

Product Specification Sheet

Mouse Monoclonal Anti-Rat Glut-4

Cat. # GT43-M

Mouse monoclonal anti-Rat Glut-4 IgG #3

SIZE: 100 ug

Most mammalian cells transport glucose through a family of membrane proteins known as glucose transporters. Molecular cloning of these glucose transporters has identified a family of closely related genes that encodes at least 7 proteins (**Glut-1 to Glut-13**, Mol. Wt. 40-80 kDa) and Sodium glucose co-transporter-1 (SGLT-1, 662 amino acids; ~75 kDa). Individual member of this family have identical predicted secondary structures with 12 transmembrane domains. Both N and C-termini are predicted to be cytoplasmic. Most differences in sequence homology exist within the four hydrophilic domains that may play a role in tissue-specific targeting. Glut isoforms differ in their tissue expression, substrate specificity and kinetic characteristics. **Glut-1** mediates glucose transport into red cells, and throughout the blood brain barrier, and supply glucose to most cells. **Glut-2** provides glucose to the liver and pancreatic cells. **Glut-3** is the main transporter in neurons, whereas **Glut-4** (mouse/human 509-aa) is primarily expressed in muscle and adipose tissue and regulated by insulin.

FUNCTION: Insulin-regulated facilitative glucose transporter.
SUBCELLULAR LOCATION: Intracytoplasmic membrane; Multi-pass membrane protein (By similarity). Cytoplasm, perinuclear region (By similarity). Note=Localizes primarily to the perinuclear region, undergoing continued recycling to the plasma membrane where it is rapidly reinternalized. The dileucine internalization motif is critical for intracellular sequestration (By similarity).
TISSUE SPECIFICITY: Skeletal and cardiac muscles; brown and white fat.
DISEASE: Defects in Slc2a4 may be the cause of certain post-receptor defects in non-insulin-dependent diabetes mellitus (NIDDM).; **MISCELLANEOUS:** Insulin-stimulated phosphorylation of TBC1D4 is required for GLUT4 translocation.
SIMILARITY: Belongs to the major facilitator superfamily. Sugar transporter (TC 2.A.1.1) family. Glucose transporter subfamily Protein name Solute carrier family 2, facilitated glucose transporter member 4; Synonyms Glucose transporter type 4, insulin-responsive; GLUT-4 ,Glut4; GT2; Gene name : Slc2a4

Source of Antigen and Antibodies

Antigen	Recombinant Rat glut-4 protein; Epitope location ~, Cytoplasmic domain
Ab Host/type	Mouse monoclonal, IgG1 Protein A/G pure (cat #GT43-M)
2-ab	Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)
-ve control IgG	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/135ul solution lyophilized powder

Buffer: PBS, pH 7.5; no preservative

Reconstitute powder in PBS at 1 mg/ml

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

Western Blotting (1-5 ug/ml of affinity pure IgG using Chemiluminescence technique). It is recommended not to heat the samples prior to loading to prevent gluts aggregation. Load ~50-100 ug total membrane proteins/lane.

Histochemistry: We recommend the use of affinity purified antibody at 5-20 ug/ml in 4% Para formaldehyde, 0.15% picric acid for 20 min, and then permeabilized with 0.1% Triton X-100. See published refs 2.

Flow cytometry: recommended conc is ~10 ug antibody per ml (1 million cells). Perform the antibody binding in small volume of ~200 ul.

Antibody concentration must be optimized for each application under defined experimental conditions.

Specificity & Cross-reactivity

GT43-M antibody cross-reacts with glut-4 from human, monkey, mouse, rabbit, and chicken but not dog. Other species not tested. We also supply other polyclonal antibodies made to the mouse, rat, and human glut-4 (see the web site for a complete listing).

General References:1 Hernandez R et al (2003) Biochem J, 10.1042/BJ20030325, Niu W et al (2003) JBC, 10, 1074/jbc James et al. (1989) Nature 338, 83-86; (1989) PNAS 86, 8368-8372; see reviews by Baldwin, SA (1993) Biochem. Biophys. Acta 1154, 17-49; Mueckler, M (1994) Eur. J. Biochem. 219, 713-725.

Citations of for Glut-4 (see updated list at the web site)

Fueger PT, 2004, J. Biol. Chem., 279, 50956 - 50961, WB,
Greenberg CC, 2006, Mol. Cell. Biol., 26: 334 - 342, WB,,
Inoue M, 2006, Mol. Biol. Cell, 17: 2303 - 2311, WB, IF
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Grover-McKay M, 1999, BBA 1416, 145-154, WB,,
Tong H, 2000, J. Biol. Chem. 275: 11981-11986, WB,
garcia MDLA, 2003, J. Neurochem., 86: 709 - 724., WB?,

*This product is for In vitro research use only.

Related material available from ADI

Antibodies for Glut 1-11 & SGLT-1/-6

GT43-M 70911A

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