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.

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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.

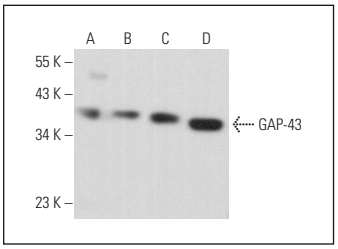
Molecular Weight of GAP-43: 43 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, EOC 20 whole cell lysate: sc-364187 or SK-N-SH cell lysate: sc-2410.

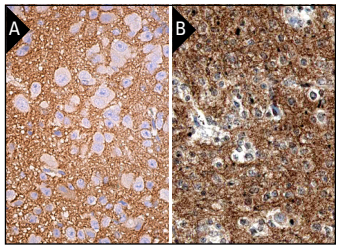
STORAGE

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. Yang, Z., et al. 2013. Y-39983 downregulates RhoA/Rho-associated kinase expression during its promotion of axonal regeneration. Oncol. Rep. 29: 1140-1146.
3. 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.
4. 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.
5. Hayakawa, K., et al. 2016. Transfer of mitochondria from astrocytes to neurons after stroke. Nature 535: 551-555.
6. Hu, Y., et al. 2017. Melatonin reduces hypoxic-ischaemic (HI) induced autophagy and apoptosis: an *in vivo* and *in vitro* investigation in experimental models of neonatal HI brain injury. Neurosci. Lett. 653: 105-112.
7. Jiménez-Maldonado, A., et al. 2018. Short-term fructose ingestion affects the brain independently from establishment of metabolic syndrome. Biochim. Biophys. Acta 1864: 24-33.
8. Yuan, C., et al. 2019. OAB-14, a bexarotene derivative, improves Alzheimer's disease-related pathologies and cognitive impairments by increasing β-Amyloid clearance in APP/PS1 mice. Biochim. Biophys. Acta Mol. Basis Dis. 1865: 161-180.

RESEARCH USE

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