Revision 1

Store at -20C

#12939

Glut1 (D3J3A) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	45-60	Rabbit IgG	#P11166	6513

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Glut1 (D3J3A) Rabbit mAb recognizes endogenous levels of total Glut1 protein. This antibody does not cross-react with Glut2, Glut3, or Glut4.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu260 of human Glut1 protein.

Background

Glucose transporter 1 (Glut1, SLC2A1) is a widely expressed transport protein that displays a broad range of substrate specificity in transporting a number of different aldose sugars as well as an oxidized form of vitamin C into cells (1,2). Glut1 is responsible for the basal-level uptake of glucose from the blood through facilitated diffusion (2). Research studies show that Glut1 and the transcription factor HIF-1α mediate the regulation of glycolysis by O-GlcNAcylation in cancer cells (3). Additional studies demonstrate that Glut1 is required for CD4 T cell activation and is critical for the expansion and survival of T effector (Teff) cells (4). Mutations in the corresponding *SLC2A1* gene cause GLUT1 deficiency syndromes (GLUT1DS1, GLUT1DS2), a pair of neurologic disorders characterized by delayed development, seizures, spasticity, paroxysmal exercise-induced dyskinesia, and acquired microcephaly (5,6). Two other neurologic disorders - dystonia-9 (DYT9) and susceptibility to idiopathic generalized epilepsy 12 (EIG12) - are also caused by mutations in the *SLC2A1* gene (7,8).

Background References

1. Ferrer, C.M. et al. (2014) *Mol Cell* 54, 820-31.
2. Deng, D. et al. (2014) *Nature* 510, 121-5.
3. Agus, D.B. et al. (1997) *J Clin Invest* 100, 2842-8.
4. Macintyre, A.N. et al. (2014) *Cell Metab* 20, 61-72.
5. Wang, D. et al. (2005) *Ann Neurol* 57, 111-8.
6. Schneider, S.A. et al. (2009) *Mov Disord* 24, 1684-8.
7. Weber, Y.G. et al. (2011) *Neurology* 77, 959-64.
8. Suls, A. et al. (2009) *Ann Neurol* 66, 415-9.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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