

# SynGAP (H-210): sc-33598

## BACKGROUND

The PSD-95/SAP 90 family of proteins, which are known to bind to and cluster various membrane proteins, are involved in the organization of synaptic structure. SynGAP (for synaptic GTPase activating protein), a novel synaptic RasGAP, is a brain-specific protein abundant in the cortex, hippocampus and olfactory bulb. SynGAP interacts with all three PDZ domains within PSD-95/SAP 90 proteins. It represents one of three classes of mammalian RasGAPs and is specifically localized to excitatory synapses possessing NMDA receptors. SynGAP may be involved in the regulation of BDNF as well as Ras signaling. Its activity is inhibited by phosphorylation by CaMKII, which could result in the activation of the MAP kinase pathway.

## REFERENCES

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- Chen, H.J., et al. 1998. A synaptic Ras-GTPase activating protein (p135 SynGAP) inhibited by CaM kinase II. *Neuron* 20: 895-904.
- Komiyama, N.H., et al. 2002. SynGAP regulates ERK/MAPK signaling, synaptic plasticity, and learning in the complex with postsynaptic density 95 and NMDA receptor. *J. Neurosci.* 22: 9721-9732.
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- Krapivinsky, G., et al. 2004. SynGAP-MUPP1-CaMKII synaptic complexes regulate p38 MAP kinase activity and NMDA receptor-dependent synaptic AMPA receptor potentiation. *Neuron* 43: 563-574.
- Vazquez, L.E., et al. 2004. SynGAP regulates spine formation. *J. Neurosci.* 24: 8862-8872.

## CHROMOSOMAL LOCATION

Genetic locus: SYNGAP1 (human) mapping to 6p21.32; Syngap1 (mouse) mapping to 17 A3.3.

## SOURCE

SynGAP (H-210) is a rabbit polyclonal antibody raised against amino acids 701-910 mapping within an internal region of SynGAP of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

SynGAP (H-210) is recommended for detection of SynGAP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

SynGAP (H-210) is also recommended for detection of SynGAP in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for SynGAP siRNA (h): sc-42283, SynGAP siRNA (m): sc-42284, SynGAP shRNA Plasmid (h): sc-42283-SH, SynGAP shRNA Plasmid (m): sc-42284-SH, SynGAP shRNA (h) Lentiviral Particles: sc-42283-V and SynGAP shRNA (m) Lentiviral Particles: sc-42284-V.

Molecular Weight of SynGAP: 135 kDa.

Positive Controls: Mouse brain extract: sc-2253.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

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

## 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.