SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-5 siRNA (h): sc-36193

BACKGROUND

The Pax family of nuclear transcription factors is comprised of nine members that function during embryogenesis to regulate the temporal and position-dependent differentiation of cells. Pax family genes are also involved in a variety of signal transduction pathways in the adult organism. Mutations in Pax proteins have been linked to disease and cancer in humans. For example, the human PAX5 gene encodes a B cell lineage-specific protein, Pax-5, also designated B cell specific activator protein or BSAP, which is expressed in pro-B, pre-B and mature B lymphocytes but not in plasma cells. Pax-5 functions to regulate not only B cell development, but also influences the balance between immunoglobulin secretion and B cell proliferation. Overexpression of Pax-5 has been implicated in cellular transformation, and in the case of small lymphocytic lymphomas with plasmacytoid differentiation, a t(9;14)(p13;q32) translocation resulting in the deregulation of PAX5 gene expression has been detected.

REFERENCES

1. Adams, B., et al. 1992. Pax-5 encodes the transcription factor BSAP and is expressed in B lymphocytes, the developing CNS and adult testis. Genes Dev. 6: 1589-1607.
2. Stapleton, P., et al. 1993. Chromosomal localization of seven Pax genes and cloning of a novel family member, Pax-9. Nat. Genet. 3: 292-298.
3. Busslinger, M., et al. 1995. The role of BSAP (Pax-5) in B cell development. Curr. Opin. Genet. Dev. 5: 595-601.
4. Busslinger, M., et al. 1996. Deregulation of Pax-5 by translocation of the Emu enhancer of the IgH locus adjacent to two alternative Pax-5 promoters in a diffuse large-cell lymphoma. Proc. Natl. Acad. Sci. USA 93: 6129-6134.
5. Dorfler, P., et al. 1996. C-terminal activating and inhibitory domains determine the transactivation potential of BSAP (Pax-5), Pax-2 and Pax-8. EMBO J. 15: 1971-1982.
6. Mahmoud, M.S., et al. 1996. Altered expression of Pax-5 gene in human myeloma cells. Blood 87: 4311-4315.
7. Michaelson, J.S., et al. 1996. B cell lineage-specific activator protein (BSAP). A player at multiple stages of B cell development. J. Immunol. 156: 2349-2351.

CHROMOSOMAL LOCATION

Genetic locus: PAX5 (human) mapping to 9p13.2.

PRODUCT

Pax-5 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-5 shRNA Plasmid (h): sc-36193-SH and Pax-5 shRNA (h) Lentiviral Particles: sc-36193-V as alternate gene silencing products.

For independent verification of Pax-5 (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-36193A, sc-36193B and sc-36193C.

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-5 siRNA (h) is recommended for the inhibition of Pax-5 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-5 (A-11): sc-13146 is recommended as a control antibody for monitoring of Pax-5 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-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (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-5 gene expression knockdown using RT-PCR Primer: Pax-5 (h)-PR: sc-36193-PR (20 µl, 312 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.