SANTA CRUZ BIOTECHNOLOGY, INC.

PIH1D2 siRNA (h): sc-96647

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PIH1D2 (PIH1 domain containing 2) is a 315 amino acid protein that belongs to the PIH1 family. Encoded by a gene that maps to human chromosome 11q23.1, PIH1D2 is one of five genes included in a novel germline SDHD deletion that is linked to an unusual sympathetic head and neck paraganglioma, a rare tumor arising either from sympathetic or parasympathetic-associated chromaffin tissue. With approximately 135 million base pairs and 1,400 genes, chromosome 11 makes up approximately 4% of human genomic DNA. Ataxia-telangiectasia, the blood disorders Sickle cell anemia and β thalassemia, Wilms' tumors, WAGR syndrome, Denys-Drash syndrome, Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are all associated with defects in chromosome 11.

REFERENCES

1. Zehelein, J., Kathoefer, S., Khalil, M., Alter, M., Thomas, D., Brockmeier, K., Ulmer, H.E., Katus, H.A. and Koenen, M. 2006. Skipping of Exon 1 in the KCNQ1 gene causes Jervell and Lange-Nielsen syndrome. J. Biol. Chem. 281: 35397-35403.
2. Taylor, T.D., Noguchi, H., Totoki, Y., Toyoda, A., Kuroki, Y., Dewar, K., Lloyd, C., Itoh, T., Takeda, T., Kim, D.W., She, X., Barlow, K.F., Bloom, T., Bruford, E., Chang, J.L., Cuomo, C.A., Eichler, E., FitzGerald, M.G., Jaffe, D.B., et al. 2006. Human chromosome 11 DNA sequence and analysis including novel gene identification. Nature 440: 497-500.
3 Ataga, K.I., Cappellini, M.D. and Rachmilewitz, E.A. 2007. β-thalassaemia and sickle cell anaemia as paradigms of hypercoagulability. Br. J. Haematol. 139: 3-13.
4. Berger, A.C., Salazar, G., Styers, M.L., Newell-Litwa, K.A., Werner, E., Maue, R.A., Corbett, A.H. and Faundez, V. 2007. The subcellular localization of the Niemann-Pick Type C proteins depends on the adaptor complex AP-3. J. Cell Sci. 120: 3640-3652.
5. O'Connor, M.J., Martin, N.M. and Smith, G.C. 2007. Targeted cancer therapies based on the inhibition of DNA strand break repair. Oncogene 26: 7816-7824.
6. Kaste, S.C., Dome, J.S., Babyn, P.S., Graf, N.M., Grundy, P., Godzinski, J., Levitt, G.A. and Jenkinson, H. 2008. Wilms tumour: prognostic factors, staging, therapy and late effects. Pediatr. Radiol. 38: 2-17.
7. Cloutier, P. and Coulombe, B. 2010. New insights into the biogenesis of nuclear RNA polymerases? Biochem. Cell Biol. 88: 211-221.

CHROMOSOMAL LOCATION

Genetic locus: PIH1D2 (human) mapping to 11q23.1.

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.

PRODUCT

PIH1D2 siRNA (h) is a pool of 2 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 PIH1D2 shRNA Plasmid (h): sc-96647-SH and PIH1D2 shRNA (h) Lentiviral Particles: sc-96647-V as alternate gene silencing products.

For independent verification of PIH1D2 (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-96647A and sc-96647B.

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

PIH1D2 siRNA (h) is recommended for the inhibition of PIH1D2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PIH1D2 gene expression knockdown using RT-PCR Primer: PIH1D2 (h)-PR: sc-96647-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.