SANTA CRUZ BIOTECHNOLOGY, INC.

Glut3 (B-6): sc-74497

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. Glut1, Glut3 and Glut4 are high-affinity transporters, whereas Glut2 is a low-affinity transporter. 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. Glut2 expression is seen in pancreatic β cells, hepatocytes and basolateral membranes of intestinal and epithelial cells, while the highest expression of Glut3 has been found in neuronal tissue.

CHROMOSOMAL LOCATION

Genetic locus: SLC2A3 (human) mapping to 12p13.31; Slc2a3 (mouse) mapping to 6 F2.

SOURCE

Glut3 (B-6) is a mouse monoclonal antibody raised against amino acids 216-265 mapping within an internal region of Glut3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Glut3 (B-6) is available conjugated to agarose (sc-74497 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74497 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74497 PE), fluorescein (sc-74497 FITC), Alexa Fluor® 488 (sc-74497 AF488), Alexa Fluor® 546 (sc-74497 AF546), Alexa Fluor® 594 (sc-74497 AF594) or Alexa Fluor® 647 (sc-74497 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74497 AF680) or Alexa Fluor® 790 (sc-74497 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Glut3 (B-6) is recommended for detection of Glut3 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Glut3 siRNA (h): sc-41218, Glut3 siRNA (m): sc-41219, Glut3 siRNA (r): sc-270174, Glut3 shRNA Plasmid (h): sc-41218-SH, Glut3 shRNA Plasmid (m): sc-41219-SH, Glut3 shRNA Plasmid (r): sc-270174-SH, Glut3 shRNA (h) Lentiviral Particles: sc-41218-V, Glut3 shRNA (m) Lentiviral Particles: sc-41219-V and Glut3 shRNA (r) Lentiviral Particles: sc-270174-V.

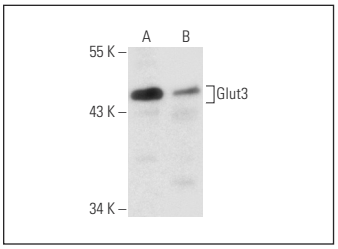
Molecular Weight of Glut3: 48-70 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or ES-2 cell lysate: sc-24674.

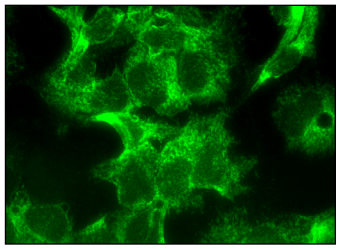
STORAGE

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

DATA



Glut3 (B-6): sc-74497. Western blot analysis of Glut3 expression in Hep G2 (**A**) and ES-2 (**B**) whole cell lysates.



Glut3 (B-6): sc-74497. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. Olianas, M.C., et al. 2011. δ-opioid receptors stimulate Glut1-mediated glucose uptake through Src- and IGF-1 receptor-dependent activation of PI3-kinase signalling in CHO cells. Br. J. Pharmacol. 163: 624-637.
2. Requejo-Aguilar, R., et al. 2014. PINK1 deficiency sustains cell proliferation by reprogramming glucose metabolism through HIF1. Nat. Commun. 5: 4514.
3. Liu, Z., et al. 2015. High-fat diet induces hepatic Insulin resistance and impairment of synaptic plasticity. PLoS ONE 10: e0128274.
4. Nagarajan, A., et al. 2017. Paraoxonase 2 facilitates pancreatic cancer growth and metastasis by stimulating Glut1-mediated glucose transport. Mol. Cell 67: 685-701.
5. Sifat, A.E., et al. 2018. Nicotine and electronic cigarette (E-Cig) exposure decreases brain glucose utilization in ischemic stroke. J. Neurochem. 147: 204-221.
6. Ali, A., et al. 2019. CAV1-Glut3 signaling is important for cellular energy and can be targeted by atorvastatin in non-small cell lung cancer. Theranostics 9: 6157-6174.
7. Alves, V.S., et al. 2020. Transport of glucose by the plasma membrane affects the removal and concentration of Ca^{2+} at rest in neurons—implications of a condition prior to Alzheimer's disease? Neuroscience 431: 52-63.
8. Jothi, J., et al. 2020. Connexin 30 mediated rewiring of glucose metabolism in rat C6 xenograft and grades of glioma. Mol. Cell. Biochem. 470: 157-164.
9. Song, X., et al. 2021. PDK4 dictates metabolic resistance to ferroptosis by suppressing pyruvate oxidation and fatty acid synthesis. Cell Rep. 34: 108767.

RESEARCH USE

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