

# Glut4 (N-20): sc-1606

## 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. 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. Glut1 and Glut4 are 12-pass transmembrane proteins (12TM) whose carboxy-termini may dictate their cellular localization. Aberrant Glut4 expression has been suggested to contribute to such maladies as obesity and diabetes. Glut4 null mice have shown that while functional Glut4 protein is not required for maintaining normal glucose levels, it is necessary for sustained growth, normal cellular glucose, fat metabolism and prolonged longevity.

## CHROMOSOMAL LOCATION

Genetic locus: SLC2A4 (human) mapping to 17p13.1; Slc2a4 (mouse) mapping to 11 B3.

## SOURCE

Glut4 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of Glut4 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.

Blocking peptide available for competition studies, sc-1606 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Glut4 (N-20) is recommended for detection of Glut4 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).

Glut4 (N-20) is also recommended for detection of Glut4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Glut4 siRNA (h): sc-41220, Glut4 siRNA (m): sc-41221, Glut4 siRNA (r): sc-270138, Glut4 shRNA Plasmid (h): sc-41220-SH, Glut4 shRNA Plasmid (m): sc-41221-SH, Glut4 shRNA Plasmid (r): sc-270138-SH, Glut4 shRNA (h) Lentiviral Particles: sc-41220-V, Glut4 shRNA (m) Lentiviral Particles: sc-41221-V and Glut4 shRNA (r) Lentiviral Particles: sc-270138-V.

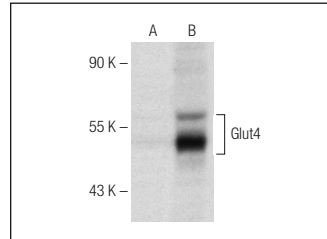
Molecular Weight of Glut4: 50-63 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243 or mouse skeletal muscle extract: sc-364250.

## STORAGE

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

## DATA



Glut4 (N-20): sc-1606. Western blot analysis of Glut4 expression in non-transfected (A) and human Glut4 transfected (B) HEK293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Lee, J.S., et al. 2002. Interaction of exercise and diet on Glut4 protein and gene expression in type I and type II rat skeletal muscle. *Acta Physiol. Scand.* 175: 37-44.
- Yamamoto, D.L., et al. 2008. Myotube formation on micro-patterned glass: intracellular organization and protein distribution in C2C12 skeletal muscle cells. *J. Histochem. Cytochem.* 56: 881-892.
- Fulcher, F.K., et al. 2008. Dual role for myosin II in Glut4-mediated glucose uptake in 3T3-L1 adipocytes. *Exp. Cell Res.* 314: 3264-3274.
- Hyyti, O.M., et al. 2010. Aging impairs myocardial fatty acid and ketone oxidation and modifies cardiac functional and metabolic responses to Insulin in mice. *Am. J. Physiol. Heart Circ. Physiol.* 299: H868-H875.
- Qu, W., et al. 2011. Biphasic effects of chronic ethanol exposure on Insulin-stimulated glucose uptake in primary cultured rat skeletal muscle cells: role of the Akt pathway and GLUT4. *Diabetes Metab. Res. Rev.* 27: 47-53.
- Sugita, S., et al. 2011. Increased systemic glucose tolerance with increased muscle glucose uptake in transgenic mice overexpressing RXR $\gamma$  in skeletal muscle. *PLoS ONE* 6: e20467.
- Long, N.M., et al. 2012. Maternal obesity upregulates fatty acid and glucose transporters and increases expression of enzymes mediating fatty acid biosynthesis in fetal adipose tissue depots. *J. Anim. Sci.* 90: 2201-2210.

## RESEARCH USE

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


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