

Glut1 (H-43): sc-7903

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 twelve 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 (H-43) is a rabbit polyclonal antibody raised against amino acids 218-260 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.

APPLICATIONS

Glut1 (H-43) 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), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 (H-43) 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.

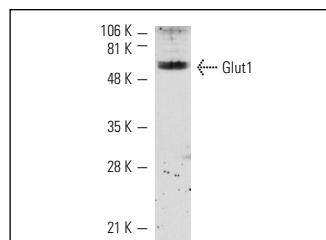
STORAGE

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

RESEARCH USE

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

DATA



Glut1 (H-43): sc-7903. Western blot analysis of Glut1 expression in H4 whole cell lysate.

SELECT PRODUCT CITATIONS

- Zhou, R., et al. 2002. Genotoxic exposure is associated with alterations in glucose uptake and metabolism. *Cancer Res.* 62: 3515-3520.
- Oliveira, R.L., et al. 2004. Cold-induced PGC-1 α expression modulates muscle glucose uptake through an insulin receptor/Akt-independent, AMPK-dependent pathway. *Am. J. Physiol. Endocrinol. Metab.* 287: E686-E695.
- Gaudreault, N., et al. 2004. Characterisation of glucose transporters in the intact coronary artery endothelium in rats: Glut2 upregulated by long-term hyperglycaemia. *Diabetologia* 47: 2081-2092.
- Skop, A.R. 2004. Dissection of the mammalian midbody proteome reveals conserved cytokinesis mechanisms. *Science* 305: 61-66.
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- Fujimoto, T., et al. 2009. Altered energy homeostasis and resistance to diet-induced obesity in KRAP-deficient mice. *PLoS ONE* 4: e4240.
- Bernas, M.J., et al. 2010. Establishment of primary cultures of human brain microvascular endothelial cells to provide an *in vitro* cellular model of the blood-brain barrier. *Nat. Protoc.* 5: 1265-1272.

PROTOCOLS

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