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Glut5 (h2): 293T Lysate: sc-173727

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 1p36.2.

PRODUCT

Glut5 (h2): 293T Lysate represents a lysate of human Glut5 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

Glut5 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Glut5 antibodies. Recommended use: 10-20 µl per lane.

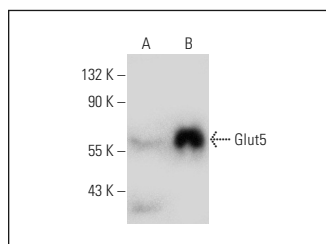
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Glut5 (E-2): sc-271055 is recommended as a positive control antibody for Western Blot analysis of enhanced human Glut5 expression in Glut5 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Glut5 (E-2): sc-271055. Western blot analysis of Glut5 expression in non-transfected: sc-117752 (A) and human Glut5 transfected: sc-173727 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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