胶对游离药物和脂质体的分离性能；对于游离BSA的测定，比较了双波长紫外分光光度法、考马斯亮蓝G-250染料法(Bradford法)、双波长考马斯亮蓝G-250染料法3种测定方法。在吸收度和线性均良好的情况下，双波长考马斯亮蓝G-250染料法的检测范围为0.25～32 μg·mL^{-1},与Bradford法的检测范围(5～80 μg·mL^{-1})相比，检测灵敏度提高了20倍，检测范围更宽。由此可见，双波长考马斯亮蓝G-250染料法测定蛋白质含量时，检测限较低，线性良好，检测线性范围更宽，可作为测定BSA脂质体包封率时蛋白质含量的测定手段。

关键词： BSA脂质体 凝胶柱色谱法 包封率 双波长考马斯亮蓝G-250染料法

The entrapped efficiency of BSA liposome

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Abstract:

BSA liposomes were prepared with approximately 100 nm mean particle size under rather gentle experiment conditions, and two-colorimetric coomassie brilliant blue protein was employed to measure the free drug in the entrapped efficiency (EE%) determination of BSA liposomes. Gel filtration was used to measure the EE%, and several Sephadex gels were examined by the separation of liposomes and free drug. To determine the free drug, three methods were compared on two-colorimetric UV spectrophotography, Bradford and two-colorimetric coomassie brilliant blue, separately. Two-colorimetric coomassie brilliant blue process increased the accuracy and improved the sensitivity of the assay about 20-fold comparing with the Bradford method. Two-colorimetric coomassie brilliant blue assay appeared to be more sensitive and showed broader dynamic range to measure the free BSA in the EE% determination of BSA liposome.

Keywords: gel filtration entrapped efficiency two-colorimetric coomassie brilliant blue protein assays BSA liposome

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