

Product Specification Sheet

Glucose Transporter 1 (Glut-1) Antibodies

Cat. # GT13-P	Human Glut-1 Control/blocking Peptide	SIZE: 100 ug
Cat. # GT13-S	Rabbit Anti-Human Glut-1 antiserum	SIZE: 100 ul
Cat. # GT13-A	Rabbit Anti-Human Glut-1 IgG (affinity pure)	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.

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	15-aa peptide Human Glut-1 protein accession #P11166, refs 1; Designation (GT13-P, control peptide) conjugated to KLH; Epitope location ~ C-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#GT13-S) and IgG, purified over antigen-agarose (Cat # GT13-A)
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.

Recommended Usage

Western Blotting (1:1K-5K for antiserum and 1-10 ug/ml for affinity pure IgG). (see published papers 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: We recommend the use of affinity purified antibody at 2-10 ug/ml. (see published papers refs 4)

Specificity & Cross-reactivity

The human GT13 peptide is 100% conserved in pig, bovine, rabbit, mouse, and rat. Antibody crossreactivity in various species is not experimentally confirmed. 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 (see detailed protocol at: www.4adi.com/data/abblock.html).

General References: 1. Mueckler, M (1985) Science 229, 941-945; Haspel (1986) J. Biol. Chem. 263, 398-403; Birnbaum, (1986) 83, 5784-5788. . Piper (1991) Am. J. Physiol. 260, C570-C580; Harris . (1992) Proc. Natl. Acad. Sci. 89, 7556-7560.;

2) Citations of ADI's antibodies for Glut-1

Choeiri C, 2005, Neuroscience, 130, 591-600, WB,
Majumder PK, 2004, Nature Medicine10, 594 - 601, WB,
Mekhail K, 2004, Nature Cell Biology 6, 642 - 647, WB,
Bindra RJ, 2004, Mol. Cell. Biol., Oct 2004; 24: 8504 - 8518, WB,,
Lewis MD, 2004, Oncogene23, 2315 - 2323, WB,
Gnudi L, 2003, Hypertension. 42(1):19-24, WB, IHC
Gunaratnam L, 2003, J. Biol. Chem., 278: 44966 - 44974, WB,
Greenberg CC, 2003, J. Biol. Chem.,278: 30835 - 30842., WB,,
Hansen WJ eat al, 2002, Mol. Cell. Biol. 22: 1947-1960, WB,,
Kondo K , 2002, Cancer Cell 1, 237-246, WB,
Bindra RJ, 2002, Cancer Res. 62: 3014 - 3019, WB,,
Tong, Haiyan, 2000, J. Biol. Chem. 2000 275: 11981-11986, w,
Cockman, M E , 2000, J. Biol. Chem. 275: 25733-25741, WB,,
Schoenfeld, Alan, 1998, PNAS 95: 8817-8822, WB,,

*This product is for In vitro research use only.

Antibodies for Glut 1-13 & SGLT-1/2

GT13-S-A-P 70911A

India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi - 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com