

# DIS3 siRNA (h): sc-105297

## BACKGROUND

The exosome is a multi-protein complex composed of several highly conserved subunits, some of which are 3' to 5' exoribonucleases. The complex is involved in a variety of cellular processes and is responsible for degrading unstable mRNAs that contain AU-rich elements (AREs) in their untranslated 3' regions. DIS3, also known as RRP44, is a 958 amino acid protein that localizes to both the cytoplasm and the nucleus and contains one PINc domain. Widely expressed with highest expression in testis, DIS3 functions as a component of the exosome exoribonuclease complex and is required for processing of 7S pre-rRNA into a mature nuclear complex and, ultimately, for proper mitotic progression. Abnormal expression levels of DIS3 may be associated with colon cancer, suggesting a role for DIS3 in tumorigenesis. Multiple isoforms of DIS3 exist due to alternative splicing events.

## REFERENCES

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4. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607533. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
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7. Murakami, H., et al. 2007. Ribonuclease activity of DIS3 is required for mitotic progression and provides a possible link between heterochromatin and kinetochore function. *PLoS ONE* 2: e317.
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## CHROMOSOMAL LOCATION

Genetic locus: DIS3 (human) mapping to 13q22.1.

## PRODUCT

DIS3 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DIS3 shRNA Plasmid (h): sc-105297-SH and DIS3 shRNA (h) Lentiviral Particles: sc-105297-V as alternate gene silencing products.

For independent verification of DIS3 (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-105297A, sc-105297B and sc-105297C.

## 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

DIS3 siRNA (h) is recommended for the inhibition of DIS3 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  $\mu$ 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.

## GENE EXPRESSION MONITORING

DIS3 (H-3): sc-398663 is recommended as a control antibody for monitoring of DIS3 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DIS3 gene expression knockdown using RT-PCR Primer: DIS3 (h)-PR: sc-105297-PR (20  $\mu$ l, 508 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](http://www.scbt.com) for detailed protocols and support products.