

Product Specification Sheet

**Glucose Transporter 4 (Glut-4) Antibodies**

<input type="checkbox"/> Cat. # GT41-P	Mouse Glut-4 Control/blocking Peptide	<b>SIZE:</b> 100 ug
<input type="checkbox"/> Cat. # GT41-A	Rabbit Anti-Mouse Glut-4 IgG (Aff pure)	<b>SIZE:</b> 100 ug
<input type="checkbox"/> Cat. # GT41-S	Rabbit Anti-Mouse Glut-4 (Antiserum)	<b>SIZE:</b> 100 ul

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**

<b>Antigen</b>	12-aa peptide from Mouse <b>Glut-4</b> (protein accession # #P14142) <b>Designation (GT41-P, control peptide)</b> conjugated to KLH; <b>Epitope location</b> ~ C-terminal, Cytoplasmic domain
<b>Ab Host/type</b>	Rabbit, Polyclonal; Unpurified antiserum (cat #GT41-S) Aff pure IgG (cat # <b>GT41-A</b> )
<b>2-ab</b>	Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

**Form & Storage of Antibodies/Peptide Control**

**Antiserum (unpurified)**  
 100ul       solution       lyophilized powder

Supplied in Buffer: 0.05% azide  
**Reconstitute** powder in 100 ul PBS

**Affinity pure IgG**  
 100 ug/100ul     solution       lyophilized powder  
 Supplied in **Buffer:** PBS+0.1% BSA  
**Reconstitute powder** in PBS at 1mg/ml

**Control/blocking peptide**  
 100 ug/100 ul     solution       lyophilized powder  
 Supplied in **Buffer:** PBS pH 7.5,  
**Reconstitute powder in PBS at 1 mg/ml.**

**Storage**  
**Short-term:** unopened, undiluted liquid vials at -200C and powder at 4oC or -20oC..  
**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.

**Recommended Usage**

**Western Blotting** (1:1K-5K for antiserum and 1-10 ug/ml for affinity pure IgG using Chemiluminescence technique). We do not recommend heating or samples to minimize aggregation. see refs 2.

**ELISA:** Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:1-10K).

**Histochemistry:** We recommend the use of affinity purified antibody at 2-10 ug/ml. See published refs 2.

**Specificity & Cross-reactivity**

Mouse GT41-P peptide sequence is 100% conserved in rat, human, ovine, and pig Glut-4, 91% in bovine. It has no significant sequence homology with other gluts. Antibody cross-reactivity in various species is not known. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity.

**General References:** 1. 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;

**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  
 Renstrom F, 2007, Metabolism, 56, 190-198, WB,  
 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.

GT41-S-A-P      70911A