

论文

自组装共混制备PEG化基因载体

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摘要:

通过含PEG链段的两亲聚合物的自组装共混, 制备了基于疏水作用力的新型PEG化非病毒基因载体. 分别选用胆固醇-聚乙二醇和聚乙二醇-聚丙二醇-聚乙二醇作为共混改性剂, 研究两亲聚合物的种类对组装体在生理盐溶液中的稳定性及基因转染效率的影响. 结果表明, 疏水驱动力的大小是获得稳定的PEG化基因超分子组装体的关键. 通过对两亲聚合物中疏水链段的选择调控, 可制备稳定的PEG化基因超分子组装体, 提高基因传递体系在生理盐溶液中的稳定性及基因转染效率. 通过自组装共混, 为新型PEG化基因超分子组装体的制备提供了切实可行的新方法.

关键词: 非病毒基因载体 超分子组装 自组装共混

Construction of PEGylated Polyplexes via Self-organizing Blend

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Abstract:

An easy and favorable approach has been developed to prepare hydrophobic-driven PEGylated polyplexes via self-organizing blend of PEG-containing amphiphilic polymer. Poly(ethylene glycol) cholesterol ether and PEO-PPO-PEO was chosen as an amphiphilic polymer respectively. The results indicate that different amphiphilic polymers have great influence on the stability and transfection efficiency of polyplexes under physiological condition. Hydrophobic interaction is the key point to fabricate stable PEGylated polyplexes. By selecting the proper amphiphilic polymer, stable PEGylated polyplexes were fabricated successfully to improve stability and transfection efficiency at a physiological salt concentration. This facile approach to prepare the PEGylated polyplexes via self-organizing blend may have great potential in non-viral gene vector research and application.

Keywords: Non-viral gene vector Supramolecular assembly Self-organizing blend

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