

#3733 Store at -20°C

SAP102 (G670) Antibody



✓ 100 µl
(10 Western mini-blot)

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New 11/08

This product is for *in vitro* research use only and is not intended for use in humans or animals.
This product is not intended for use as a therapeutic or in diagnostic procedures.

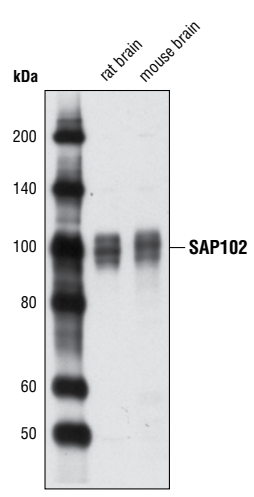
Entrez-Gene ID #1741
Swiss-Prot Acc. #Q92796

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R	102 kDa	Rabbit**

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 non-proliferating 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).

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 (KLH-coupled) surrounding residue Gly670 of human SAP102. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from rat and mouse brain using SAP102 (G670) Antibody.

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.

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.

*Species cross-reactivity is determined by Western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com

Companion Products:

- Phospho-NMDAR1 (Ser890) Antibody #3381
- NMDAR1 Antibody #4204
- Phospho-NMDAR2A (Tyr1246) Antibody #4206
- NMDAR2A Antibody #4205
- Phospho-AMPA Receptor (GluR 2) (Tyr876) Antibody #4027
- AMPA Receptor (GluR 2/3/4) Antibody #2460
- PSD95 Antibody #2507
- Phospho-Erk1/2 Pathway Sampler Kit #9911
- Tris Buffered Saline with Tween 20 (TBST - 10X) #9997
- Nonfat Dry Milk #9999
- Phototope®-HRP Western Blot Detection System, Anti-rabbit IgG, HRP-linked Antibody #7071
- Anti-rabbit IgG, HRP-linked Antibody #7074
- Prestained Protein Marker, Broad Range (Premixed Format) #7720
- Biotinylated Protein Ladder Detection Pack #7727
- 20X LumiGLO® Reagent and 20X Peroxide #7003

Please visit www.cellsignal.com for a complete listing of recommended companion products.

IMPORTANT: For Western blots, incubate membrane with diluted 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 IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide

Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebra fish B—bovine

Dg—dog Pg—pig Sc—S. cerevisiae All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.