

Glut1 (A-4): sc-377228



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.

SOURCE

Glut1 (A-4) is a mouse monoclonal antibody raised against amino acids 218-260 of Glut1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Glut1 (A-4) is available conjugated to agarose (sc-377228 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377228 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377228 PE), fluorescein (sc-377228 FITC), Alexa Fluor® 488 (sc-377228 AF488), Alexa Fluor® 546 (sc-377228 AF546), Alexa Fluor® 594 (sc-377228 AF594) or Alexa Fluor® 647 (sc-377228 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377228 AF680) or Alexa Fluor® 790 (sc-377228 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Glut1 (A-4) is recommended for detection of Glut1 of human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

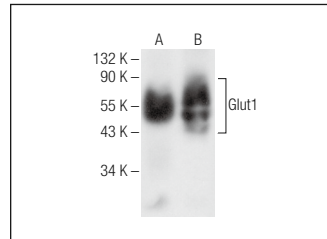
Molecular Weight of Glut1: 55 kDa.

Positive Controls: H4 cell lysate: sc-2408 or MDA-MB-231 cell lysate: sc-2232.

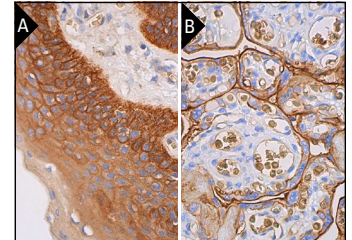
STORAGE

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

DATA



Glut1 (A-4): sc-377228. Western blot analysis of Glut1 expression in H4 (A) and MDA-MB-231 (B) whole cell lysates.



Glut1 (A-4): sc-377228. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing membrane and cytoplasmic staining of squamous epithelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue, showing membrane staining of trophoblastic cells. Detection reagent used: m-IgGκ BP-HRP: sc-516102 (B).

SELECT PRODUCT CITATIONS

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- Perrone, M.G., et al. 2017. Effect of mofezolac-galactose distance in conjugates targeting cyclooxygenase (COX)-1 and CNS GLUT-1 carrier. *Eur. J. Med. Chem.* 141: 404-416.
- Feng, Y., et al. 2018. The epigenetically downregulated factor CYGB suppresses breast cancer through inhibition of glucose metabolism. *J. Exp. Clin. Cancer Res.* 37: 313.
- Xu, W., et al. 2019. Novel metabolic disorders in skeletal muscle of Lipodystrophic Bslc2/Seipin deficient mice. *Mol. Cell. Endocrinol.* 482: 1-10.
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- Podratz, P.L., et al. 2020. Disruption of fertility, placenta, pregnancy outcome, and multigenerational inheritance of hepatic steatosis by organotin exposure from contaminated seafood in rats. *Sci. Total Environ.* 723: 138000.
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RESEARCH USE

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