SANTA CRUZ BIOTECHNOLOGY, INC.

Glut3 (G-5): sc-74399

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, 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 (G-5) 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 (G-5) is available conjugated to agarose (sc-74399 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74399 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74399 PE), fluorescein (sc-74399 FITC), Alexa Fluor® 488 (sc-74399 AF488), Alexa Fluor® 546 (sc-74399 AF546), Alexa Fluor® 594 (sc-74399 AF594) or Alexa Fluor® 647 (sc-74399 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74399 AF680) or Alexa Fluor® 790 (sc-74399 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Glut3 (G-5) 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.

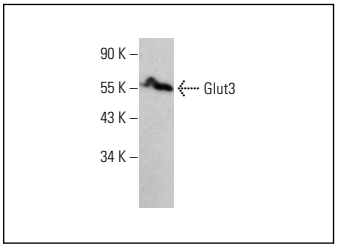
Molecular Weight of Glut3: 48-70 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or U-87 MG cell lysate: sc-2411.

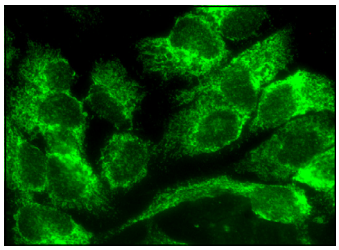
STORAGE

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

DATA



Glut3 (G-5): sc-74399. Western blot analysis of Glut3 expression in U-87 MG whole cell lysate.



Glut3 (G-5): sc-74399. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. Lin, C.C., et al. 2012. Loss of the respiratory enzyme citrate synthase directly links the Warburg effect to tumor malignancy. Sci. Rep. 2: 785.
2. Liu, Z., et al. 2017. Effects of lipoic acid on high-fat diet-induced alteration of synaptic plasticity and brain glucose metabolism: a PET/CT and ^{13}C-NMR study. Sci. Rep. 7: 5391.
3. Tseng, P.L., et al. 2018. The decrease of glycolytic enzyme hexokinase 1 accelerates tumor malignancy via deregulating energy metabolism but sensitizes cancer cells to 2-deoxyglucose inhibition. Oncotarget 9: 18949-18969.
4. Chan, K., et al. 2019. eIF4A supports an oncogenic translation program in pancreatic ductal adenocarcinoma. Nat. Commun. 10: 5151.
5. Yang, M., et al. 2020. HMGA1 promotes hepatic metastasis of colorectal cancer by inducing expression of glucose transporter 3 (GLUT3). Med. Sci. Monit. 26: e924975.
6. Stojakovic, A., et al. 2021. Partial inhibition of mitochondrial complex I ameliorates Alzheimer's disease pathology and cognition in APP/PS1 female mice. Commun. Biol. 4: 61.
7. Li, M., et al. 2022. Berberine modulates macrophage activation by inducing glycolysis. J. Immunol. 208: 2309-2318.
8. Nam, M.H., et al. 2023. Visualizing reactive astrocyte-neuron interaction in Alzheimer's disease using 11C-acetate and 18F-FDG. Brain 146: 2957-2974.
9. Khiat, N., et al. 2025. TGFβ1 restores energy homeostasis of human trophoblast cells under hyperglycemia *in vitro* by inducing PPARγ expression, AMPK activation, and HIF1α degradation. Cells 14: 45.

RESEARCH USE

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