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SANTA CRUZ BIOTECHNOLOGY, INC.

WDR12 siRNA (m): sc-155257

BACKGROUND

WD repeat containing protein 12 (WDR12), also known as YTM1 homolog, is a 423 amino acid protein that localizes to the nucleus. 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. WDR12, which contains seven WD-repeats, has been characterized to form a stable complex with pescadillo and BOP1. This complex, named PeBoW, plays a critical role in the mammalian ribosome biogenesis pathway. A mutation in the gene encoding WDR12 leads to an inhibition of ribosomal RNA (rRNA) processing and triggers p53-dependent cell cycle arrest. Pescadillo, BOP1 and WDR12 expression has been shown to be upregulated by the oncogenic transcription factor c-Myc.

REFERENCES

1. Di Benedetto, A.J., et al. 2001. Cloning and molecular characterization of a novel gene encoding a WD-repeat protein expressed in restricted areas of adult rat brain. Gene 271: 21-31.
2. Nal, B., et al. 2002. Wdr12, a mouse gene encoding a novel WD-repeat protein with a notchless-like amino-terminal domain. Genomics 79: 77-86.
3. Hölzel, M., et al. 2005. Mammalian WDR12 is a novel member of the Pes1-Bop1 complex and is required for ribosome biogenesis and cell proliferation. J. Cell Biol. 170: 367-378.
4. Miles, T.D., et al. 2005. Ytm1, Nop7, and Erb1 form a complex necessary for maturation of yeast 66S preribosomes. Mol. Cell. Biol. 25: 10419-10432.
5. Grimm, T., et al. 2006. Dominant-negative Pes1 mutants inhibit ribosomal RNA processing and cell proliferation via incorporation into the PeBoW-complex. Nucleic Acids Res. 34: 3030-3043.
6. Rohrmoser, M., et al. 2007. Interdependence of Pes1, Bop1, and WDR12 controls nucleolar localization and assembly of the PeBoW complex required for maturation of the 60S ribosomal subunit. Mol. Cell. Biol. 27: 3682-3694.

CHROMOSOMAL LOCATION

Genetic locus: Wdr12 (mouse) mapping to 1 C2.

PRODUCT

WDR12 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see WDR12 shRNA Plasmid (m): sc-155257-SH and WDR12 shRNA (m) Lentiviral Particles: sc-155257-V as alternate gene silencing products.

For independent verification of WDR12 (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-155257A, sc-155257B and sc-155257C.

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

WDR12 siRNA (m) is recommended for the inhibition of WDR12 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 WDR12 gene expression knockdown using RT-PCR Primer: WDR12 (m)-PR: sc-155257-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.