

S-100 β chain (9A11B9): sc-81709

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.

REFERENCES

1. Pfyffer, G.E., et al. 1987. Developmental and functional studies of parvalbumin and Calbindin D28K in hypothalamic neurons grown in serum-free medium. *J. Neurochem.* 49: 442-451.
2. Heizmann, C.W. 1988. Calcium-binding proteins of the EF-type. *J. Cardiovasc. Pharmacol.* 5: S30-S37.
3. Kagi, U., et al. 1988. Developmental appearance of the Ca^{2+} -binding proteins parvalbumin, Calbindin D-28K, S-100 proteins and calmodulin during testicular development in the rat. *Cell Tissue Res.* 252: 359-365.

CHROMOSOMAL LOCATION

Genetic locus: S100B (human) mapping to 21q22.3.

SOURCE

S-100 β chain (9A11B9) is a mouse monoclonal antibody raised against a recombinant protein corresponding to full length S-100 β chain of human origin.

PRODUCT

Each vial contains 200 μg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

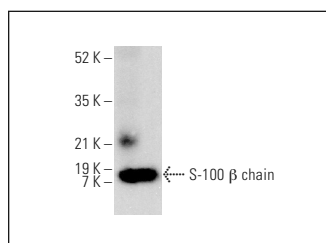
S-100 β chain (9A11B9) is recommended for detection of S-100 β chain of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

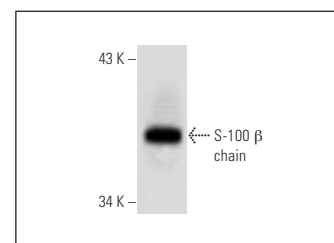
Molecular Weight of S-100 β chain: 10 kDa.

Positive Controls: human cerebellum tissue extract.

DATA



S-100 β chain (9A11B9): sc-81709. Western blot analysis of S-100 β chain expression in human cerebellum tissue extract.



S-100 β chain (9A11B9): sc-81709. Western blot analysis of full-length human recombinant S-100 β chain protein.

SELECT PRODUCT CITATIONS

1. Witusik, M., et al. 2008. Successful elimination of non-neural cells and unachievable elimination of glial cells by means of commonly used cell culture manipulations during differentiation of GFAP and Sox2 positive neural progenitors (NHA) to neuronal cells. *BMC Biotechnol.* 8: 56.
2. Wang, Q., et al. 2012. Evaluation of human brain damage in fatalities due to extreme environmental temperature by quantification of basic fibroblast growth factor (bFGF), glial fibrillary acidic protein (GFAP), S100 β and single-stranded DNA (ssDNA) immunoreactivities. *Forensic Sci. Int.* 219: 259-264.
3. Kim, J., et al. 2015. The RAGE receptor and its ligands are highly expressed in astrocytes in a grade-dependant manner in the striatum and subependymal layer in Huntington's disease. *J. Neurochem.* 134: 927-942.
4. Jimenez, H., et al. 2019. Tumour-specific amplitude-modulated radiofrequency electromagnetic fields induce differentiation of hepatocellular carcinoma via targeting $\text{Ca}_v3.2$ T-type voltage-gated calcium channels and Ca^{2+} influx. *EBioMedicine* 44: 209-224.

CONJUGATES

See **S-100 β chain (C-3): sc-393919** for S-100 β chain antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.