

# SAPAP1 (I-19): sc-31522

## BACKGROUND

Members of the postsynaptic density-95 (PSD-95)/SAP90 family of membrane-associated guanylate kinase (MAGUK) proteins function as multimodular scaffolds that organize protein-signaling complexes at neuronal synapses. PSD-95/SAP90 binds guanylate kinase-associated protein (GKAP), also designated GK domain-binding protein, DAP-1- $\alpha$ , DAP-1- $\beta$ , PSD-95 binding protein, PSD-95/SAP90 associated protein, or SAPAP, through the guanylate kinase domain. GKAP is expressed widely in neurons of the cortex and hippocampus and in the Purkinje and granule cells of the cerebellum. GKAP is localized specifically in the PSD of glutamatergic synapses, consistent with its direct interaction with PSD-95 family proteins.

## REFERENCES

1. Naisbitt, S., Kim, E., Weinberg, R.J., Rao, A., Yang, F.C., Craig, A.M. and Sheng, M. 1997. Characterization of guanylate kinase-associated protein, a postsynaptic density protein at excitatory synapses that interacts directly with postsynaptic density 95/synapse-associated protein 90. *J. Neurosci.* 17: 5687-5696.
2. Kim, E., Naisbitt, S., Hsueh, Y.P., Rao, A., Rothschild, A., Craig, A.M. and Sheng, M. 1997. GKAP, a novel synaptic protein that interacts with the guanylate kinase-like domain of the PSD-95/SAP90 family of channel clustering molecules. *J. Cell Biol.* 136: 669-678.
3. Deguchi, M., Hata, Y., Takeuchi, M., Ide, N., Hirao, K., Yao, I., Irie, M., Toyoda, A. and Takai, Y. 1998. BEGAIN (brain-enriched guanylate kinase-associated protein), a novel neuronal PSD-95/SAP90-binding protein. *J. Biol. Chem.* 273: 26269-26272.
4. Yamada, Y., Chochi, Y., Ko, J.A., Sobue, K. and Inui, M. 1999. Activation of channel activity of the NMDA receptor-PSD-95 complex by guanylate kinase-associated protein (GKAP). *FEBS Lett.* 458: 295-298.
5. Passafaro, M., Sala, C., Niethammer, M. and Sheng, M. 1999. Microtubule binding by CRIPT and its potential role in the synaptic clustering of PSD-95. *Nat. Neurosci.* 2: 1063-1069.
6. Shin, H., Hsueh, Y.P., Yang, F.C., Kim, E. and Sheng, M. 2000. An intramolecular interaction between Src homology 3 domain and guanylate kinase-like domain required for channel clustering by postsynaptic density-95/SAP90. *J. Neurosci.* 20: 3580-3587.

## CHROMOSOMAL LOCATION

Genetic locus: DLGAP1 (human) mapping to 18p11.31; Dlgap1 (mouse) mapping to 17 E1.3.

## SOURCE

SAPAP1 (I-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SAPAP1 of human origin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31521 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

SAPAP1 (I-19) is recommended for detection of SAPAP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other SAPAP family members.

SAPAP1 (I-19) is also recommended for detection of SAPAP1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SAPAP1 siRNA (h): sc-41997, SAPAP1 siRNA (m): sc-41998, SAPAP1 shRNA Plasmid (h): sc-41997-SH, SAPAP1 shRNA Plasmid (m): sc-41998-SH, SAPAP1 shRNA (h) Lentiviral Particles: sc-41997-V and SAPAP1 shRNA (m) Lentiviral Particles: sc-41998-V.

Molecular Weight of GKAP: 95/130 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Bell, R.D., Winkler, E.A., Singh, I., Sagare, A.P., Deane, R., Wu, Z., Holtzman, D.M., Betsholtz, C., Armulik, A., Sallstrom, J., Berk, B.C. and Zlokovic, B.V. 2012. Apolipoprotein E controls cerebrovascular integrity via cyclophilin A. *Nature* 485: 512-516.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.