

生命科学

复合环境离子强度对BDCP/DNA的粒径与转染效率的影响

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摘要 为了探讨组装环境对基因载体/DN复合物的粒径和转染效果的影响, 在三种不同离子浓度溶液体系(PBS, 5% 葡萄糖溶液, H₂O)中测量BDCP (biodegradable cationic polymer, 一种生物可降解的阳离子聚合物)/DNA复合物粒径和结合力, 进行了体外转染试验和毒性试验. 结果显示, PBS最适合组装转染复合物, 可取得更好的稳定性、最高的转染效率和较低细胞毒性、低溶血率; 在5%葡萄糖溶液和水中组装的BDCP/质粒复合物结合力较弱, 转染效率比较低. 得出结论, BDCP/DNA粒径、结合力和基因转染效率受组装体系的离子强度影响.

关键词 [聚乙烯亚胺](#); [基因转染](#); [非病毒载体](#)

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Effect of ionic strength on the particle size and gene transfection efficiency of BDCP/DNA complexes(Chinese)

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Abstract

To explore the effects of particle formation environments on gene carrier-DNA particle size and gene delivery efficiency, the particle size, binding affinity were measured of BDCP (cationic polymer, having PEI 600 backbone with biodegradable bond) in varied ionic conditions(PBS, 5% glucose, H₂O). And the gene delivery efficiency and cytotoxicity were tested in similar conditions. Results showed that PBS was favorable to achieve improved stability, high gene delivery efficiency and low hemolysis effect, and BDCP/plasmid combined in 5% glucose or H₂O were found weaker binding affinity and lower transfection efficiency. Cationic carrier/DNA particle size, affinity, and gene transfection efficiency are affected by ionic strength.

Key words [polyethyleneimine](#) [gene delivery](#) [non-viral vector](#)

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