

综述

葡萄糖转运体 1 研究进展

刘丽萍, 米卫东*

(解放军总医院麻醉手术中心, 北京 100853)

收稿日期 2007-10-8 修回日期 网络版发布日期 2008-3-6 接受日期

摘要 葡萄糖转运体 (glucose transporter, GLUT) 家族是葡萄糖转运的主要媒介, 目前发现有13个成员。其中 GLUT1 以异构体的形式广泛表达于多种细胞, 是介导葡萄糖经过血脑屏障的主要转运体。疾病可以改变 GLUT1 介导的葡萄糖转运过程, 糖转运受到干扰能使脑功能受损, 甚至导致脑死亡。近来研究显示, GLUT1 能介导一些神经活性药物的转运, 如糖基化的神经肽、低分子量肝素及 D-葡萄糖衍生物等。因此, 依赖于葡萄糖转运体的葡萄糖运载方法有可能是一个选择性药物运输系统, 通过此高效转运系统, 可调节药物进入大脑。

关键词 [葡萄糖转运体1型](#); [血脑屏障](#); [药物载体](#)

分类号 [R969.1](#)

Advances in research of glucose transporter 1

LIU Li-ping, MI Wei-dong

(Anesthesia and Operation Center, Chinese PLA General Hospital, Beijing 100853, China)

Abstract

Glucose is the main energy source of human brain. The family of facilitative glucose transporter (GLUT) proteins is responsible for the entry of glucose into cells throughout the periphery and the brain. Thirteen members of the GLUT family have been described thus far. GLUT1 in the form of isomer is widely expressed in many kinds of cells and is a main transporter that mediates passage of glucose through blood-brain barrier (BBB). Various diseases change the process of glucose transport and interference of glucose transport can damage brain normal function even cause brain death. Recently, studies have shown that GLUT1 can participate in the transport of some neuroactive drugs to enter the central nervous system, such as glycosylated neuropeptides, low molecular weight heparin and D-glucose-derived drugs. Moreover, method of glucose transport depending on GLUT1 may be a selective drug-delivery system. By utilizing such highly specific transport mechanism, it should be possible to regulate the entry of candidate drugs.

Key words [glucose transporter type 1](#) [blood-brain barrier](#) [drug carriers](#)

DOI:

通讯作者 米卫东 wddd1962@yahoo.com.cn

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(393KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“葡萄糖转运体1型; 血脑屏障; 药物载体”的 相关文章](#)
- ▶ 本文作者相关文章
 - [刘丽萍](#)
 - [米卫东](#)