SANTA CRUZ BIOTECHNOLOGY, INC.

RNase 6 siRNA (m): sc-152992

BACKGROUND

RNase 6 (ribonuclease K6) is a 150 amino acid ribonuclease that belongs to the pancreatic ribonuclease family, which itself is included in the RNase A superfamily. Gene products belonging to the Ribonuclease A superfamily are pancreatic ribonucleases that cleave single-stranded RNA. RNase 6 is a secreted protein that likely plays a role in host immunological defense. RNase 6 shows strong expression in lung, heart, placenta, kidney, pancreas, liver, brain and skeletal muscle. RNase 6 is also expressed in monocytes and neutrophils. The RNase 1 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

1. Rosenberg, H.F. and Dyer, K.D. 1996. Molecular cloning and characterization of a novel human ribonuclease (RNase k6): increasing diversity in the enlarging ribonuclease gene family. Nucleic Acids Res. 24: 3507-3513.
2. Rosenberg, H.F. 1998. The eosinophil ribonucleases. Cell. Mol. Life Sci. 54: 795-803.
3. Deming, M.S., Dyer, K.D., Bankier, A.T., Piper, M.B., Dear, P.H. and Rosenberg, H.F. 1998. Ribonuclease K6: chromosomal mapping and divergent rates of evolution within the RNase A gene superfamily. Genome Res. 8: 599-607.
4. Domachowske, J.B., Dyer, K.D., Adams, A.G., Leto, T.L. and Rosenberg, H.F. 1998. Eosinophil cationic protein/RNase 3 is another RNase A-family ribonuclease with direct antiviral activity. Nucleic Acids Res. 26: 3358-3363.
5. Domachowske, J.B., Bonville, C.A., Dyer, K.D. and Rosenberg, H.F. 1998. Evolution of antiviral activity in the ribonuclease A gene superfamily: evidence for a specific interaction between eosinophil-derived neurotoxin (EDN/RNase 2) and respiratory syncytial virus. Nucleic Acids Res. 26: 5327-5332.
6. Pietrowski, D. and Förster, M. 2000. Complete cDNA sequence and amino acid analysis of a bovine ribonuclease K6 gene. DNA Seq. 11: 365-371.
7. Bai, X., Liang, Z., Zhao, S., Liu, X., Zhu, M., Wu, Z. and Yu, M. 2009. The porcine ANG, RNASE1 and RNASE6 genes: molecular cloning, polymorphism detection and the association with haematological parameters. Mol. Biol. Rep. 36: 2405-2411.

CHROMOSOMAL LOCATION

Genetic locus: Rnase6 (mouse) mapping to 14 C1.

PRODUCT

RNase 6 siRNA (m) is a target-specific 19-25 nt siRNA 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 6 shRNA Plasmid (m): sc-152992-SH and RNase 6 shRNA (m) Lentiviral Particles: sc-152992-V as alternate gene silencing 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 6 siRNA (m) is recommended for the inhibition of RNase 6 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 RNase 6 gene expression knockdown using RT-PCR Primer: RNase 6 (m)-PR: sc-152992-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Fang, Y., Li, J., Niu, X., Ma, N. and Zhao, J. 2021. Hypomethylation of Rnase6 promoter enhances proliferation and migration of murine aortic vascular smooth muscle cells and aggravates atherosclerosis in mice. Front. Bioeng. Biotechnol. 9: 695461.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROPROTOCOLS

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