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Current understanding of glucose transporter 4 expression and functional mechanisms

Tiannan Wang, Jing Wang, Xinge Hu, Xinaju Huang, Guo-Xun Chen

Abstract

Glucose is used aerobically and anaerobically to generate energy for cells. Glucose transporters (GLUTs) are transmembrane proteins that transport glucose across the cell membrane. Insulin promotes glucose utilization in part through promoting glucose

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Insulin-stimulated glucose transporter 4 (GLUT4) translocation promoting glucose uptake is vital to glucose homeostasis and is a defined target of antidiabetic drug research. **Existing functional assays to detect the process of GLUT4 translocation are hampered due to assay variability and low sensitivity, thus slowing down the progress towards the development of preferred alternative to insulin**.

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Insulin promotes **glucose** uptake into muscle and adipose tissues through **glucose transporter 4** (GLUT4). In unstimulated cells, rapid endocytosis, slow exocytosis and dynamic or static retention cause GLUT4 to concentrate in early recycling endosomes, the trans-Golgi network and vesicle-associated protein 2-containing vesicles.The coordinated action of phosphatidylinositol 3-kinase effectors ...

Cited by: 278 **Author:** Chandrasagar B Dugani, Amira Klip

Publish Year: 2005

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Cited by: 34 **Author:** Joëlle Rüegg, Wen Cai, Mohsen Karimi, ...

Publish Year: 2011

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