

SAP102 (G670) Antibody

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	102	Rabbit	#Q92796	1741

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Storage

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

Specificity/Sensitivity

SAP102 (G670) Antibody detects endogenous levels of total SAP102 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide surrounding residue Gly670 of human SAP102. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Synapse-associated protein **102** (SAP102, DLG3) belongs to the membrane-associated guanylate kinase (MAGUK) protein family and is a homolog of the *Drosophila* disc large (dlg) tumor suppressor protein. SAP102 consists of three PDZ domains, a Src homology 3 (SH3) domain, and a guanylate kinase (GK) domain (1). The SAP102 protein is more highly expressed in nonproliferating cells than in proliferating cells, indicating a role in the negative regulation of cell growth. SAP102 interacts with the carboxy terminus of the adenomatous polyposis coli (APC) tumor suppressor protein. Furthermore, SAP102 associates with PSD95 in the presence of calcium while the SH3 domain of SAP102 binds calmodulin (2,3). All three PDZ domains of SAP102 participate in binding to the NMDA receptor, interacting specifically with the carboxy-terminal domain of the N-methyl-D-aspartate receptor 2B (NR2B). This SAP102-NR2B interaction may facilitate AMPA receptor withdrawal from the postsynaptic membrane by inhibiting the Erk/MAPK pathway (1,4). Neuronal SAP102 is concentrated at dendritic shafts and spines, axons, and synaptic junctions. At excitatory synapses, SAP102 is involved in NMDA receptor clustering and immobilization and links NMDA receptors to the submembrane cytomatrix (4). SAP102 and the NMDA receptor function together to mediate plasticity, behavior, and signal transduction (1). A nonsyndromic form of X-linked mental retardation is caused by loss-of-function mutations to the SAP102 gene. The SAP102 protein may be involved in autism since MAGUK proteins in the NMDA receptor complex bind directly to the autism susceptibility gene, neuroligin (1,5).

Background References

1. Cuthbert, P.C. et al. (2007) *J Neurosci* 27, 2673-82.
2. Makino, K. et al. (1997) *Oncogene* 14, 2425-33.
3. Masuko, N. et al. (1999) *J Biol Chem* 274, 5782-90.
4. Lau, L.F. et al. (1996) *J Biol Chem* 271, 21622-8.
5. Yan, J. et al. (2005) *Mol Psychiatry* 10, 329-32.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

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

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