

## Pax-7 siRNA (m): sc-38750

### BACKGROUND

The Pax gene family of nuclear transcription factors is comprised of nine members that function during embryogenesis to regulate the temporal and position-dependent differentiation of cells. In addition, the family is involved in a variety of signal transduction pathways in the adult organism. Mutations in the Pax family of proteins have been linked to disease and cancer in humans. Pax-7 is a protein specifically expressed in cultured satellite cell-derived myoblasts. *In situ* hybridization reveals that Pax-7 is also expressed in satellite cells residing in adult muscle. A chromosomal aberration in the gene encoding Pax-7 causes rhabdomyosarcoma 2 (RMS2) (also called alveolar rhabdomyosarcoma).

### REFERENCES

1. Walther, C., et al. 1992. Pax: a murine multigene family of paired box-containing genes. *Genomics* 11: 424-434.
2. Shapiro, D.N., et al. 1993. The gene for Pax-7, a member of the paired-box-containing genes, is localized on human chromosome arm 1p36. *Genomics* 17: 767-769.
3. Schäfer, B.W., et al. 1995. Molecular cloning and characterization of a human Pax-7 cDNA expressed in normal and neoplastic myocytes. *Nucleic Acids Res.* 22: 4574-4582.
4. Stapleton, P., et al. 1995. Chromosomal localization of seven Pax genes and cloning of a novel family member, Pax-9. *Nat. Genet.* 3: 292-298.
5. Vorobyov, E., et al. 1997. The genomic organization and the full coding region of the human Pax-7 gene. *Genomics* 45: 168-174.

### CHROMOSOMAL LOCATION

Genetic locus: Pax7 (mouse) mapping to 4 D3.

### PRODUCT

Pax-7 siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Pax-7 shRNA Plasmid (m): sc-38750-SH and Pax-7 shRNA (m) Lentiviral Particles: sc-38750-V as alternate gene silencing products.

For independent verification of Pax-7 (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-38750A, sc-38750B and sc-38750C.

### STORAGE AND RESUSPENSION

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

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

### APPLICATIONS

Pax-7 siRNA (m) is recommended for the inhibition of Pax-7 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  $\mu$ M in 66  $\mu$ 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

Pax-7 (PAX7): sc-81648 is recommended as a control antibody for monitoring of Pax-7 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Pax-7 gene expression knockdown using RT-PCR Primer: Pax-7 (m)-PR: sc-38750-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

### SELECT PRODUCT CITATIONS

1. Riuzzi, F., et al. 2012. HMGB1-RAGE regulates muscle satellite cell homeostasis through p38-MAPK- and myogenin-dependent repression of Pax7 transcription. *J. Cell Sci.* 125: 1440-1454.
2. Chiappalupi, S., et al. 2014. Defective RAGE activity in embryonal rhabdomyosarcoma cells results in high Pax-7 levels that sustain migration and invasiveness. *Carcinogenesis* 35: 2382-2392.

### 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.