SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-7 siRNA (h): sc-38749

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (human) mapping to 1p36.13.

PRODUCT

Pax-7 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Pax-7 shRNA Plasmid (h): sc-38749-SH and Pax-7 shRNA (h) Lentiviral Particles: sc-38749-V as alternate gene silencing products.

For independent verification of Pax-7 (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-38749A, sc-38749B and sc-38749C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Pax-7 siRNA (h) is recommended for the inhibition of Pax-7 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 µM in 66 µl. 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Pax-7 gene expression knockdown using RT-PCR Primer: Pax-7 (h)-PR: sc-38749-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. 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.
2. Riuzzi, F., et al. 2014. RAGE signaling deficiency in rhabdomyosarcoma cells causes upregulation of PAX7 and uncontrolled proliferation. J. Cell Sci. 127: 1699-1711.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.