SANTA CRUZ BIOTECHNOLOGY, INC.

BOP1 siRNA (m): sc-141727

BACKGROUND

Predominantly localized to the nucleolus, BOP1 (block of proliferation 1 protein) is a 746 amino acid highly conserved non-ribosomal protein that is involved in ribosome biogenesis. Truncation of the amino terminus of BOP1 leads to cell growth arrest in the G_1 phase and specific inhibition of 28S and 5.8S rRNA synthesis, as well as a deficit in the cytosolic 60S ribosomal subunit. This suggests that BOP1 is involved in the formation of mature rRNAs and in the biogenesis of the 60S ribosomal subunit. BOP1 physically interacts with pescadillo (a protein involved in cell proliferation) and enables efficient incorporation of pescadillo into the nucleolar preribosomal complexes, thereby affecting rRNA maturation and the cell cycle. The BOP1-pescadillo complex is also necessary for biogenesis of 60S ribosomal subunits. Deregulation of BOP1 may lead to colorectal tumorigenesis.

REFERENCES

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2. Pestov, D.G., et al. 2001. Evidence of p53-dependent cross-talk between ribosome biogenesis and the cell cycle: effects of nucleolar protein BOP1 on G_1/S transition. Mol. Cell. Biol. 21: 4246-4255.
3. Pestov, D.G., et al. 2001. ERB1, the yeast homolog of mammalian BOP1, is an essential gene required for maturation of the 25S and 5.8S ribosomal RNAs. Nucleic Acids Res. 29: 3621-3630.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610596. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Lapik, Y.R., et al. 2004. Physical and functional interaction between Pes1 and BOP1 in mammalian ribosome biogenesis. Mol. Cell 15: 17-29.
6. 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.
7. Killian, A., et al. 2006. Contribution of the BOP1 gene, located on 8q24, to colorectal tumorigenesis. Genes Chromosomes Cancer 45: 874-881.

CHROMOSOMAL LOCATION

Genetic locus: Bop1 (mouse) mapping to 15 D3.

PRODUCT

BOP1 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 BOP1 shRNA Plasmid (m): sc-141727-SH and BOP1 shRNA (m) Lentiviral Particles: sc-141727-V as alternate gene silencing products.

For independent verification of BOP1 (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-141727A, sc-141727B and sc-141727C.

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

BOP1 siRNA (m) is recommended for the inhibition of BOP1 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 BOP1 gene expression knockdown using RT-PCR Primer: BOP1 (m)-PR: sc-141727-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.