

# S-100 $\beta$ chain (G-9): sc-398707

## BACKGROUND

The family of EF-hand type  $\text{Ca}^{2+}$ -binding proteins includes calbindin (previously designated vitamin D-dependent  $\text{Ca}^{2+}$ -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  $\text{Ca}^{2+}$  induced  $\text{Ca}^{2+}$  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  $\alpha$  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  $\text{Ca}^{2+}$ -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. S100 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.

## CHROMOSOMAL LOCATION

Genetic locus: S100B (human) mapping to 21q22.3; S100b (mouse) mapping to 10 C1.

## SOURCE

S-100  $\beta$  chain (G-9) is a mouse monoclonal antibody raised against amino acids 37-92 mapping at the C-terminus of S-100  $\beta$  chain of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

S-100  $\beta$  chain (G-9) is recommended for detection of S-100  $\beta$  chain of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for S-100  $\beta$  chain siRNA (h): sc-43356, S-100  $\beta$  chain siRNA (m): sc-43357, S-100  $\beta$  chain shRNA Plasmid (h): sc-43356-SH, S-100  $\beta$  chain shRNA Plasmid (m): sc-43357-SH, S-100  $\beta$  chain shRNA (h) Lentiviral Particles: sc-43356-V and S-100  $\beta$  chain shRNA (m) Lentiviral Particles: sc-43357-V.

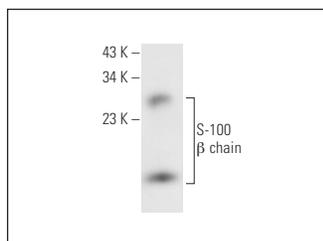
Molecular Weight of S-100  $\beta$  chain dimer: 21 kDa.

Molecular Weight of S-100  $\beta$  chain: 10 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



S-100  $\beta$  chain (G-9): sc-398707. Western blot analysis of human recombinant S-100  $\beta$  chain.

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