

RNase 12 siRNA (m): sc-152990

BACKGROUND

RNase 12 (ribonuclease-like protein 12) is a 147 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 12 is a secreted protein that likely plays a role in host immunological defense. RNase 12 shows strong expression in lung, heart, placenta, kidney, pancreas, liver, brain and skeletal muscle. RNase 12 is also expressed in monocytes and neutrophils. The RNase 12 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. Heilig, R., Eckenberg, R., Petit, J.L., Fonknechten, N., Da Silva, C., Cattolico, L., Levy, M., Barbe, V., de Berardinis, V., Ureta-Vidal, A., Pelletier, E., Vico, V., Anthouard, V., Rowen, L., Madan, A., et al. 2003. The DNA sequence and analysis of human chromosome 14. *Nature* 421: 601-607.
2. Godbolt, A.K., Beck, J.A., Collinge, J., Garrard, P., Warren, J.D., Fox, N.C. and Rossor, M.N. 2004. A presenilin 1 R278L mutation presenting with language impairment. *Neurology* 63: 1702-1704.
3. Cho, S., Beintema, J.J. and Zhang, J. 2005. The ribonuclease A superfamily of mammals and birds: identifying new members and tracing evolutionary histories. *Genomics* 85: 208-220.
4. Stolk, J., Seersholm, N. and Kalsheker, N. 2006. α 1-antitrypsin deficiency: current perspective on research, diagnosis, and management. *Int. J. Chron. Obstruct. Pulmon. Dis.* 1: 151-160.
5. Martín-Subero, J.I., Ibbotson, R., Klapper, W., Michaux, L., Callet-Bauchu, E., Berger, F., Calasanz, M.J., De Wolf-Peeters, C., Dyer, M.J., Felman, P., Gardiner, A., Gascoyne, R.D., Gesk, S., Harder, L., Horsman, D.E., et al. 2007. A comprehensive genetic and histopathologic analysis identifies two subgroups of B-cell malignancies carrying a t(14;19)(q32;q13) or variant BCL3-translocation. *Leukemia* 21: 1532-1544.
6. Cruz, P.E., Mueller, C. and Flotte, T.R. 2007. The promise of gene therapy for the treatment of α 1-antitrypsin deficiency. *Pharmacogenomics* 8: 1191-1198.
7. Micci, F., Panagopoulos, I., Tjonnfjord, G.E., Kolstad, A., Delabie, J., Beiske, K. and Heim, S. 2007. Molecular cytogenetic characterization of t(14;19)(q32;p13), a new recurrent translocation in B cell malignancies. *Virchows Arch.* 450: 559-565.
8. Watanabe, M., Yamamoto, T., Yamamoto, A., Obana, E., Niiyama, K., Hada, T., Ooie, T., Kataoka, M., Hori, T., Houchi, H. and Shinohara, Y. 2011. Differential effects of cold exposure on gene expression profiles in white versus brown adipose tissue. *Appl. Biochem. Biotechnol.* 165: 538-547.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Rnase12 (mouse) mapping to 14 C1.

PRODUCT

RNase 12 siRNA (m) is a pool of 2 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 RNase 12 shRNA Plasmid (m): sc-152990-SH and RNase 12 shRNA (m) Lentiviral Particles: sc-152990-V as alternate gene silencing products.

For independent verification of RNase 12 (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-152990A and sc-152990B.

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

RNase 12 siRNA (m) is recommended for the inhibition of RNase 12 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 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.

RESEARCH USE

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