

Glut5 (E-2): sc-271055

BACKGROUND

Glucose is the major source of our energy and there are numerous isoforms of the glucose transporter in mammals, including Glut1, Glut2, Glut3, Glut4, Glut5, Glut6, Glut7, Glut8 and Glut9. The Glut5 gene located on the short arm of human chromosome 1 encodes a 501 amino acid facilitative glucose transporter. Glut5 mRNA is highly expressed in small intestine and to a lesser extent in kidney, skeletal muscle and adipose tissue. Glut5 plays a critical role in fructose absorption in the small intestine and its expression is highly induced when exposed to a fructose-enriched diet. Glut5 transporter expressed in human skeletal muscle is specifically localized to the plasma membrane, where it participates in regulating hexose transfer across the sarcolemma. Glut8, a novel glucose transporter-like protein, exhibits significant sequence similarity with the other members of sugar transporter family. Glut8 comprises 12 putative membrane-spanning helices and several conserved motifs, which are important for transport activity. In human tissues, Glut8 is predominantly expressed in testis and, to a lesser extent, in most other tissues including skeletal muscle, heart, small intestine and brain. In addition, the Glut8 glucose transport facilitator has a hormonally regulated testicular function.

CHROMOSOMAL LOCATION

Genetic locus: SLC2A5 (human) mapping to 1p36.23; Slc2a5 (mouse) mapping to 4 E2.

SOURCE

Glut5 (E-2) is a mouse monoclonal antibody raised against amino acids 221-420 mapping within an internal region of Glut5 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.

Glut5 (E-2) is available conjugated to agarose (sc-271055 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271055 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271055 PE), fluorescein (sc-271055 FITC), Alexa Fluor[®] 488 (sc-271055 AF488), Alexa Fluor[®] 546 (sc-271055 AF546), Alexa Fluor[®] 594 (sc-271055 AF594) or Alexa Fluor[®] 647 (sc-271055 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271055 AF680) or Alexa Fluor[®] 790 (sc-271055 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

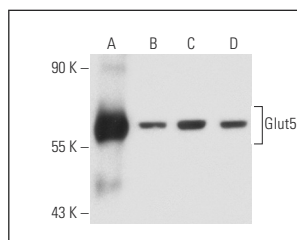
Glut5 (E-2) is recommended for detection of Glut5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 Glut5 siRNA (h): sc-41222, Glut5 siRNA (m): sc-41223, Glut5 shRNA Plasmid (h): sc-41222-SH, Glut5 shRNA Plasmid (m): sc-41223-SH, Glut5 shRNA (h) Lentiviral Particles: sc-41222-V and Glut5 shRNA (m) Lentiviral Particles: sc-41223-V.

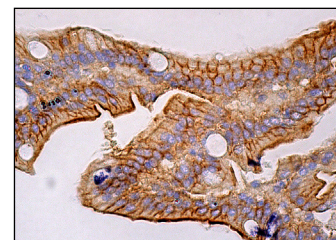
Molecular Weight of Glut5: 49-60 kDa.

Positive Controls: rat small intestine extract: sc-364811, HEL 92.1.7 cell lysate: sc-2270 or HEK293 whole cell lysate: sc-45136.

DATA



Glut5 (E-2): sc-271055. Western blot analysis of Glut5 expression in rat small intestine tissue extract (A) and HeLa (B), HEL 92.1.7 (C) and HEK293 (D) whole cell lysates.



Glut5 (E-2): sc-271055. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing membrane and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Wilder-Smith, C.H., et al. 2014. Fructose transporters Glut5 and Glut2 expression in adult patients with fructose intolerance. *United European Gastroenterol. J.* 2: 14-21.
2. Chen, W.L., et al. 2020. Glut5-mediated fructose utilization drives lung cancer growth by stimulating fatty acid synthesis and AMPK/mTORC1 signaling. *JCI Insight* 5: e131596.
3. Jeong, S., et al. 2021. High fructose drives the serine synthesis pathway in acute myeloid leukemic cells. *Cell Metab.* 33: 145-159.e6.
4. Zhang, S.S., et al. 2022. Long-term running exercise improves cognitive function and promotes microglial glucose metabolism and morphological plasticity in the hippocampus of APP/PS1 mice. *J. Neuroinflammation* 19: 34.
5. Xu, H.L., et al. 2023. Rare sugar L-sorbose exerts antitumor activity by impairing glucose metabolism. *Commun. Biol.* 6: 259.

RESEARCH USE

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