

MOD5 siRNA (h): sc-62631

BACKGROUND

MOD5, also known as TRIT1 (tRNA isopentenyltransferase 1), IPT (isopentenyl-diphosphate:tRNA isopentenyltransferase) or hGRO1, is a 467 amino acid protein belonging to the IPP transferase family. Containing one matrin-type zinc finger, MOD5 assists in the formation of N⁶-(dimethylallyl)adenosine (i⁶A) by catalyzing the transfer of a dimethylallyl group onto the adenine 37 of cytosolic and mitochondrial tRNAs. MOD5 exists as five alternatively spliced isoforms, and is encoded by a gene mapping to human chromosome 1p34.2 and mouse chromosome 4 D2.2. Chromosome 1 is the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome. There are about 3,000 genes on chromosome 1, and considering the great number of genes there are also a large number of diseases associated with chromosome 1. The rare aging disease Hutchinson-Gilford progeria, Stickler syndrome, Parkinsons, Gaucher disease and Usher syndrome are also associated with chromosome 1.

REFERENCES

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3. Weise, A., et al. 2005. New insights into the evolution of chromosome 1. *Cytogenet. Genome Res.* 108: 217-222.
4. Lans, H. and Hoeijmakers, J.H. 2006. Cell biology: aging nucleus gets out of shape. *Nature* 440: 32-34.
5. Gregory, S.G., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. *Nature* 441: 315-321.
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8. McClintock, D., et al. 2006. Hutchinson-Gilford progeria mutant Lamin A primarily targets human vascular cells as detected by an anti-Lamin A G608G antibody. *Proc. Natl. Acad. Sci. USA* 103: 2154-2159.

CHROMOSOMAL LOCATION

Genetic locus: TRIT1 (human) mapping to 1p34.2.

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.

PRODUCT

MOD5 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 MOD5 shRNA Plasmid (h): sc-62631-SH and MOD5 shRNA (h) Lentiviral Particles: sc-62631-V as alternate gene silencing products.

For independent verification of MOD5 (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-62631A, sc-62631B and sc-62631C.

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

MOD5 siRNA (h) is recommended for the inhibition of MOD5 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 MOD5 gene expression knockdown using RT-PCR Primer: MOD5 (h)-PR: sc-62631-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.