SANTA CRUZ BIOTECHNOLOGY, INC.

PC7/8 siRNA (m): sc-40889

BACKGROUND

The subtilisin-like prohormone convertase (PC) family mediates the cleavage of latent precursor proteins into their biologically active forms. This is a tightly regulated process that leads to the generation of various active peptides and proteins, including neuropeptides, polypeptide hormones, protein tyrosine phosphatases, growth factors and their receptors, and enzymes such as matrix metalloproteases (MMPs). These processing reactions occur at pairs of basic amino acids. The members of the PC family include furin, PC1/3, PC2, PACE4, PC5/6 and PC7/8 (also designated lymphoma proprotein convertase or LPC), all of which share homology to the bacterial subtilisin and yeast kexin families of endoproteases. The human PC7/8 gene maps to chromosome 11q23-24 and encodes a protein that is widely expressed in many tissues, including skin, stomach, skeletal muscle, ovary, testis, colon and lymphoid-associated tissues. PC7/8 is expressed as a precursor protein that is cleaved into a mature form and, to a lesser extent, a carboxy-terminal truncated form. Proteins processed by PC7/8 include proparathyroid hormone (proPTH) and gp160.

REFERENCES

1. Bruzzaniti, A., et al. 1996. PC8, a new member of the convertase family. Biochem. J. 314: 727-731.
2. Seidah, N.G., et al. 1996. cDNA structure, tissue distribution, and chromosomal localization of rat PC7, a novel mammalian proprotein convertase closest to yeast kexin-like proteinases. Proc. Natl. Acad. Sci. USA 93: 3388-3393.
3. Munzer, J.S., et al. 1997. *In vitro* characterization of the novel proprotein convertase PC7. J. Biol. Chem. 272: 19672-19681.
4. Decroly, E., et al. 1997. Comparative functional role of PC7 and furin in the processing of the HIV envelope glycoprotein gp160. FEBS Lett. 405: 68-72.
5. Canaff, L., et al. 1999. Proparathyroid hormone processing by the proprotein convertase-7: comparison with furin and assessment of modulation of parathyroid convertase messenger ribonucleic acid levels by calcium and 1,25-dihydroxyvitamin D3. Endocrinology 140: 3633-3642.
6. Bassi, D.E., et al. 2000. The proprotein convertases furin and PACE4 play a significant role in tumor progression. Mol. Carcinog. 28: 63-69.

CHROMOSOMAL LOCATION

Genetic locus: Pcsk7 (mouse) mapping to 9 A5.2.

PRODUCT

PC7/8 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 PC7/8 shRNA Plasmid (m): sc-40889-SH and PC7/8 shRNA (m) Lentiviral Particles: sc-40889-V as alternate gene silencing products.

For independent verification of PC7/8 (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-40889A, sc-40889B and sc-40889C.

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

PC7/8 siRNA (m) is recommended for the inhibition of PC7/8 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 PC7/8 gene expression knockdown using RT-PCR Primer: PC7/8 (m)-PR: sc-40889-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.

PROTOCOLS

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