

论文

用基因转染方法转运神经营养因子(GDNF)进入脑的体外研究

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摘要:

关键词: 血脑屏障 脑毛细血管内皮细胞 基因转移

*In vitro* delivery of gene encoding neurotrophic (GDNF) into brain by gene transfer

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Abstract:

Aim The gene encoding neurotrophic factor was transfected into brain capillary endothelial cells with the aim of delivering the gene product extensively into the brain parenchyma by making use of the secretory function of BCECs. Methods Plasmid DNA encoding mouse glial cell-derived neurotrophic factor (*mGDNF* gene) was constructed and prepared. Then, *mGDNF* gene was transfected into cultured mouse brain capillary endothelial cells (BCECs) *in vitro*. The amount of mGDNF protein in the transfected cells and secreted from the transfected cells were determined by ELISA. The polarity of the secretion of mGDNF protein from BCECs was investigated in a bicameral culture system. Results The mGDNF protein was detected out not only from the transfected cells but also the cultured media. And mGDNF protein was mainly found in the brain side of the culture compartment. Conclusion It has been demonstrated that a secretory protein can be successfully delivered into brain parenchyma by utilizing the secretory pathway of BCECs.

Keywords: brain capillary endothelial cell gene transfer blood-brain barrier

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