SANTA CRUZ BIOTECHNOLOGY, INC.

RNase 4 siRNA (h): sc-92305

BACKGROUND

RNase 4 and RNase 5/Ang1 are unique among the RNase A ribonuclease genes in that they maintain a complex gene locus that is conserved across species with transcription initiated from tissue-specific dual promoters followed by differential exon splicing. Rnase4 (ribonuclease, RNase A family 4) gene can produce two transcripts both encoding 148 amino acid proteins. Rnase 4 is a member of the pancreatic-type of secretory ribonucleases, a subset of the ribonuclease A superfamily. RNase 4 prefers poly(C) as a substrate and hydrolyzes 2',3'-cyclic nucleotides, with a pH optimum near 8.0. mRNA en-coding RNase 4 is detectable in human pancreas, lung, skeletal muscle, heart, kidney and placenta; liver represents the most abundant source.

REFERENCES

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2. Mizuta, K., et al. 1990. Purification and characterization of three ribonucleases from human kidney: comparison with urine ribonucleases. Arch. Biochem. Biophys. 281: 144-151.
3. Haugg, M. and Schein, C.H. 1992. The DNA sequences of the human and hamster secretory ribonucleases determined with the polymerase chain reaction (PCR). Nucleic Acids Res. 20: 612-612.
4. Sakakibara, R., et al. 1992. Character-ization of a unique nonsecretory ribonuclease from urine of pregnant women. J. Biochem. 111: 325-330.
5. Rodríguez, M., et al. 2006. A cytotoxic ribonuclease variant with a discontinuous nuclear localization signal constituted by basic residues scattered over three areas of the molecule. J. Mol. Biol. 360: 548-557.
6. Schienman, J.E., et al. 2006. Duplication and divergence of 2 distinct pancreatic ribonuclease genes in leaf-eating African and Asian colobine monkeys. Mol. Biol. Evol. 23: 1465-1479.

CHROMOSOMAL LOCATION

Genetic locus: RNASE4 (human) mapping to 14q11.2.

PRODUCT

RNase 4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RNase 4 shRNA Plasmid (h): sc-92305-SH and RNase 4 shRNA (h) Lentiviral Particles: sc-92305-V as alternate gene silencing products.

For independent verification of RNase 4 (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-92305A, sc-92305B and sc-92305C.

PROTOCOLS

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

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

RNase 4 siRNA (h) is recommended for the inhibition of RNase 4 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 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 RNase 4 gene expression knockdown using RT-PCR Primer: RNase 4 (h)-PR: sc-92305-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.