SANTA CRUZ BIOTECHNOLOGY, INC.

S-100 (1.F.2): sc-71994

BACKGROUND

The family of EF-hand type Ca^{2+}-binding proteins includes calbindin (previously designated vitamin D-dependent Ca^{2+}-binding protein), S-100α 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 (OCM). Calbindin, S-100 proteins and parvalbumin proteins are each expressed in neural tissues. In addition, S-100α and β are present in a variety of other tissues, and calbindin is present in intestine and kidney. Parvalbumin α is also found in fast-contracting/relaxing skeletal muscle fibers and parvalbumin β is found in many tumor tissues as well as in the organ of Corti. Calbindin, S-100 proteins and parvalbulmins have all been detected in leydig cells and the testis. These proteins are thought to play a role in hormone production and spermatogenesis. Calgranulin is expressed in macrophages and epithelial cells.

REFERENCES

1. Vanstapel, M.J., et al. 1985. Production of monoclonal antibodies directed against antigenic determinants common to the α and β chain of bovine brain S-100 protein. Lab. Invest. 52: 232-238.
2. 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.
3. Heizmann, C.W. 1988. Calcium-binding proteins of the EF-type. J. Cardiovasc. Pharmacol. 5: S30-S37.
4. 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.
5. Zimmer, D.B., et al. 1991. Isolation of a rat S-100 α cDNA and distribution of its mRNA in rat tissues. Brain Res. Bull. 27: 157-162.
6. Rickmann, M. and Wolff, J.R. 1995. S-100 protein expression in subpopulations of neurons of rat brain. Neuroscience 67: 977-991.
7. Wang, Y.Z. and Christakos, S. 1995. Retinoic acid regulates the expression of the calcium binding protein, calbindin-D28k. Mol. Endocrinol. 9: 1510-1521.
8. Muntener, M., et al. 1995. Increase of skeletal muscle relaxation speed by direct injection of parvalbumin cDNA. Proc. Natl. Acad. Sci. USA 92: 6504-6508.
9. Hitomi, J., et al. 1996. A novel calcium-binding protein in amniotic fluid. CAAF1: its molecular cloning and tissue distribution. J. Cell Sci. 109: 805-815.

CHROMOSOMAL LOCATION

Genetic locus: S100A1 (human) mapping to 1q21.3; S100a1 (mouse) mapping to 3 F1.

SOURCE

S-100 (1.F.2) is a mouse monoclonal antibody raised against S-100 protein of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

S-100 (1.F.2) is recommended for detection of S-100 of mouse, rat and human origin by 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 dimer: 21 kDa.

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

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

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 2) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

1. Shao, Z., et al. 2013. EphA2/ephrinA1 mRNA expression and protein production in adenoid cystic carcinoma of salivary gland. J. Oral Maxillofac. Surg. 71: 869-878.
2. Yang, Y., et al. 2013. Implication of tumor stem-like cells in the tumorigenesis of sporadic paraganglioma. Med. Oncol. 30: 659.
3. Dawson-Baglien, E.M., et al. 2015. Isolation and cultivation of canine uveal melanocytes. Vet. Ophthalmol. 18: 285-290.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.