SANTA CRUZ BIOTECHNOLOGY, INC.

Glut1 (H-43): sc-7903

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 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.

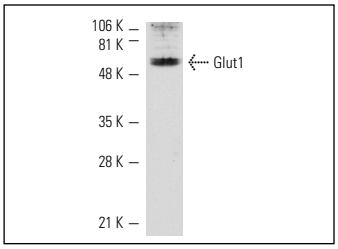
STORAGE

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

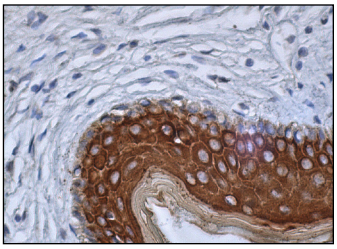
RESEARCH USE

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.



Glut1 (H-43): sc-7903. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of epidermal cells.

SELECT PRODUCT CITATIONS

1. Zhou, R., et al. 2002. Genotoxic exposure is associated with alterations in glucose uptake and metabolism. Cancer Res. 62: 3515-3520.
2. 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.
3. Capell, W.H., et al. 2010. Fatty acids increase glucose uptake and metabolism in C2C12 myoblasts stably transfected with human lipoprotein lipase. Am. J. Physiol. Endocrinol. Metab. 299: E576-E583.
4. Deng, A., et al. 2010. Renal protection in chronic kidney disease: hypoxia-inducible factor activation vs. angiotensin II blockade. Am. J. Physiol. Renal Physiol. 299: F1365-F1373.
5. Mendes, A.I., et al. 2010. Protein kinase WNK1 promotes cell surface expression of glucose transporter GLUT1 by regulating a Tre-2/USP6-BUB2-Cdc16 domain family member 4 (TBC1D4)-Rab8A complex. J. Biol. Chem. 285: 39117-39126.
6. Tepavcevic, S., et al. 2011. Interaction between Insulin and estradiol in regulation of cardiac glucose and free fatty acid transporters. Horm. Metab. Res. 43: 524-530.
7. Ma, Y., et al. 2011. Upregulation of growth signaling and nutrient transporters in cotyledons of early to mid-gestational nutrient restricted ewes. Placenta 32: 255-263.
8. Lappas, M., et al. 2012. Hypoxanthine-xanthine oxidase down-regulates GLUT1 transcription via SIRT1 resulting in decreased glucose uptake in human placenta. J. Endocrinol. 213: 49-57.