

# S-100BB (3B10): sc-52204

## BACKGROUND

The family of EF-hand type Ca<sup>2+</sup>-binding proteins includes calbindin (previously designated vitamin D-dependent Ca<sup>2+</sup>-binding protein), S-100  $\alpha$  and  $\beta$ , calgranulins A (also designated MRP8), B (also designated MRP14) and C (S-100 like proteins), and the parvalbumin family members, including parvalbumin  $\alpha$  and parvalbumin  $\beta$  (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<sup>2+</sup> induced Ca<sup>2+</sup> 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  $\alpha$  chain and S-100  $\beta$  chain. Three S-100 dimeric forms have been characterized, differing in their subunit composition of either two  $\alpha$  chains, two  $\beta$  chains or one  $\alpha$  and one  $\beta$  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  $\alpha$  and  $\beta$  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<sup>2+</sup>-binding proteins parvalbumin, calbindin D28K, S-100 proteins and calmodulin during testicular development in the rat. *Cell Tissue Res.* 252: 359-365.
4. Zimmer, D.B., et al. 1991. Isolation of a rat S-100  $\alpha$  cDNA and distribution of its mRNA in rat tissues. *Brain Res. Bull.* 27: 157-162.
5. Rickmann, M. and Wolff, J.R. 1995. S-100 protein expression in subpopulations of neurons of rat brain. *Neuroscience* 67: 977-991.
6. Wang, Y.Z. and Christakos, S. 1995. Retinoic acid regulates the expression of the calcium binding protein, calbindin D28K. *Mol. Endocrinol.* 9: 1510-1521.
7. 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.
8. 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.
9. Beaudoux, J., et al. 1999. Pathophysiologic aspects of S-100  $\beta$  protein: a new biological marker of brain pathology. *Ann. Biol. Clin.* 57: 261-272.

## STORAGE

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

## CHROMOSOMAL LOCATION

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

## SOURCE

S-100BB (3B10) is a mouse monoclonal antibody raised against S-100 proteins of human brain origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

S-100BB (3B10) is recommended for detection of S100BB of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of S-100BB: 11 kDa.

## SELECT PRODUCT CITATIONS

1. Yang, S., et al. 2015. SOX2 promotes tumorigenicity and inhibits the differentiation of I-type neuroblastoma cells. *Int. J. Oncol.* 46: 317-323.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.