

PC5/6 siRNA (h): sc-40886

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, PC4, 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 PC5/6 gene maps to chromosome 9 and encodes a protein that is expressed in brain, adrenal and thyroid glands, heart, placenta, lung and testis. PC5/6 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 PC5/6 include several growth factors, adhesion molecules and extracellular matrix compounds. Specifically, PC5/6 is involved in the activation of neurotensin and neuromedin in brain.

REFERENCES

1. Mbikay, M., et al. 1995. Chromosomal assignment of the genes for proprotein convertases PC4, PC5, and PACE4 in mouse and human. *Genomics* 26: 123-129.
2. Mercure, C., et al. 1996. Prohormone convertase PC5 is a candidate processing enzyme for prorenin in the human adrenal cortex. *Hypertension* 28: 840-846.
3. Zheng, M., et al. 1997. The developmental expression in the rat CNS and peripheral tissues of proteases PC5 and PACE4 mRNAs: comparison with other proprotein processing enzymes. *Dev. Biol.* 181: 268-283.
4. Barbero, P., et al. 1998. PC5-A-mediated processing of pro-neurotensin in early compartments of the regulated secretory pathway of PC5-transfected PC12 cells. *J. Biol. Chem.* 273: 25339-25346.
5. Villeneuve, P., et al. 1999. Immunohistochemical distribution of the pro-hormone convertase PC5-A in rat brain. *Neuroscience* 92: 641-654.
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.
7. Villeneuve, P., et al. 2000. Immunohistochemical evidence for the involvement of protein convertases 5A and 2 in the processing of pro-neurotensin in rat brain. *J. Comp. Neurol.* 424: 461-475.
8. Stawowy, P., et al. 2002. Proprotein convertase PC5 regulation by PDGF-BB involves PI3-kinase/p70^{S6}-kinase activation in vascular smooth muscle cells. *Hypertension* 39: 399-404.

CHROMOSOMAL LOCATION

Genetic locus: PCSK5 (human) mapping to 9q21.13.

PROTOCOLS

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

PRODUCT

PC5/6 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PC5/6 shRNA Plasmid (h): sc-40886-SH and PC5/6 shRNA (h) Lentiviral Particles: sc-40886-V as alternate gene silencing products.

For independent verification of PC5/6 (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-40886A, sc-40886B and sc-40886C.

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

PC5/6 siRNA (h) is recommended for the inhibition of PC5/6 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PC5/6 gene expression knockdown using RT-PCR Primer: PC5/6 (h)-PR: sc-40886-PR (20 μ l). 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.