SANTA CRUZ BIOTECHNOLOGY, INC.

GAP-43 (N-19): sc-7458

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GAP-43 (growth associated protein 43, B-50, PP46, calmodulin-binding protein P-57, neuromodulin, neuron growth-associated protein 43, protein F1) is a crucial component for regenerative response in the nervous system that is present at high levels in neuronal growth cones during development and axonal regeneration. GAP-43 is normally produced by neurons during developmental growth and axonal regeneration, but it is also expressed in specific regions of the normal adult nervous system. The neuron-specific ELAV/Hu family member, HuD, interacts with and stabilizes GAP-43 mRNA in developing neurons and leads to increased levels of GAP-43 protein. Heterozygous GAP-43 knockout mice with GAP-43 levels reduced by one-half display significant memory impairments in cued conditioning or on tests of nociceptive or auditory perception.

REFERENCES

1. Deloulme, J.C., et al. 1990. Neuromodulin (GAP-43): a neuronal protein kinase C substrate is also present in 0-2A glial cell lineage. Characterization of neuromodulin in secondary cultures of oligodendrocytes and comparison with the neuronal antigen. J. Cell Biol. 111: 1559-1569.
2. Neve, R.L., et al. 1998. The neuronal growth-associated protein GAP-43 interacts with rabaptin-5 and participates in endocytosis. J. Neurosci. 18: 7757-7767.
3. Arni, S., et al. 1998. Association of GAP-43 with detergent-resisting membranes requires two palmitoylated cysteine residues. J. Biol. Chem. 273: 28478-28485.
4. Sretavan, D.W., et al. 1998. Randomized retinal ganglion cell axon routing at the optic chiasm of GAP-43 deficient mice: association with midline recrossing and lack of normal ipsilateral axon turning. J. Neurosci. 18: 10502-10513.
5. Dent, E.W., et al. 1998. Distribution of phosphorylated GAP-43 (neuromodulin) in growth cones directly reflects growth cone behavior. J. Neurobiol. 35: 287-299.

CHROMOSOMAL LOCATION

Genetic locus: GAP43 (human) mapping to 3q13.31; Gap43 (mouse) mapping to 16 B4.

SOURCE

GAP-43 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GAP-43 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.

Blocking peptide available for competition studies, sc-7458 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

GAP-43 (N-19) is recommended for detection of axonal membrane protein GAP-43 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).

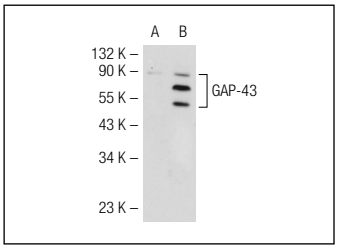
GAP-43 (N-19) is also recommended for detection of axonal membrane protein GAP-43 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for GAP-43 siRNA (h): sc-35446, GAP-43 siRNA (m): sc-35447, GAP-43 shRNA Plasmid (h): sc-35446-SH, GAP-43 shRNA Plasmid (m): sc-35447-SH, GAP-43 shRNA (h) Lentiviral Particles: sc-35446-V and GAP-43 shRNA (m) Lentiviral Particles: sc-35447-V.

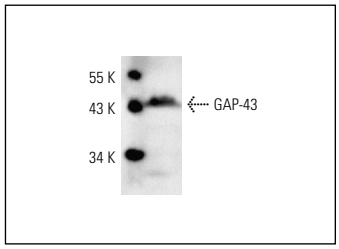
Molecular Weight of GAP-43: 43 kDa.

Positive Controls: mouse brain extract: sc-2253, rat cerebellum extract: sc-2398 or GAP-43 (h4): 293T Lysate: sc-175907.

DATA



GAP-43 (N-19): sc-7458. Western blot analysis of GAP-43 expression in non-transfected: sc-117752 (**A**) and human GAP-43 transfected: sc-175907 (**B**) 293T whole cell lysates.



GAP-43 (N-19): sc-7458. Western blot analysis of GAP-43 expression in mouse brain extract.

SELECT PRODUCT CITATIONS

1. Akazawa, C., et al. 2004. The upregulated expression of sonic hedgehog in motor neurons after rat facial nerve axotomy. J. Neurosci. 24: 7923-7930.
2. Gupta, R., et al. 2006. Local down-regulation of myelin-associated glycoprotein permits axonal sprouting with chronic nerve compression injury. Exp. Neurol. 200: 418-429.
3. Guedj, F., et al. 2012. DYRK1A: a master regulatory protein controlling brain growth. Neurobiol. Dis. 46: 190-203.
4. Opsahl, J.A., et al. 2013. Identification of dynamic changes in proteins associated with the cellular cytoskeleton after exposure to okadaic acid. Mar. Drugs 11: 1763-1782.

STORAGE

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