

# S-100 $\alpha$ chain (C-20)-R: sc-7849-R

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

S-100  $\alpha$  chain (C-20)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of S-100  $\alpha$  chain of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7849 P, (100  $\mu\text{g}$  peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

S-100  $\alpha$  chain (C-20)-R is recommended for detection of S-100  $\alpha$  chain of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

S-100  $\alpha$  chain (C-20)-R is also recommended for detection of S-100  $\alpha$  chain in additional species, including equine, canine and bovine.

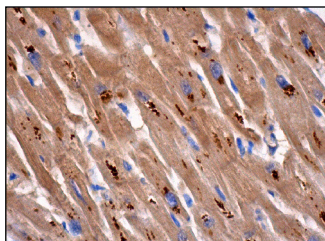
Suitable for use as control antibody for S-100  $\alpha$  chain siRNA (h): sc-43354, S-100  $\alpha$  chain siRNA (m): sc-43355, S-100  $\alpha$  chain shRNA Plasmid (h): sc-43354-SH, S-100  $\alpha$  chain shRNA Plasmid (m): sc-43355-SH, S-100  $\alpha$  chain shRNA (h) Lentiviral Particles: sc-43354-V and S-100  $\alpha$  chain shRNA (m) Lentiviral Particles: sc-43355-V.

Molecular Weight of S-100  $\alpha$  chain: 11 kDa.

## 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  $\alpha$  chain (C-20)-R: sc-7849-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

## SELECT PRODUCT CITATIONS

1. Kilty, I.C., et al. 1999. Isolation of a potential neural stem cell line from the internal capsule of an adult transgenic rat brain. *J. Neurochem.* 73: 1859-1870.
2. Jiang, W.G., et al. 2004. Psoriasis is aberrant expressed in human breast cancer and is related to clinical outcomes. *Int. J. Oncol.* 25: 81-85.
3. Wang, Y., et al. 2005. Ischemia-reperfusion injury causes oxidative stress and apoptosis of Schwann cell in acute and chronic experimental diabetic neuropathy. *Antioxid. Redox Signal.* 7: 1513-1520.
4. Naim, R., et al. 2006. The role of S100A1 in external auditory canal cholesteatoma. *Oncol. Rep.* 16: 671-675.
5. Kaidoh, T., et al. 2008. N-cadherin expression in palisade nerve endings of rat vellus hairs. *J. Comp. Neurol.* 506: 525-534.
6. Marrero, B., et al. 2009. Generation of a tumor spheroid in a microgravity environment as a 3D model of melanoma. *In Vitro Cell. Dev. Biol. Anim.* 45: 523-534.
7. Wang, J.G., et al. 2010. Primary pleomorphic liposarcoma of pericardium. *Interact. Cardiovasc. Thorac. Surg.* 11: 325-327.

## 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) or our catalog for detailed protocols and support products.