

GAP-43 (31): sc-135915

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 O-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.
6. Velasco, A., et al. 2003. Role of oleic acid as a neurotrophic factor is supported *in vivo* by the expression of GAP-43 subsequent to the activation of SREBP-1 and the up-regulation of stearyl-CoA desaturase during postnatal development of the brain. *Brain Res.* 977: 103-111.

CHROMOSOMAL LOCATION

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

SOURCE

GAP-43 (31) is a mouse monoclonal antibody raised against amino acids 1-144 of GAP-43 of human origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

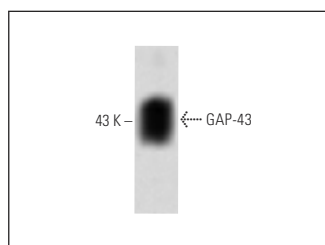
GAP-43 (31) is recommended for detection of GAP-43 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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: rat brain extract: sc-2392, mouse brain extract: sc-2253 or rat cerebellum extract: sc-2398.

DATA



GAP-43 (31): sc-135915. Western blot analysis of GAP-43 expression in rat cerebrum tissue extract.

SELECT PRODUCT CITATIONS

1. Zhong, L.Y., et al. 2019. Hyperpolarization-activated cyclic nucleotide-gated ion (HCN) channels regulate PC12 cell differentiation toward sympathetic neuron. *Front. Cell. Neurosci.* 13: 415.

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. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.



See **GAP-43 (B-5): sc-17790** for GAP-43 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.