

HSPC144 siRNA (m): sc-146107

BACKGROUND

HSPC144, also known as THYN1 (thymocyte nuclear protein 1), THY28 or My0054, is a 225 amino acid nuclear protein that may be involved in the induction of apoptosis. Existing as two alternatively spliced isoforms, the gene encoding HSPC144 is highly conserved among vertebrates and maps to human chromosome 11q25 and mouse chromosome 9 A4. Human chromosome 11 comprises approximately 4% of human genomic DNA and is considered a gene and disease association dense chromosome. The blood disorders Sickle cell anemia and thalassemia are caused by HBB gene mutations, while Wilms' tumors, WAGR syndrome and Denys-Drash syndrome are associated with mutations of the WT1 gene. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are also associated with defects in chromosome 11-encoded genes.

REFERENCES

1. Fabiani, J.E., Avigliano, A., Dupont, J.C. and Fabiana, J.E. 2000. Hereditary angioedema. Long-term follow-up of 88 patients. Experience of the Argentine Allergy and Immunology Institute. *Allergol. Immunopathol.* 28: 267-271.
2. Jira, P.E., Waterham, H.R., Wanders, R.J., Smeitink, J.A., Sengers, R.C. and Wevers, R.A. 2003. Smith-Lemli-Opitz syndrome and the DHCR7 gene. *Ann. Hum. Genet.* 67: 269-280.
3. Jiang, X.Z., Toyota, H., Yoshimoto, T., Takada, E., Asakura, H. and Mizuguchi, J. 2003. Anti-IgM-induced down-regulation of nuclear Thy28 protein expression in Ramos B lymphoma cells. *Apoptosis* 8: 509-519.
4. Jiang, X., Toyota, H., Takada, E., Yoshimoto, T., Kitamura, T., Yamada, J. and Mizuguchi, J. 2003. Modulation of mThy28 nuclear protein expression during thymocyte development. *Tissue Cell* 35: 471-478.
5. Song, A.X., Chang, Y.G., Gao, Y.G., Lin, X.J., Shi, Y.H., Lin, D.H., Hang, Q.H. and Hu, H.Y. 2005. Identification, expression, and purification of a unique stable domain from human HSPC144 protein. *Protein Expr. Purif.* 42: 146-152.
6. Shi, Y.H., Song, A.X., Chang, Y.G., Hu, H.Y. and Lin, D.H. 2006. ¹H, ¹³C and ¹⁵N backbone resonance assignments of the DUF589 domain from human HSPC144 protein. *J. Biomol. NMR* 1: 57.
7. Schuchman, E.H. 2007. The pathogenesis and treatment of acid sphingomyelinase-deficient Niemann-Pick disease. *J. Inherit. Metab. Dis.* 30: 654-663.
8. Siem, G., Früh, A., Leren, T.P., Heimdal, K., Teig, E. and Harris, S. 2008. Jervell and Lange-Nielsen syndrome in Norwegian children: aspects around cochlear implantation, hearing, and balance. *Ear Hear.* 29: 261-269.
9. Bhuiyan, Z.A., Momenah, T.S., Amin, A.S., Al-Khadra, A.S., Alders, M., Wilde, A.A. and Mannens, M.M. 2008. An intronic mutation leading to incomplete skipping of exon-2 in KCNQ1 rescues hearing in Jervell and Lange-Nielsen syndrome. *Prog. Biophys. Mol. Biol.* 98: 319-327.

CHROMOSOMAL LOCATION

Genetic locus: Thyn1 (mouse) mapping to 9 A4.

PRODUCT

HSPC144 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HSPC144 shRNA Plasmid (m): sc-146107-SH and HSPC144 shRNA (m) Lentiviral Particles: sc-146107-V as alternate gene silencing products.

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

APPLICATIONS

HSPC144 siRNA (m) is recommended for the inhibition of HSPC144 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 μ M in 66 μ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HSPC144 gene expression knockdown using RT-PCR Primer: HSPC144 (m)-PR: sc-146107-PR (20 μ l). 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.