SANTA CRUZ BIOTECHNOLOGY, INC.

Glut1 (C-20): sc-1605

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glucose is fundamental to the metabolism of mammalian cells. Its passage across cell membranes is mediated by a family of transporters termed glucose transporters or Gluts. In adipose and muscle tissue, Insulin stimulates a rapid and dramatic increase in glucose uptake, which is largely due to the redistribution of the Insulin-inducible glucose transporter, Glut4. In response to Insulin, Glut4 is quickly shuttled from an intracellular storage site to the plasma membrane where it binds glucose. In contrast, the ubiquitously expressed glucose transporter Glut1 is constitutively targeted to the plasma membrane, and shows a much less dramatic translocation in response to Insulin. Glut1 and Glut4 are 12 pass transmembrane proteins (12TM) whose carboxy-termini may dictate their cellular localization. Aberrant Glut4 expression has been suggested to contribute to such maladies as obesity and diabetes. Glut4 null mice have shown that while functional Glut4 protein is not required for maintaining normal glucose levels, it is necessary for sustained growth, normal cellular glucose, fat metabolism and prolonged longevity.

CHROMOSOMAL LOCATION

Genetic locus: SLC2A1 (human) mapping to 1p34.2; Slc2a1 (mouse) mapping to 4 D2.1.

SOURCE

Glut1 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of Glut1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1605 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Glut1 (C-20) is recommended for detection of Glut1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Glut1 (C-20) is also recommended for detection of Glut1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Glut1 siRNA (h): sc-35493, Glut1 siRNA (m): sc-35494, Glut1 shRNA Plasmid (h): sc-35493-SH, Glut1 shRNA Plasmid (m): sc-35494-SH, Glut1 shRNA (h) Lentiviral Particles: sc-35493-V and Glut1 shRNA (m) Lentiviral Particles: sc-35494-V.

Molecular Weight of Glut1: 55 kDa.

Positive Controls: H4 cell lysate: sc-2408.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

SELECT PRODUCT CITATIONS

1. Sköld, M., et al. 2000. Induction of VEGF and VEGF receptors in the spinal cord after mechanical spinal injury and prostaglandin administration. Eur. J. Neurosci. 12: 3675-3686.
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3. Higashi, K., et al. 2000. Correlation of Glut1 glucose transporter expression with [18F]FDG uptake in non-small cell lung cancer. Eur. J. Nucl. Med. 27: 1778-1785.
4. Batrakova, E.V., et al. 2004. Effects of pluronic P85 on GLUT1 and MCT1 transporters in the blood-brain barrier. Pharm. Res. 21: 1993-2000.
5. Bäckberg, M. and Meister, B. 2004. Abnormal cholinergic and GABAergic vascular innervation in the hypothalamic arcuate nucleus of obese tub/tub mice. Synapse 52: 245-257.
6. Jager, J., et al. 2007. Interleukin-1β-induced insulin resistance in adipocytes through down-regulation of insulin receptor substrate-1 expression. Endocrinology 148: 241-251.
7. Ando, M., et al. 2008. Cellular localization of facilitated glucose transporter 1 (GLUT-1) in the cochlear stria vascularis: its possible contribution to the transcellular glucose pathway. Cell Tissue Res. 331: 763-769.
8. Kaddai, V., et al. 2008. The nitric oxide-donating derivative of acetylsalicylic acid, NCX 4016, stimulates glucose transport and glucose transporters translocation in 3T3-L1 adipocytes. Am. J. Physiol. Endocrinol. Metab. 295: E162-E169.
9. Shen, X.H., et al. 2009. Hyperglycemia reduces mitochondrial content and glucose transporter expression in mouse embryos developing *in vitro*. J. Reprod. Dev. 55: 534-541.
10. Van der Borght, K., et al. 2009. Physical exercise leads to rapid adaptations in hippocampal vasculature: temporal dynamics and relationship to cell proliferation and neurogenesis. Hippocampus 19: 928-936.
11. Berenguer, M., et al. 2011. Dimethyl sulfoxide enhances GLUT4 translocation through a reduction in GLUT4 endocytosis in insulin-stimulated 3T3-L1 adipocytes. Biochimie 93: 697-709.
12. Dhurandhar, E.J., et al. 2011. E4orf1: a novel ligand that improves glucose disposal in cell culture. PLoS ONE 6: e23394.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

MONOS Satisfaction Guaranteed

Try **Glut1 (A-4): sc-377228**, our highly recommended monoclonal alternative to Glut1 (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Glut1 (A-4): sc-377228**.