SANTA CRUZ BIOTECHNOLOGY, INC.

YTHDC2 siRNA (m): sc-155422

BACKGROUND

YTHDC2 (YTH domain containing 2), also known as probable ATP-dependent RNA helicase YTHDC2, is a 1,430 amino acid protein. Belonging to the DEAD box helicase family and DEAH subfamily, YTHDC2 contains two ANK repeats, a helicase ATP-binding domain, helicase C-terminal domain, R3H domain and a YTH domain, a potential RNA binding domain. The gene encoding YTHDC2 maps to human chromosome 5q22.2 and mouse chromosome 18 B3. With 181 million base pairs encoding around 1,000 genes, chromosome 5 make up approximately 6% of human genomic DNA. Chromosome 5 is associated with Cockayne syndrome through the ERCC8 gene and familial adenomatous polyposis through the adenomatous polyposis coli (APC) tumor suppressor gene. Treacher Collins syndrome is also chromosome 5 associated and is caused by insertions or deletions within the TCOF1 gene.

REFERENCES

1. Edwards, S.J., Gladwin, A.J. and Dixon, M.J. 1997. The mutational spectrum in Treacher Collins syndrome reveals a predominance of mutations that create a premature-termination codon. Am. J. Hum. Genet. 60: 515-524.
2. McDaniel, L.D., Legerski, R., Lehmann, A.R., Friedberg, E.C. and Schultz, R.A. 1997. Confirmation of homozygosity for a single nucleotide substitution mutation in a Cockayne syndrome patient using monoallelic mutation analysis in somatic cell hybrids. Hum. Mutat. 10: 317-321.
3. Schmutz, J., Martin, J., Terry, A., Couronne, O., Grimwood, J., Lowry, S., Gordon, L.A., Scott, D., Xie, G., Huang, W., Hellsten, U., Tran-Gyamfi, M., She, X., Prabhakar, S., Aerts, A., Altherr, M., Bajorek, E., et al. 2004. The DNA sequence and comparative analysis of human chromosome 5. Nature 431: 268-274.
4. Finch, R., Moore, H.G., Lindor, N., Jalal, S.M., Markowitz, A., Suresh, J., Offit, K. and Guillem, J.G. 2005. Familial adenomatous polyposis and mental retardation caused by a *de novo* chromosomal deletion at 5q15-q22: report of a case. Dis. Colon Rectum 48: 2148-2152.
5. Anindya, R., Aygün, O. and Svejstrup, J.Q. 2007. Damage-induced ubiquitylation of human RNA polymerase II by the ubiquitin ligase Nedd4, but not Cockayne syndrome proteins or BRCA1. Mol. Cell 28: 386-397.
6. Tsai, Y.C., Greco, T.M., Boonmee, A., Miteva, Y. and Cristea, I.M. 2012. Functional proteomics establishes the interaction of SIRT7 with chromatin remodeling complexes and expands its role in regulation of RNA polymerase I transcription. Mol. Cell. Proteomics 11: 60-76.

CHROMOSOMAL LOCATION

Genetic locus: Ythdc2 (mouse) mapping to 18 B3.

PRODUCT

YTHDC2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see YTHDC2 shRNA Plasmid (m): sc-155422-SH and YTHDC2 shRNA (m) Lentiviral Particles: sc-155422-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 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

YTHDC2 siRNA (m) is recommended for the inhibition of YTHDC2 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 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 YTHDC2 gene expression knockdown using RT-PCR Primer: YTHDC2 (m)-PR: sc-155422-PR (20 µl). 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.