

# GAP-43 (7B10): sc-33705



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 (7B10) is a mouse monoclonal antibody raised against full length GAP-43 of rat origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GAP-43 (7B10) is available conjugated to agarose (sc-33705 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33705 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33705 PE), fluorescein (sc-33705 FITC), Alexa Fluor® 488 (sc-33705 AF488), Alexa Fluor® 546 (sc-33705 AF546), Alexa Fluor® 594 (sc-33705 AF594) or Alexa Fluor® 647 (sc-33705 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33705 AF680) or Alexa Fluor® 790 (sc-33705 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

GAP-43 (7B10) 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), 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.

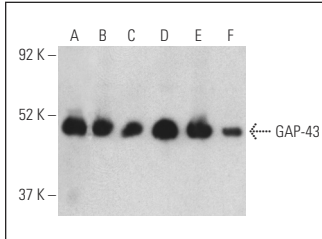
Molecular Weight of GAP-43: 43 kDa.

Positive Controls: mouse spinal cord extract: sc-395045, rat cerebellum extract: sc-2398 or rat brain extract: sc-2392.

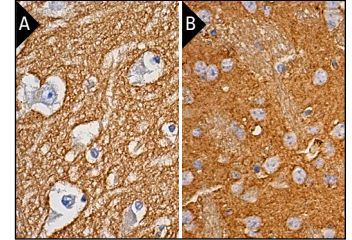
## STORAGE

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

## DATA



GAP-43 (7B10): sc-33705. Western blot analysis of GAP-43 expression in human brain (A), mouse cerebellum (B), mouse spinal cord (C), rat brain (D), rat cerebellum (E) and rat spinal cord (F) tissue extracts. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



GAP-43 (7B10): sc-33705. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex (A) and mouse brain (B) tissue showing neuropil staining.

## SELECT PRODUCT CITATIONS

- Teunissen, C.E., et al. 2006. Growth-associated protein 43 in lesions and cerebrospinal fluid in multiple sclerosis. *Neuropathol. Appl. Neurobiol.* 32: 318-331.
- Lemmens, K., et al. 2016. Matrix metalloproteinases as promising regulators of axonal regrowth in the injured adult zebrafish retinotectal system. *J. Comp. Neurol.* 524: 1472-1493.
- Zhang, X., et al. 2017. MicroRNA-210 contributes to peripheral nerve regeneration through promoting the proliferation and migration of Schwann cells. *Exp. Ther. Med.* 14: 2809-2816.
- Shi, D., et al. 2018. Local application of MDL28170-loaded PCL film improves functional recovery by preserving survival of motor neurons after traumatic spinal cord injury. *Neurosci. Lett.* 694: 161-167.
- Zhang, K., et al. 2019. ALK5 signaling pathway mediates neurogenesis and functional recovery after cerebral ischemia/reperfusion in rats via Gadd45b. *Cell Death Dis.* 10: 360.
- Afzal, S., et al. 2020. Anti-stress, glial- and neuro-differentiation potential of resveratrol: characterization by cellular, biochemical and imaging assays. *Nutrients* 12: 671.
- Kaul, A., et al. 2021. Molecular insights into the antistress potentials of Brazilian green propolis extract and its constituent artepillin C. *Molecules* 27: 80.
- Gavid, M., et al. 2023. Technique of flat-mount immunostaining for mapping the olfactory epithelium and counting the olfactory sensory neurons. *PLoS ONE* 18: e0280497.

## RESEARCH USE

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