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Datasheet for 600-401-GN3S

# Glut2 Antibody

## Overview

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| **Description:** | Anti-Glut2 (RABBIT) Antibody - 600-401-GN3S |
| **Item No.:** | 600-401-GN3S |
| **Size:** | 25 µL |
| **Applications:** | ELISA, IF, IHC, WB |
| **Reactivity:** | Human, Mouse |
| **Host Species:** | Rabbit |

## Product Details

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| **Background:** | The Anti-Glut2 antibody was designed, produced, and validated as part of the Joy Cappel Young Investigator Award (JCYIA). The glucose transporter GLUT2 is a transmembrane carrier protein that allows protein facilitated glucose movement across cell membranes. GLUT2 is expressed in the plasma membranes of the liver, intestine, renal tubular cells, pancreatic islet beta cells, as well as in the portal and hypothalamic areas. Due to its low affinity and high capacity, GLUT2 transports dietary sugars, glucose, galactose and fructose in high concentrations, displaying large bidirectional fluxes in and out of cells. In pancreatic beta cells, GLUT2 is essential for glucose-stimulated insulin secretion. GLUT2 expression is necessary for the physiological control of glucose-sensitive genes, and its inactivation in the liver leads to impaired glucose-stimulated insulin secretion. In the nervous system, GLUT2-dependent glucose sensing regulates feeding, thermoregulation and pancreatic islet cell mass and function, as well as sympathetic and parasympathetic activities. In humans, inactivating mutations in GLUT2 cause Fanconi–Bickel syndrome, which is characterized by hepatomegaly and kidney disease. Anti-Glut2 is ideal for researchers interested in studying glucose transport mediated by Glut2 protein in the fields of diabetes, obesity, metabolism, and neuroscience research. |
| **Synonyms:** | rabbit anti-Glut2 antibody, Solute carrier family 2 facilitated glucose transporter member 2, Glucose transporter type 2 liver, GLUT-2 antibody, Slc2a2, Glut 2 Antibody |
| **Host Species:** | Rabbit |
| **Clonality:** | Polyclonal |
| **Format:** | IgG |

## Target Details

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| **Gene Name:** | Slc2a2 |
| **Reactivity:** | Human, Mouse |
| **Immunogen Type:** | Conjugated Peptide |
| **Immunogen:** | This affinity-purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to the C-terminal domain of mouse Glut2 protein. |
| **Purity/Specificity:** | This affinity-purified Glut-2 antibody is directed against Glut2 protein. The product was affinity purified from monospecific antiserum by immunoaffinity purification. A BLAST analysis was used to suggest cross-reactivity with Glut2 from mouse and rat based on a 100% homology with the immunizing sequence. Reactivity against homologues from other sources is not known. |
| **Relevant Links:** | • UniProtKB - P14246<br>• NCBI - NP_112474.2<br>• GeneID - 20526 |

## Application Details

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| **Tested Applications:** | ELISA, IF, IHC, WB |
| **Application Note:** | Anti-Glut-2 antibody has been tested for use in ELISA, immunohistochemistry, immunofluorescence, and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 57.1 kDa in size corresponding to Glut2 protein by western blotting in the appropriate stimulated tissue or cell lysate or extract. |
| **Assay Dilutions:** | All assays should be optimized by the user. Recommended dilutions (if any) may be listed below. |
| **ELISA:** | 1:30,000-1:90:000 |
| **IHC:** | 4µg/mL |
| **WB:** | 1:500-1:1000 |

## Formulation

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| **Physical State:** | Liquid (sterile filtered) |
| **Concentration:** | 1.0 mg/mL by UV absorbance at 280 nm |
| **Buffer:** | 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2 |
| **Preservative:** | 0.01% (w/v) Sodium Azide |
| **Stabilizer:** | None |

## Shipping & Handling

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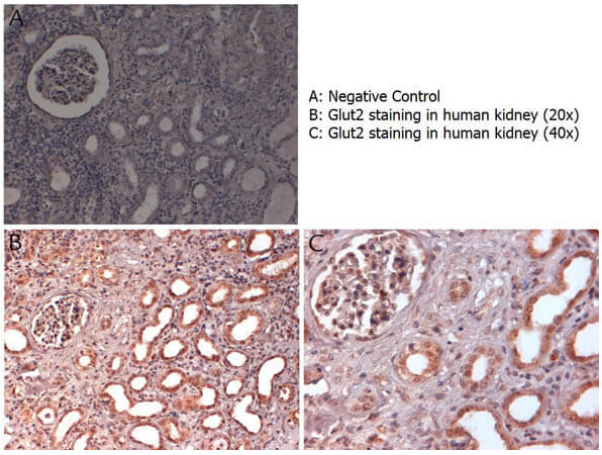
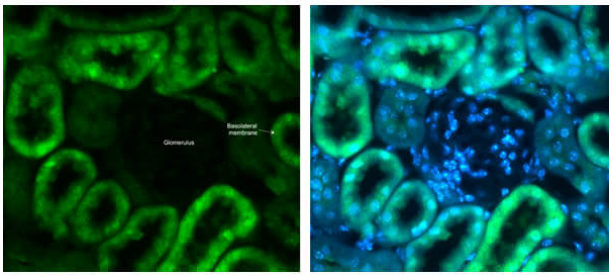
| **Shipping Condition:** | Dry Ice |
| **Storage Condition:** | Store vial at -20° C or below prior to opening. This vial contains a relatively low volume of reagent (25 µL). To minimize loss of volume dilute 1:10 by adding 225 µL of the buffer stated above directly to the vial. Recap, mix thoroughly and briefly centrifuge to collect the volume at the bottom of the vial. Use this intermediate dilution when calculating final dilutions as recommended below. Store the vial at -20°C or below after dilution. Avoid cycles of freezing and thawing. |
| **Expiration:** | Expiration date is one (1) year from date of receipt. |

## Images

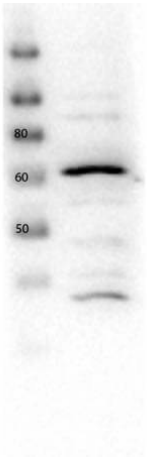



A: Negative Control
B: Glut2 staining in human kidney (20x)
C: Glut2 staining in human kidney (40x)

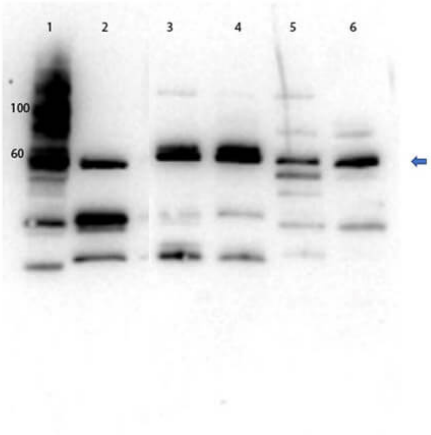
**Immunohistochemistry**
Immunohistochemistry with anti-Glut2 antibody showing Glut2 staining in nucleus and cytoplasm of ductal epithelium and of renal glomeruli in human kidney at 20x and 40x (B & C). Formalin fixed/paraffin embedded sections were subjected to heat induced epitope retrieval (HIER) at pH 6.2 and then incubated with rabbit anti-mouse Glut2 antibody at 4.0 µg/ml for 60 minutes. The reaction was developed using MACH 1 universal HRP polymer detection system and visualized with 3'3-diamino-benzidine substrate (DAB).



**Immunohistochemistry**
Immunohistochemistry of Anti-Glut2 Antibody. Tissue: mouse kidney. Antigen retrieval: Heat Induced, slides incubated in sodium citrate buffer for 1hr at 90°C. Primary: Rabbit Anti-Glut2 Antibody at 5µg/mL overnight. Blocking: 2% goat serum in TBST. Secondary: Alexa 488 at 1µg/mL for 2hrs at room temperature.




**Western Blot**
Western Blot of Rabbit anti-Glut2 antibody. Lane 1: HEK293 lysate (p/n W09-000-365). Load: 10µg per lane. Primary antibody: Glut2 antibody at 1:1000 for overnight at 4°C. Secondary antibody: Peroxidase rabbit secondary antibody (p/n 611-103-122) at 1:40,000 for 30 min at RT. Block: Blocking Buffer (p/n MB-070) overnight at 4°C. Predicted/Observed size: ~60 kDa.




**Western Blot**
Western Blot of Rabbit Anti-Glut2 Antibody. Lane 1: Molecular Weight. Lane 2: Mouse Kidney WCL (p/n W10-000-T014). Lane 3: MEF WCL (p/n W10-001-371). Lane 4: 3T3 WCL (p/n W10-000-358). Lane 5: HeLa WCL (p/n W09-000-364). Lane 6: HEK293 WCL (p/n W09-000-365). Load: 20µg per pane. Primary antibody: Anti-Glut2 at 1µg/mL overnight at 2-8°C. Secondary Antibody: Goat anti-Rabbit HRP (p/n 611-103-122) 1:40,000 diluted with MB-073 for 30 minutes at RT. Blocked with (p/n MB-073) Buffer. Expect: ~57.1 kDa. Exposure: 30 sec.

## References

- Bathina S et al. Normal β-Cell Glut2 Expression Is not Required for Regulating Glucose-Stimulated Insulin Secretion and Systemic Glucose Homeostasis in Mice. *Biomolecules.* (2023)
- Fujino M et al. Transcription factor c-Maf deletion improves streptozotocin-induced diabetic nephropathy by directly regulating Sglt2 and Glut2. *JCI Insight.* (2023)
- Laskowska AK et al. Fruits of Hippophaë rhamnoides in human leukocytes and Caco-2 cell monolayer models-A question about their preventive role in lipopolysaccharide leakage and cytokine secretion in endotoxemia. *Front Pharmacol.* (2022)
- de Souza Cordeiro LM et al. Loss of function of renal Glut2 reverses hyperglycaemia and normalises body weight in mouse models of diabetes and obesity. *Diabetologia.* (2022)
- Liang et al. Organic cation transporter 1 (OCT1) modulates multiple cardiometabolic traits through effects on hepatic thiamine content. *PLOS Biology* (2018)
- Chhabra et al. Reduced renal sympathetic nerve activity contributes to elevated glycosuria and improved glucose tolerance in hypothalamus-specific Pomc knockout mice. *Molecular Metabolism* (2017)
- Chhabra et al. Hypothalamic POMC Deficiency Improves Glucose Tolerance Despite Insulin Resistance by Increasing Glycosuria. *Diabetes* (2016)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