

Product Specification Sheet

Glucose Transporter 1 (Glut-1) Antibodies

Cat. # GT12-P	Human Glut-1 Control/blocking Peptide	SIZE: 100 ug
Cat. # GT12-A	Rabbit Anti-Human Glut-1 IgG (affinity pure)	SIZE: 100 ug
Cat. # GT12-S	Rabbit Anti-Human Glut-1 (affinity pure)	SIZE: 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.

FUNCTION: Facilitative glucose transporter. This isoform may be responsible for constitutive or basal glucose uptake. Has a very broad substrate specificity; can transport a wide range of aldoses including both pentoses and hexoses.

SUBCELLULAR LOCATION: Cell membrane; Multi-pass membrane protein (By similarity). Melanosome (By similarity). Note=Localizes primarily at the cell surface

PTM: Phosphorylated upon DNA damage, probably by ATM or ATR

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 1 ; Synonyms Glucose transporter type 1, erythrocyte/brain; GLUT-1, GT1, Glut1, Gene name : Slc2a1

Source of Antigen and Antibodies

Antigen	13-aa peptide from Human Glut-1 (protein accession #P11166, refs 1; Designation (GT12-P, control/blocking peptide) conjugated to KLH; Epitope location~ C-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (GT12-S) and IgG, purified over antigen-agarose (Cat # GT12-A) supplied in PBS+0.1% BSA+0.05% azide
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	# 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.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for antiserum and 1-10 ug/ml for affinity pure IgG using ECL. (see citation in refs 4)

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry: not tested. We recommend the use of affinity purified antibody at 2-10 ug/ml (see citation in refs 4)

Specificity & Cross-reactivity

Human GT12-P peptide is 100% conserved in Pig, bovine, rabbit, mouse, and rat, and 75% with chicken Glut-1. Antibodies made to this region have detected Glut-1 from human (RBC) and rabbit brain and mouse 3T3 L1 fibroblasts and rat brain adipocytes. 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. Mueckler, M et al (1985) Science 229, 941-945; Haspel et al., (1986) JBC 263, 398; Birnbaum, et al., (1986) 83, 5784. 2. Piper et al., (1991) Am. J. Physiol. 260, C570. 3. Harris et al. (1992) PNAS. 89, 7556.

(4) Citations of ADI's Glut-1 (see updated at the web site)

Mikhail K2004 Nature Cell Biology 6, 642 – 647, WB
Choeiri C 2005 Neuroscience, 130, 591-600 WB
Tong, Haiyan, 2000 JBC 2000 275: 11981-11986 wB
Choeiri C, 2002 Neuroscience 111, 19-34, IHC,
Gnudi L 2003 Hypertension. 42:19-24, WB IHC
Gunaratnam L, 2003 J. Biol. Chem., 278: 44966 - 44974 WB
Hansen WJ, 2002 Mol. Cell. Biol. 22: 1947-1960 WB,

*This product is for In vitro research use only.

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