

## Glucose Transporter 2 (Glut-2) Antibodies

Cat. # GT21-P	Rat Glut-2 Control/blocking Peptide	<b>SIZE:</b> 100 ug
Cat. # GT21-A	Rabbit Anti-Rat Glut-2 IgG (affinity pure)	<b>SIZE:</b> 100 ug
Cat. # GT21-S	Rabbit Anti-Rat Glut-2 (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.

Human Glut-2 (GTR2, 524 aa, chromosome 3q26.1-q26.3, ~55-60 kDa) belongs to the family of solute carrier family 2, member 2 or Slc2a2 or facilitative glucose transporter. Glut-2 likely mediates the bidirectional transfer of glucose across the plasma membrane  
**FUNCTION:** Facilitative glucose transporter. This isoform likely mediates the bidirectional transfer of glucose across the plasma membrane of hepatocytes and is responsible for uptake of glucose by the beta cells; may comprise part of the glucose-sensing mechanism of the beta cell. May also participate with the Na(+)/glucose cotransporter in the transcellular transport of glucose in the small intestine and kidney.

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

**TISSUE SPECIFICITY:** Present in liver, intestine, kidney and beta-pancreatic islet cells.

**PTM:** N-glycosylated; required for stability and retention at the cell surface of pancreatic beta cells (By similarity).

**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 2; Glucose transporter type 2, liver; GLUT-2 ; Glut-2, Glut2  
 Gene name : Slc2a2

### Source of Antigen and Antibodies

<b>Antigen</b>	16-aa peptide from <b>Rat Glut-2</b> ; (protein accession #P12336) <b>Designation (GT21-P, control peptide /blocking peptide) conjugated to KLH; Epitope location~ C-terminal, Cytoplasmic domain</b>
<b>Ab Host/type</b>	Rabbit, Polyclonal unpurified antiserum (#GT21-S) and IgG, purified over antigen-agarose (Cat # GT21-A)
<b>2-Ab</b>	Cat # 20320, <b>goat anti-rabbit IgG-HRP</b> (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). see refs 2.

**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 refs 2.

### Specificity & Cross-reactivity

Rat GT21 sequence has 93% identity with mouse, human and 84% in ovine Glut-2. Antibody crossreactivity in various other species is not established. 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. Thorens, B, et al (1988) Cell, 55, 281-290; 2. Asano, T et al (1989) Nucleic Acid Res. 17, 6386; Suzue, K., et al (1989) Nucleic Acid Res. 17, 10099.

**Citations of for Glut-2** (see updated list at the web site)

Lee S-H 2003, J. Histochem. Cytochem., 51: 1005-1015, IHC  
 Osswald C, 2005, Mol. Cell. Biol., 25: 78 – 87, WB,  
 Harrison, KA, 1999, Nature Genetics 23, 71 – 75, IF  
 Gorogawa S-I, 2004, BBRC 319, 1159-1170, WB,  
 Brissova M, K, 2002, JBC 277, 11225-11232, WB, IHC,  
 Hori Y, 2002, PNAS, Dec 2002; 99: 16105 - 16110WB, IHC,  
 Rutjes, N 2002, Kidney International 62, 832, IHC  
 Sumazaki R, 2004, Nature Genetics 36, 83 - 87 IHC  
 Rodriguez SM, 2004 J Anim Sci, 82: 3015 - 3023. WB  
 \*This product is for In vitro research use only.

### Related material available from ADI

Antibodies for Glut 1-13 & SGLT-1/2  
 GT2-S-A-P 70911A