

S-100 α/β chain (4B3): sc-52205

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

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- Kagi, U., et al. 1988. Developmental appearance of the Ca^{2+} -binding proteins parvalbumin, Calbindin D28K, S-100 proteins and calmodulin during testicular development in the rat. *Cell Tissue Res.* 252: 359-365.
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- Beaudeau, J., et al. 1999. Pathophysiologic aspects of S-100 β protein: a new biological marker of brain pathology. *Ann. Biol. Clin.* 57: 261-272.

CHROMOSOMAL LOCATION

Genetic locus: S100B (human) mapping to 21q22.3, S100A1 (human) mapping to 1q21.3; S100b (mouse) mapping to 10 C1, S100a1 (mouse) mapping to 3 F1.

SOURCE

S-100 α/β chain (4B3) is a mouse monoclonal antibody raised against S-100 protein of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

S-100 α/β chain (4B3) is recommended for detection of S-100 β and S100 $\alpha\beta$ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

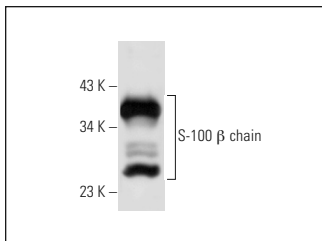
Molecular Weight of S-100 α chain: 11 kDa.

Molecular Weight of S-100 $\alpha\beta$ chain dimer: 21 kDa.

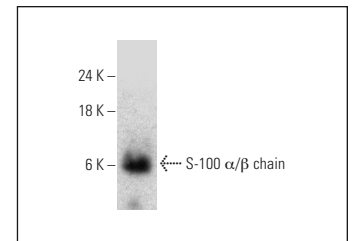
Molecular Weight of S-100 β chain: 10 kDa.

Positive Controls: human cerebellum extract: sc-516706.

DATA



S-100 α/β chain (4B3): sc-52205. Western blot analysis of human recombinant S-100 β .



S-100 α/β chain (4B3): sc-52205. Western blot analysis of S-100 α/β chain expression in human cerebellum tissue extract.

SELECT PRODUCT CITATIONS


- Wu, M., et al. 2020. A large-scale collection of giant congenital melanocytic nevi: clinical and histopathological characteristics. *Exp. Ther. Med.* 19: 313-318.

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.



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.