



UTP18 siRNA (h): sc-93598

BACKGROUND

WD-repeats are motifs that are found in a variety of proteins and are characterized by a conserved core of 40-60 amino acids that commonly form a tertiary propeller structure. While proteins that contain WD-repeats participate in a wide range of cellular functions, they are generally involved in regulatory mechanisms concerning chromatin assembly, cell cycle control, signal transduction, RNA processing, apoptosis and vesicular trafficking. UTP18 (U3 small nucleolar RNA-associated protein 18), also known as WDR50 (WD repeat-containing protein 50), is a 556 amino acid protein that localizes to the nucleus, contains six WD repeats and is thought to be involved in the processing of pre-18S ribosomal RNA. The gene encoding UTP18 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

1. van der Voorn, L. and Ploegh, H.L. 1992. The WD-40 repeat. *FEBS Lett.* 307: 131-134.
2. Neer, E.J., Schmidt, C.J., Nambudripad, R. and Smith, T.F. 1994. The ancient regulatory-protein family of WD-repeat proteins. *Nature* 371: 297-300.
3. Garcia-Higuera, I., Fenoglio, J., Li, Y., Lewis, C., Panchenko, M.P., Reiner, O., Smith, T.F. and Neer, E.J. 1996. Folding of proteins with WD-repeats: comparison of six members of the WD-repeat superfamily to the G protein β subunit. *Biochemistry* 35: 13985-13994.
4. Garcia-Higuera, I., Gaitatzes, C., Smith, T.F. and Neer, E.J. 1998. Folding a WD repeat propeller. Role of highly conserved aspartic acid residues in the G protein β subunit and Sec13. *J. Biol. Chem.* 273: 9041-9049.
5. Smith, T.F., Gaitatzes, C., Saxena, K. and Neer, E.J. 1999. The WD repeat: a common architecture for diverse functions. *Trends Biochem. Sci.* 24: 181-185.
6. Li, D. and Roberts, R. 2001. WD-repeat proteins: structure characteristics, biological function, and their involvement in human diseases. *Cell. Mol. Life Sci.* 58: 2085-2097.
7. Bernstein, K.A., Gallagher, J.E., Mitchell, B.M., Granneman, S. and Baserga, S.J. 2004. The small-subunit processome is a ribosome assembly intermediate. *Eukaryot. Cell* 3: 1619-1626.
8. Dosil, M. and Bustelo, X.R. 2004. Functional characterization of Pwp2, a WD family protein essential for the assembly of the 90 S pre-ribosomal particle. *J. Biol. Chem.* 279: 37385-37397.
9. Champion, E.A., Lane, B.H., Jackrel, M.E., Regan, L. and Baserga, S.J. 2008. A direct interaction between the UTP6 half-a-tetratricopeptide repeat domain and a specific peptide in Utp21 is essential for efficient pre-rRNA processing. *Mol. Cell. Biol.* 28: 6547-6556.

CHROMOSOMAL LOCATION

Genetic locus: UTP18 (human) mapping to 17q21.33.

RESEARCH USE

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

PRODUCT

UTP18 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see UTP18 shRNA Plasmid (h): sc-93598-SH and UTP18 shRNA (h) Lentiviral Particles: sc-93598-V as alternate gene silencing products.

For independent verification of UTP18 (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-93598A, sc-93598B and sc-93598C.

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

UTP18 siRNA (h) is recommended for the inhibition of UTP18 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 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 UTP18 gene expression knockdown using RT-PCR Primer: UTP18 (h)-PR: sc-93598-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.