



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



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Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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## S-100 $\alpha$ chain siRNA (m): sc-43355

### 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. S-100 protein expression in subpopulations of neurons of rat brain. *Neuroscience* 67: 977-991.

### CHROMOSOMAL LOCATION

Genetic locus: S100a1 (mouse) mapping to 3 F1.

### PRODUCT

S-100  $\alpha$  chain siRNA (m) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu\text{M}$  solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see S-100  $\alpha$  chain shRNA Plasmid (m): sc-43355-SH and S-100  $\alpha$  chain shRNA (m) Lentiviral Particles: sc-43355-V as alternate gene silencing products.

For independent verification of S-100  $\alpha$  chain (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-43355A and sc-43355B.

### RESEARCH USE

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

### STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}\text{C}$  with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}\text{C}$ , avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu\text{l}$  of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu\text{l}$  of RNase-free water makes a 10  $\mu\text{M}$  solution in a 10  $\mu\text{M}$  Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

### APPLICATIONS

S-100  $\alpha$  chain siRNA (m) is recommended for the inhibition of S-100  $\alpha$  chain expression in mouse cells.

### SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu\text{M}$  in 66  $\mu\text{l}$ . Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

### GENE EXPRESSION MONITORING

S-100  $\alpha$  chain (4c4.9): sc-58837 is recommended as a control antibody for monitoring of S-100  $\alpha$  chain gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor S-100  $\alpha$  chain gene expression knockdown using RT-PCR Primer: S-100  $\alpha$  chain (m)-PR: sc-43355-PR (20  $\mu\text{l}$ ). Annealing temperature for the primers should be  $55-60^{\circ}\text{C}$  and the extension temperature should be  $68-72^{\circ}\text{C}$ .

### PROTOCOLS

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