

## Product Specification Sheet

### Glut-3 Antibodies

Cat. # GT33-P	<b>Human</b> Glut-3 control peptide # 1	<b>SIZE:</b> 100 ug
Cat. # GT33-A	<b>Rabbit</b> Anti-Human Glut-3 IgG # 1 (aff pure)	<b>SIZE:</b> 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-3** (human 496-aa), mouse 493-aa) is the main transporter in neurons, whereas **Glut-4** is primarily expressed in muscle and adipose tissue and regulated by insulin.

**FUNCTION:** Facilitative glucose transporter. Probably a neuronal glucose transporter.

**SUBCELLULAR LOCATION:** Multi-pass membrane protein.

**TISSUE SPECIFICITY:** Highly expressed in brain.

**SIMILARITY:** Belongs to the major facilitator superfamily. Sugar transporter (TC 2.A.1.1) family. Glucose transporter subfamily [view classification]. Protein name Solute carrier family 2, facilitated glucose transporter member 3

Synonyms Glucose transporter type 3, brain, GLUT-3, Glut3

Gene name Slc2a3

#### Source of Antigen and Antibodies

<b>Antigen</b>	13-aa peptide from <b>Human GT-3</b> ; (Gene Accession #P11169) <b>Designation (GT33-P, control peptide)</b> conjugated to KLH; epitope location ~ N-terminus, Extracellular domain
<b>Ab Host/type</b>	Rabbit, Polyclonal; Aff pure IgG ( <b>cat # GT33-A</b> )
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> 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

##### 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** (1-10 ug/ml for affinity pure antibody using ECL technique). See published refs 2.

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

**Histochemistry & Immunofluorescence:** We recommend the use of aff pure IgG at 2-20 ug/ml. See published refs 2.

#### Specificity & Cross-reactivity

The GT33-P control peptide is 100% identical in human GT3 (brain and skeletal muscle), and 92% with GT14 (duplicon of GT3) short and long form. No significant homology is detected with other species. 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. Kayano, T., et al (1988) J. Biol. Chem. 263, 15245-15248; Gould et al., (1992) Diabetologia 35, 304-309; Nagamatsu et al., (1992) J. Biol. Chem. 267, 467-472; Brant et al, (1992) Biochem. Soc. Trans. 20, 235S-236S-403; see reviews by Baldwin, SA (1993) Biochim. Biophys. Acta 1154, 17-49; Mueckler, M (1994) Eur. J. Biochem. 219, 713-725.

#### (2) Citations of ADI's Antibodies (see web site for updated list)

Fattoretti, P, 2002, Ann. N.Y. Acad. Sci., 973: 293 - 296, , IHC, Merriman-Smith BR, 2003, Invest. Ophthalmol. Vis. Sci., 44: 3458  
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Cheng CM et al, 2001, FASEB J 15: 907-915, WB,, IHC,  
Choeiri C et al, 2002, Neuroscience 111, 19-34, , IHC,  
Grover-McKay, M et al, 1999, BBA 1416, 145-154, WB,,  
Stuart CA, 2000, AJPEM 2000 279: 855E-861E, WB,, IHC,  
Garcia MDL, 2003, J Neurochem. 86, 709-724, , IHC  
venge P, 2003, Respiratory Medicine 97, 1109-1119, ,  
Medina RA, 2003, Endocrinology, 144: 4527 - 4535, WB,, IHC  
Shikhman AR, 2004, AJP Endocrinol Metab, 286: 980, WB,  
Gaster M, 2002, Eur J. Physiol. Sept 445, 105-114, , IHC  
Shikhman AR, 2001, J Immunol. 167, 7001-7008, WB,

\*This product is for In vitro research use only.

#### Related material available from ADI

Antibodies and Peptides: Glucose transport family (GT 1-13).

GT33-A-P

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#### 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](mailto:customerservice@lifetechindia.com) Website: [www.lifetechindia.com](http://www.lifetechindia.com)