

# YTHDF2 siRNA (m): sc-155424

## BACKGROUND

The YTH domain family protein family (YTHDF) includes YTHDF1, YTHDF2 and YTHDF3. YTHDF2 (YTH domain family, member 2), also designated high-glucose-regulated protein 8, CLL-associated antigen KW-14 or renal carcinoma antigen NY-REN-2, is a 579 amino acid protein that also contains one YTH domain and exists as two alternatively spliced isoforms. Expressed in pancreas, testis and placenta, YTHDF2 has been identified as a translocation partner gene for RUNX1 and is encoded by a gene mapping to human chromosome 1p35.3. Human chromosome 1 spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome.

## REFERENCES

1. Eudy, J.D., et al. 1998. Mutation of a gene encoding a protein with extra-cellular matrix motifs in Usher syndrome type IIa. *Science* 280: 1753-1757.
2. Bonafè, M., et al. 2001. Increase of homozygosity in centenarians revealed by a new inter-Alu PCR technique. *Exp. Gerontol.* 36: 1063-1073.
3. Tayebi, N., et al. 2001. Gaucher disease and parkinsonism: a phenotypic and genotypic characterization. *Mol. Genet. Metab.* 73: 313-321.
4. Plasilova, M., et al. 2004. Exclusion of an extracolonic disease modifier locus on chromosome 1p33-36 in a large Swiss familial adenomatous polyposis kindred. *Eur. J. Hum. Genet.* 12: 365-371.
5. Nguyen, T.T., et al. 2006. Identification of novel RUNX1 (AML1) translocation partner genes SH3D19, YTHDF2, and ZNF687 in acute myeloid leukemia. *Genes Chromosomes Cancer* 45: 918-932.
6. Cardelli, M., et al. 2006. A polymorphism of the YTHDF2 gene (1p35) located in an Alu-rich genomic domain is associated with human longevity. *J. Gerontol. A Biol. Sci. Med. Sci.* 61: 547-556.
7. Betarbet, R., et al. 2008. Fas-associated factor 1 and Parkinson's disease. *Neurobiol. Dis.* 31: 309-315.

## CHROMOSOMAL LOCATION

Genetic locus: Ythdf2 (mouse) mapping to 4 D2.3.

## PRODUCT

YTHDF2 siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see YTHDF2 shRNA Plasmid (m): sc-155424-SH and YTHDF2 shRNA (m) Lentiviral Particles: sc-155424-V as alternate gene silencing products.

For independent verification of YTHDF2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-155424A, sc-155424B and sc-155424C.

## RESEARCH USE

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

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

## APPLICATIONS

YTHDF2 siRNA (m) is recommended for the inhibition of YTHDF2 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  $\mu$ M in 66  $\mu$ 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 YTHDF2 gene expression knockdown using RT-PCR Primer: YTHDF2 (m)-PR: sc-155424-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Qian, B., et al. 2021. m<sup>6</sup>A modification promotes miR-133a repression during cardiac development and hypertrophy via IGF2BP2. *Cell Death Discov.* 7: 157.
2. Liu, S., et al. 2021. Fat mass and obesity-associated protein regulates RNA methylation associated with depression-like behavior in mice. *Nat. Commun.* 12: 6937.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.