

## S-100A14 siRNA (h): sc-61486

### BACKGROUND

The S-100 protein family consists of a group of calcium-binding proteins, which exhibit cell and tissue-specific expression. The expression levels of its members differ in various pathological conditions. The extracellular functions of the S-100 family may include the ability to enhance neurite outgrowth, involvement in inflammation, and motility of tumor cells. S100 calcium binding protein A14 (S-100A14), a member of the S-100 protein family, is expressed highest in the colon and moderately in the thymus, kidney, liver, small intestine and lung. Low expression of S-100A14 is observed in the heart, while no detection is seen in brain, skeletal muscle, spleen, placenta and peripheral blood leukocytes. S-100A14 is a 104-amino acid protein that is 68% homologous to the S-100A13 protein. It contains two EF-hand  $\text{Ca}^{2+}$ -binding domains, a myristoylation motif, a glycosylation site, and several potential protein kinase phosphorylation sites.

### REFERENCES

1. Pietas, A., et al. 2002. Molecular cloning and characterization of the human S100A14 gene encoding a novel member of the S100 family. *Genomics* 79: 513-522.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607986. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Adam, P.J., et al. 2003. Comprehensive proteomic analysis of breast cancer cell membranes reveals unique proteins with potential roles in clinical cancer. *J. Biol. Chem.* 278: 6482-6489.
4. Ji, J., et al. 2004. Differential expression of S100 gene family in human esophageal squamous cell carcinoma. *J. Cancer Res. Clin. Oncol.* 130: 480-486.
5. Smirnov, D.A., et al. 2005. Global gene expression profiling of circulating tumor cells. *Cancer Res.* 65: 4993-4997.
6. Zimmer, D.B., et al. 2005. S100-mediated signal transduction in the nervous system and neurological diseases. *Cell. Mol. Biol.* 51: 201-214.

### CHROMOSOMAL LOCATION

Genetic locus: S100A14 (human) mapping to 1q21.3.

### PRODUCT

S-100A14 siRNA (h) is a pool of 3 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-100A14 shRNA Plasmid (h): sc-61486-SH and S-100A14 shRNA (h) Lentiviral Particles: sc-61486-V as alternate gene silencing products.

For independent verification of S-100A14 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61486A, sc-61486B and sc-61486C.

### 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-100A14 siRNA (h) is recommended for the inhibition of S-100A14 expression in human 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-100A14 (5): sc-101506 is recommended as a control antibody for monitoring of S-100A14 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).

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) 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.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor S-100A14 gene expression knockdown using RT-PCR Primer: S-100A14 (h)-PR: sc-61486-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.