

# Glut3 (E-15): sc-31840

## 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 beta cells, hepatocytes and basolateral membranes of intestinal and epithelial cells, while the highest expression of Glut3 has been found in neuronal tissue.

## REFERENCES

1. Mueckler, M. 1994. Facilitative glucose transporters. *Eur. J. Biochem.* 219: 713-725.
2. McCall, A.L., Moholt-Siebert, M., VanBueren, A., Cherry, N.J., Lessov, N., Tiffany, N., Thompson, M., Downes, H. and Woodward, W.R. 1995. Progressive hippocampal loss of immunoreactive Glut3, the neuron-specific glucose transporter, after global forebrain ischemia in the rat. *Brain Res.* 670: 29-38.
3. Livingstone, C., Lyall, H. and Gould, G.W. 1995. Hypothalamic Glut 4 expression: a glucose- and Insulin-sensing mechanism? *Mol. Cell. Endocrinol.* 107: 67-70.
4. Kandror, K.V., Stephens, J.M. and Pilch, P.F. 1995. Expression and compartmentalization of caveolin in adipose cells: coordinate regulation with and structural segregation from Glut4. *J. Cell Biol.* 129: 999-1006.
5. Marsh, B.J., Alm, R.A., McIntosh, S.R. and James, D.E. 1995. Molecular regulation of Glut-4 targeting in 3T3-L1 adipocytes. *J. Cell Biol.* 130: 1081-1091.
6. Hajdich, E., Hainault, I., Meunier, C., Jardel, C., Hainque, B., Guerre-Millo, M. and Lavau, M. 1995. Regulation of glucose transporters in cultured rat adipocytes: synergistic effect of Insulin and dexamethasone on Glut4 gene expression through promoter activation. *Endocrinol.* 136: 4782-4789.
7. Thorens, B. 1996. Glucose transporters in the regulation of intestinal, renal and liver glucose fluxes. *Am. J. Physiol.* 270: G541-G543.

## CHROMOSOMAL LOCATION

Genetic locus: Slc2a3 (mouse) mapping to 6 F2.

## SOURCE

Glut3 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of Glut3 of mouse origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31840 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Glut3 (E-15) is recommended for detection of Glut3 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 (m): sc-41219, Glut3 siRNA (r): sc-270174, Glut3 shRNA Plasmid (m): sc-41219-SH, Glut3 shRNA Plasmid (r): sc-270174-SH, 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: rat testis extract: sc-2400 or rat brain extract: sc-2392.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Glut3 (G-5): sc-74399** or **Glut3 (B-6): sc-74497**, our highly recommended monoclonal alternatives to Glut3 (E-15). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Glut3 (G-5): sc-74399**.