SANTA CRUZ BIOTECHNOLOGY, INC.

GAP-43 (B-5): sc-17790

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.

CHROMOSOMAL LOCATION

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

SOURCE

GAP-43 (B-5) is a mouse monoclonal antibody raised against amino acids 1-100 mapping at the N-terminus of GAP-43 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GAP-43 (B-5) is available conjugated to agarose (sc-17790 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17790 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17790 PE), fluorescein (sc-17790 FITC), Alexa Fluor® 488 (sc-17790 AF488), Alexa Fluor® 546 (sc-17790 AF546), Alexa Fluor® 594 (sc-17790 AF594) or Alexa Fluor® 647 (sc-17790 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17790 AF680) or Alexa Fluor® 790 (sc-17790 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, GAP-43 (B-5) is available conjugated to biotin (sc-17790 B), 200 µg/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

GAP-43 (B-5) is recommended for detection of axonal membrane protein GAP-43 of mouse, rat and human origin by Western Blotting (starting dilution 1;100, dilution range 1:100-1:1,000), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

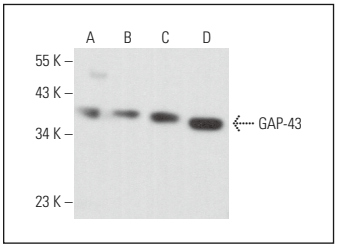
Molecular Weight of GAP-43: 43 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410.

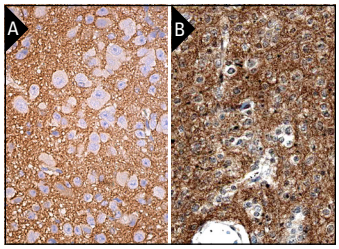
STORAGE

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

DATA



GAP-43 (B-5): sc-17790. Western blot analysis of GAP-43 expression in Neuro-2A (**A**), EOC 20 (**B**), SK-N-SH (**C**) and U-87 MG (**D**) whole cell lysates.



GAP-43 (B-5): sc-17790. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing neuropil staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human malignant glyoma tissue showing membrane and cytoplasmic staining of tumor cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Jin, T.E., et al. 2008. Involvement of corticotropin-releasing factor receptor 2 β in differentiation of dopaminergic MN9D cells. Mol. Cells 26: 243-249.
2. Riascos, D., et al. 2014. Alterations of Ca^{2+}-responsive proteins within cholinergic neurons in aging and Alzheimer's disease. Neurobiol. Aging 35: 1325-1333.
3. Akhter, H., et al. 2015. Cyclic ozone exposure induces gender-dependent neuropathology and memory decline in an animal model of Alzheimer's disease. Toxicol. Sci. 147: 222-234.
4. Li, P., et al. 2023. Chronic intranasal corticosteroid treatment induces degeneration of olfactory sensory neurons in normal and allergic rhinitis mice. Int. Forum Allergy Rhinol. 13: 1889-1905.
5. Hossein Geranmayeh, M., et al. 2023. Simultaneous pericytes and M2 microglia transplantation improve cognitive function in mice model of mPFC ischemia. Neuroscience 529: 62-72.
6. Zang, L., et al. 2023. Tenuigenin activates the IRS1/Akt/mTOR signaling by blocking PTPN1 to inhibit autophagy and improve locomotor recovery in spinal cord injury. J. Ethnopharmacol. 317: 116841.
7. Liu, J., et al. 2024. Protein expression of nucleolar protein 12 in the retina and its implication in protection of retina from UV irradiation damage. Cell Death Discov. 10: 130.
8. Özar, T., et al. 2025. HN1 is a novel dedifferentiation factor involved in regulating the cell cycle and microtubules in SH-SY5Y neuroblastoma cells. J. Cell. Biochem. 126: e30569.

RESEARCH USE

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