SANTA CRUZ BIOTECHNOLOGY, INC.

RNase 1 siRNA (h): sc-39300

BACKGROUND

RNase1 (ribonuclease, RNase A family, 1 (pancreatic), Rib1) gene encodes a 156 amino acid member of the pancreatic-type of secretory ribonucleases, a subset of the ribonuclease A superfamily. RNase 1 endonuclease cleaves internal phosphodiester RNA bonds on the 3'-side of pyrimidine bases. RNase 1 prefers poly(C) as a substrate and hydrolyzes 2',3'-cyclic nucleotides, with a pH optimum near 8.0. RNase 1 is monomeric and more commonly acts to degrade ds-RNA over ss-RNA. RNase1 is a digestive enzyme that has been recognized to be one of the most attractive model systems for molecular evolutionary studies. The RNase1 gene is conserved in chimpanzee, canine, bovine, mouse and rat, and maps to human chromosome 14q11.2, where it is linked to seven other RNase A superfamily genes. The entire RNase A cluster spans 368 kb.

REFERENCES

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8. 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: RNASE1 (human) mapping to 14q11.2.

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

RNase 1 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 1 shRNA Plasmid (h): sc-39300-SH and RNase 1 shRNA (h) Lentiviral Particles: sc-39300-V as alternate gene silencing products.

For independent verification of RNase 1 (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-39300A, sc-39300B and sc-39300C.

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 1 siRNA (h) is recommended for the inhibition of RNase 1 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 1 gene expression knockdown using RT-PCR Primer: RNase 1 (h)-PR: sc-39300-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.