Revision 1

Store at -20C

#36057

SNAT1/SLC38A1 (D9L2P) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	50-70	Rabbit IgG	#Q9H2H9	81539

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

SNAT1/SLC38A1 (D9L2P) Rabbit mAb recognizes endogenous levels of total SNAT1/SLC38A1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly37 of human SNAT1/SLC38A1 protein.

Background

SNAT1/SLC38A1 belongs to the system A transporters that mediate Na^+-dependent transport of short-chain neutral amino acids such as alanine, serine, and glutamine. SNAT1/SLC38A1 mediates the uptake of glutamine in neurons and plays a crucial role in glutamate-glutamine cycle. Steep concentration gradients across the plasma membrane are achieved by coupling of the electrochemical sodium gradient to amino acid transport. This allows a unidirectional mode of transport for SNAT1/SLC38A1. Upregulation of SNAT1/SLC38A1 by neurotrophic factors is key to dendritic growth and branching of cortical neurons. High expression of SNAT1/SLC38A1 is found in cerebral cortex primarily in neurons and to a lesser extent in astrocytes (1-4). Elevated SNAT1/SLC38A1 expression is prominent in human solid tumors including gliomas, hepatocellular carcinomas and human breast cancer (5-8). Research studies show that an aberrant SNAT1/SLC38A1 expression profile correlates with solid tumor recurrence and poor prognosis in patients with cholangiocarcinoma (9).

Background References

1. Yao, D. et al. (2000) *J Biol Chem* 275, 22790-7.
2. Mackenzie, B. et al. (2003) *J Biol Chem* 278, 23720-30.
3. Chaudhry, F.A. et al. (2002) *J Cell Biol* 157, 349-55.
4. Yu, W.L. et al. (2011) *J Surg Res* 171, 663-8.
5. Melone, M. et al. (2004) *Cereb Cortex* 14, 562-74.
6. Kondoh, N. et al. (2007) *Int J Oncol* 31, 81-7.
7. Sidoryk, M. et al. (2004) *Neuroreport* 15, 575-8.
8. Wang, K. et al. (2013) *BMC Cancer* 13, 343.
9. Burkhalter, J. et al. (2007) *J Biol Chem* 282, 5152-9.

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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Limited Uses

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