SANTA CRUZ BIOTECHNOLOGY, INC.

Glut5 (H-200): sc-30109

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.

REFERENCES

1. Kayano, T., et al. 1990. Human facilitative glucose transporters. Isolation, functional characterization and gene localization of cDNAs encoding an isoform (Glut5) expressed in small intestine, kidney, muscle and adipose tissue and an unusual glucose transporter pseudogene-like sequence. J. Biol. Chem. 265: 13276-13282.
2. Hundal, H.S., et al. 1992. Biochemical and immunocytochemical localization of the "Glut5 glucose transporter" in human skeletal muscle. Biochem. J. 286: 339-343.
3. Inukai, K., et al. 1993. Cloning and increased expression with fructose feeding of rat jejunal Glut5. Endocrinology 133: 2009-2014.
4. Rand, E.B., et al. 1993. Sequence, tissue distribution, and functional characterization of the rat fructose transporter Glut5. Am. J. Physiol. 264: G1169-G1176.
5. Darakhshan, F., et al. 1998. Biochemical and functional characterization of the Glut5 fructose transporter in rat skeletal muscle. Biochem. J. 336: 361-366.
6. Doege, H., et al. 2000. Glut8, a novel member of the sugar transport facilitator family with glucose transport activity. J. Biol. Chem. 275: 16275-16280.

CHROMOSOMAL LOCATION

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

SOURCE

Glut5 (H-200) is a rabbit polyclonal antibody raised against amino acids 221-420 mapping within an internal region of Glut5 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

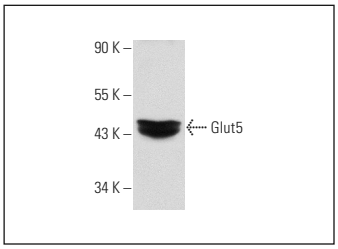
Glut5 (H-200) is recommended for detection of Glut5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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: MCF7 whole cell lysate: sc-2206 or mouse kidney extract: sc-2255.

DATA



Glut5 (H-200): sc-30109. Western blot analysis of Glut5 expression in MCF7 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Inoue, Y., et al. 2010. Efficient production of recombinant IgG by metabolic control and co-expression with GLUT5 in a fructose-based medium. Cytotechnology 62: 301-306.

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.