SANTA CRUZ BIOTECHNOLOGY, INC.

Polyserase-1 siRNA (m): sc-76196

BACKGROUND

Polyserase-1, also known as TMPRSS9 (transmembrane protease, serine 9), is a 1,059 amino acid single-pass type II membrane protein that contains one LDL-receptor class A domain and three peptidase S_1 domains. Expressed in both fetal and human brain, kidney, liver and lung, Polyserase-1 exists as a precursor that is cleaved into three functional chains, designated Serase-1, Serase-2 and Serase-3, the first two of which function as serine proteases that hydrolyze specific peptides residues. Although the three chains may exist independently, they may also be linked via disulfide bonds and are subject to functional inhibition by PMSF and 4-(2-aminoethyl) benzenesulfonyl fluoride, both of which are serine protease inhibitors. Human Polyserase-1 shares 80% sequence identity with its mouse counterpart, suggesting a conserved role between species.

REFERENCES

1. Del Rosso, M., et al. 2002. Multiple pathways of cell invasion are regulated by multiple families of serine proteases. Clin. Exp. Metastasis 19: 193-207.
2. Cal, S., et al. 2003. Polyserase-I, a human polyprotease with the ability to generate independent serine protease domains from a single translation product. Proc. Natl. Acad. Sci. USA 100: 9185-9190.
3. Okumura, Y., et al. 2006. Serase-1B, a new splice variant of Polyserase-1/TMPRSS9, activates urokinase-type plasminogen activator and the proteolytic activation is negatively regulated by glycosaminoglycans. Biochem. J. 400: 551-561.
4. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610477. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Qiu, D., et al. 2007. Roles and regulation of membrane-associated serine proteases. Biochem. Soc. Trans. 35: 583-587.
6. Hayama, M., et al. 2007. Identification and analysis of the promoter region of the type II transmembrane serine protease Polyserase-1 and its transcript variants. Biol. Chem. 388: 853-858.

CHROMOSOMAL LOCATION

Genetic locus: Tmprss9 (mouse) mapping to 10 C1.

PRODUCT

Polyserase-1 siRNA (m) 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 Polyserase-1 shRNA Plasmid (m): sc-76196-SH and Polyserase-1 shRNA (m) Lentiviral Particles: sc-76196-V as alternate gene silencing products.

For independent verification of Polyserase-1 (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-76196A, sc-76196B and sc-76196C.

RESEARCH USE

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

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

Polyserase-1 siRNA (m) is recommended for the inhibition of Polyserase-1 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 Polyserase-1 gene expression knockdown using RT-PCR Primer: Polyserase-1 (m)-PR: sc-76196-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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