

Product Specification Sheet

Glucose Transporter 5 (Glut-5) Antibodies

Cat. # GT51-P	Rat Glut-5 Control/blocking Peptide	SIZE: 100 ug
Cat. # GT51-A	Rabbit Anti-Rat Glut-5 IgG (affinity pure)	SIZE: 100 ug
Cat. # GT51-S	Rabbit Anti-Rat Glut-5 (antiserum)	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. **Glut-2** provides glucose to the liver and pancreatic cells. **Glut-3** is the main transporter in neurons, whereas **Glut-4** is primarily expressed in muscle and adipose tissue and regulated by insulin. **Glut-5** transports fructose in intestine and testis. **Glut-6** is a pseudogene and unlikely to be expressed at the protein level. **Glut-7**, expressed in liver and other gluconeogenic tissues, mediates glucose flux across endoplasmic reticulum membrane. **Glut-8** is found in adult testis and placenta. Human **Glut-9** is expressed in spleen, peripheral leucocytes and brain. Human **Glut-10** (541 aa, chromosome 20q13.1; ~30-35% homology with Glut-3 and Glut-8) has been identified as a candidate gene for NIDDM susceptibility. It is widely expressed with highest levels in liver and pancreas. **Glut-11** (496 aa, chromosome 22q11.2; ~41% identity with Glut-5) is expressed in heart and skeletal muscle. **Glut-12** (human 617 aa, monkey 621 aa; ~50 kDa; ~30% homology with Glut-4 and 40% with Glut-10) is expressed in skeletal muscle, adipose tissue, and small intestine.

Source of Antigen and Antibodies

Antigen	13-aa peptide from Rat (Gene Accession #P43427) GT5; Designation (GT51-P, control peptide) conjugated to KLH
Location	~C-terminus, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal; Unpurified antiserum (cat # GT51-S) Aff pure IgG (cat # GT51-A)
2-ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	# 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 Chemiluminescence technique). Rat Glut-5 is ~ 60 kDa in rat jejunum membranes (2) that is slightly larger than that reported for human Glut 5 (50-55 kDa) (3). As opposed to human tissues, rat Glut-5 mRNA has not been detected in rat testis, adipose tissues, and skeletal muscle (2, 4). In rat kidney, a protein of about 42 kDa was detected (5).

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.

Specificity & Cross-reactivity

Rat GT51-P peptide sequence is ~ 61% homology with human and 53% in mouse Glut-5. For human Glut-5, we suggest cat # GT52-S that are made to a peptide from human Glut5. GT51-P 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 (see detailed protocol at: www.4adi.com/data/abblock.html)

*This product is for In vitro research use only.

Antibodies for Glut 1-12 & SGLT-1-6

GT51 S-A-P

Rev. 40128S

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