SANTA CRUZ BIOTECHNOLOGY, INC.

S-100 α/β chain (B32.1): sc-58839

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

SOURCE

S-100 α/β chain (B32.1) is a mouse monoclonal antibody raised against S-100 of bovine origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

S-100 α/β chain (B32.1) is recommended for detection of S-100 α and β chains 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

S-100 α/β chain (B32.1) is also recommended for detection of S-100 α and β chains in additional species, including bovine, porcine, feline and monkey.

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

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

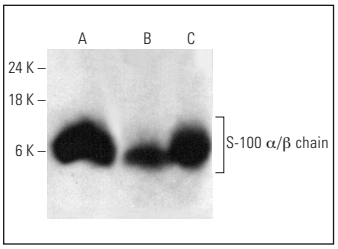
Molecular Weight of S-100 β chain: 10 kDa.

Positive Controls: mouse cerebellum extract: sc-2403, rat brain extract: sc-2392 or human cerebellum extract: sc-516706.

STORAGE

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

DATA



S-100 α/β chain (B32.1): sc-58839. Western blot analysis of S-100 α/β chain expression in human cerebellum (**A**), mouse cerebellum (**B**) and rat brain (**C**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Saito, H., et al. 2009. Delayed nerve repair increases number of caspase 3 stained Schwann cells. Neurosci. Lett. 456: 30-33.
2. Jehs, T., et al. 2016. Induction of chemokine secretion and monocyte migration by human choroidal melanocytes in response to proinflammatory cytokines. Invest. Ophthalmol. Vis. Sci. 57: 6568-6579.
3. Mete, M., et al. 2018. Neuroprotective effects of oleocanthal, a compound in virgin olive oil, in a rat model of traumatic brain injury. Turk. Neurosurg. 28: 858-865.
4. Shao, W., et al. 2020. Centrosome anchoring regulates progenitor properties and cortical formation. Nature 580: 106-112.
5. Stenberg, L., et al. 2021. Injury-induced HSP27 expression in peripheral nervous tissue is not associated with any alteration in axonal outgrowth after immediate or delayed nerve repair. Int. J. Mol. Sci. 22: 8624.
6. Zhang, P., et al. 2022. Generation of an S100B homozygous knockout pluripotent stem cell line (WAe009-A-94) by the CRISPR/Cas9 system. Stem Cell Res. 64: 102924.
7. Borgonetti, V., et al. 2023. Posttranscriptional regulation of gene expression participates in the myelin restoration in mouse models of multiple sclerosis: antisense modulation of HuR and HuD ELAV RNA binding protein. Mol. Neurobiol. E-published.

RESEARCH USE

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

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.