SANTA CRUZ BIOTECHNOLOGY, INC.

Glut4 (H-61): sc-7938

The Power to Question

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 (H-61) is a rabbit polyclonal antibody raised against amino acids 230-290 mapping cytoplasmic 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.

APPLICATIONS

Glut4 (H-61) 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 (H-61) 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.

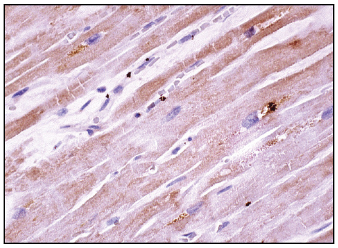
STORAGE

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.

DATA



Glut4 (H-61): sc-7938. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Khurana, A., et al. 2003. p38 MAPK interacts with actin and modulates filament assembly during skeletal muscle differentiation. Differentiation 71: 42-50.
2. Tepavcevic, S., et al. 2011. Interaction between Insulin and estradiol in regulation of cardiac glucose and free fatty acid transporters. Horm. Metab. Res. 43: 524-530.
3. Zakula, Z., et al. 2011. Impairment of cardiac Insulin signaling in fructose-fed ovariectomized female Wistar rats. Eur. J. Nutr. 50: 543-551.
4. Schenk, S., et al. 2011. Sirt1 enhances skeletal muscle Insulin sensitivity in mice during caloric restriction. J. Clin. Invest. 121: 4281-4288.
5. Philp, A., et al. 2011. The PGC-1α-related coactivator promotes mitochondrial and myogenic adaptations in C2C12 myotubes. Am. J. Physiol. Regul. Integr. Comp. Physiol. 301: R864-R872.
6. Soares, V.M., et al. 2012. Early life overfeeding decreases acylated ghrelin circulating levels and upregulates GHSR1a signaling pathway in white adipose tissue of obese young mice. Regul. Pept. 174: 6-11.
7. Amengual-Cladera, E., et al. 2012. Sex differences in the effect of high-fat diet feeding on rat white adipose tissue mitochondrial function and Insulin sensitivity. Metabolism 61: 1108-1117.
8. Amengual-Cladera, E., et al. 2012. High-fat diet feeding induces a depot-dependent response on the pro-inflammatory state and mitochondrial function of gonadal white adipose tissue. Br. J. Nutr. 1: 1-12.