

# Glut12 (S-12): sc-161659

## BACKGROUND

Glucose serves as the major energy substrate of mammalian cells and is fundamental to metabolism. Glucose passage across cell membranes is mediated by a family of transporters termed glucose transporters, or Gluts, which are characterized by the presence of 12 membrane-spanning helices. The Glut family is divided into three subfamilies: class I (previously known as glucose transporters), which includes Glut1, Glut2, Glut3 and Glut4; class II (previously known as fructose transporters), which includes Glut5, Glut7, Glut9 and Glut11; and class III, which includes Glut6, Glut8, Glut10, Glut12 and the myo-inositol transporter HMIT1. Glut12 (glucose transporter type 12), also known as SLC2A12 (solute carrier family 2, facilitated glucose transporter member 12) or Glut8, is a 617 amino acid multi-pass membrane protein and facilitative glucose transporter expressed in heart, prostate and skeletal muscle.

## REFERENCES

1. Joost, H.G. and Thorens, B. 2001. The extended GLUT-family of sugar/polyol transport facilitators: nomenclature, sequence characteristics, and potential function of its novel members. *Mol. Membr. Biol.* 18: 247-256.
2. Rogers, S., Macheda, M.L., Docherty, S.E., Carty, M.D., Henderson, M.A., Soeller, W.C., Gibbs, E.M., James, D.E. and Best, J.D. 2002. Identification of a novel glucose transporter-like protein-Glut12. *Am. J. Physiol. Endocrinol. Metab.* 282: E733-E738.
3. Wood, I.S., Hunter, L. and Trayhurn, P. 2003. Expression of Class III facilitative glucose transporter genes (Glut10 and Glut12) in mouse and human adipose tissues. *Biochem. Biophys. Res. Commun.* 308: 43-49.
4. Rogers, S., Chandler, J.D., Clarke, A.L., Petrou, S. and Best, J.D. 2003. Glucose transporter Glut12-functional characterization in *Xenopus laevis* oocytes. *Biochem. Biophys. Res. Commun.* 308: 422-426.
5. Stuart, C.A., Yin, D., Howell, M.E., Dykes, R.J., Laffan, J.J. and Ferrando, A.A. 2006. Hexose transporter mRNAs for Glut4, Glut5, and Glut12 predominate in human muscle. *Am. J. Physiol. Endocrinol. Metab.* 291: E1067-E1073.
6. Linden, K.C., DeHaan, C.L., Zhang, Y., Glowacka, S., Cox, A.J., Kelly, D.J. and Rogers, S. 2006. Renal expression and localization of the facilitative glucose transporters Glut1 and Glut12 in animal models of hypertension and diabetic nephropathy. *Am. J. Physiol. Renal Physiol.* 290: F205-F213.
7. Vieira, A.R., McHenry, T.G., Daack-Hirsch, S., Murray, J.C. and Marazita, M.L. 2008. Candidate gene/loci studies in cleft lip/palate and dental anomalies finds novel susceptibility genes for clefts. *Genet. Med.* 10: 668-674.

## CHROMOSOMAL LOCATION

Genetic locus: SLC2A12 (human) mapping to 6q23.2; Slc2a12 (mouse) mapping to 10 A3.

## SOURCE

Glut12 (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of Glut12 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-161659 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Glut12 (S-12) is recommended for detection of Glut12 of mouse, rat and human 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); non cross-reactive with other Glut family members.

Glut12 (S-12) is also recommended for detection of Glut12 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Glut12 siRNA (h): sc-95092, Glut12 siRNA (m): sc-145449, Glut12 shRNA Plasmid (h): sc-95092-SH, Glut12 shRNA Plasmid (m): sc-145449-SH, Glut12 shRNA (h) Lentiviral Particles: sc-95092-V and Glut12 shRNA (m) Lentiviral Particles: sc-145449-V.

Molecular Weight of Glut12: 60 kDa.

## 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.