

S-100 β chain (C-3): sc-393919

BACKGROUND

The family of EF-hand type Ca^{2+} -binding proteins includes calbindin (previously designated vitamin D-dependent Ca^{2+} -binding protein), S-100 α and β , calgranulins A (also designated MRP8), B (also designated MRP14) and C (S-100 like proteins), and the parvalbumin family members, including parvalbumin α and parvalbumin β (also designated oncomodulin). The S-100 protein is involved in the regulation of cellular processes such as cell cycle progression and differentiation. Research also indicates that the S-100 protein may function in the activation of Ca^{2+} induced Ca^{2+} release, inhibition of microtubule assembly and inhibition of protein kinase C mediated phosphorylation. Two S-100 subunits, sharing 60% sequence identity, have been described as S-100 α chain and S-100 β chain. Three S-100 dimeric forms have been characterized, differing in their subunit composition of either two α chains, two β chains or one α and one β chain. S-100 localizes to the cytoplasm and nuclei of astrocytes, Schwann's cells, ependymomas and astroglomas. S-100 is also detected in almost all benign naevi, malignant melanocytic tumours and in Langerhans cells in the skin. Calbindin, S-100 proteins and parvalbumin proteins are each expressed in neural tissues. In addition, S-100 α and β are present in a variety of other tissues, and calbindin is present in intestine and kidney.

CHROMOSOMAL LOCATION

Genetic locus: S100B (human) mapping to 21q22.3; S100b (mouse) mapping to 10 C1.

SOURCE

S-100 β chain (C-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 31-52 within an internal region of S-100 β chain of human origin.

PRODUCT

Each vial contains 200 μg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

S-100 β chain (C-3) is available conjugated to agarose (sc-393919 AC), 500 μg /0.25 ml agarose in 1 ml, for IP; to HRP (sc-393919 HRP), 200 μg /ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393919 PE), fluorescein (sc-393919 FITC), Alexa Fluor® 488 (sc-393919 AF488), Alexa Fluor® 546 (sc-393919 AF546), Alexa Fluor® 594 (sc-393919 AF594) or Alexa Fluor® 647 (sc-393919 AF647), 200 μg /ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393919 AF680) or Alexa Fluor® 790 (sc-393919 AF790), 200 μg /ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393919 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

S-100 β chain (C-3) is recommended for detection of S-100 β chain of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

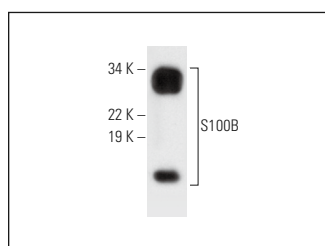
S-100 β chain (C-3) is also recommended for detection of S-100 β chain in additional species, including equine.

Suitable for use as control antibody for S-100 β chain siRNA (h): sc-43356, S-100 β chain siRNA (m): sc-43357, S-100 β chain shRNA Plasmid (h): sc-43356-SH, S-100 β chain shRNA Plasmid (m): sc-43357-SH, S-100 β chain shRNA (h) Lentiviral Particles: sc-43356-V and S-100 β chain shRNA (m) Lentiviral Particles: sc-43357-V.

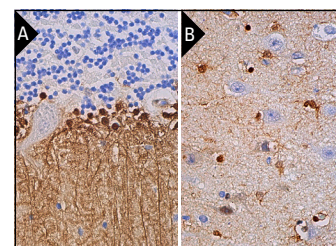
Molecular Weight of S-100 β chain dimer: 21 kDa.

Molecular Weight of S-100 β chain: 10 kDa.

DATA



S-100 β chain (C-3): sc-393919. Western blot analysis of human recombinant S100B.



S-100 β chain (C-3): sc-393919. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing nuclear staining of subset of cells in molecular layer and neuropil staining of granular layer (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing nuclear staining of glial cells (B).

SELECT PRODUCT CITATIONS

- Adachi, C., et al. 2019. Sonic hedgehog enhances calcium oscillations in hippocampal astrocytes. *J. Biol. Chem.* 294: 16034-16048.
- Ardizzone, A., et al. 2022. SUN11602, a bFGF mimetic, modulated neuroinflammation, apoptosis and calcium-binding proteins in an *in vivo* model of MPTP-induced nigrostriatal degeneration. *J. Neuroinflammation* 19: 107.
- Ardizzone, A., et al. 2023. bFGF-like activity supported tissue regeneration, modulated neuroinflammation, and rebalanced Ca^{2+} homeostasis following spinal cord injury. *Int. J. Mol. Sci.* 24: 14654.
- Basilotta, R., et al. 2024. Benzyl isothiocyanate suppresses development of thyroid carcinoma by regulating both autophagy and apoptosis pathway. *iScience* 27: 110796.

RESEARCH USE

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