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PACE4 siRNA (h): sc-43990

BACKGROUND

The subtilisin-like prohormone convertase (PC) family mediates the cleavage of latent precursor proteins into their biologically active forms. Such proteins include neuropeptides, polypeptide hormones, protein tyrosine phosphatases, growth factors and their receptors and enzymes. 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). These proteins share a high degree of homology, but they have different expression patterns as well as substrate specificities. PACE4 is one of the neuroendocrine-specific mammalian subtilisin-related endoproteases believed to function in the secretory pathway.

REFERENCES

1. Rehemtulla, A., et al. 1993. PACE4 is a member of the mammalian propeptidase family that has overlapping but not identical substrate specificity to PACE. *Biochemistry* 32: 11586-11590.
2. Creemers, J.W., et al. 1993. Proprotein processing activity and cleavage site selectivity of the Kex2-like endoprotease PACE4. *FEBS Lett.* 336: 65-69.
3. Tsuji, A., et al. 1994. Identification of novel cDNAs encoding human kexin-like protease, PACE4 isoforms. *Biochem. Biophys. Res. Commun.* 200: 943-950.
4. Tsuji, A., et al. 1994. The tissue distribution of mRNAs for the PACE4 isoforms, kexin-like processing protease: PACE4C and PACE4D mRNAs are major transcripts among PACE4 isoforms. *Biochem. Biophys. Res. Commun.* 202: 1215-1221.

CHROMOSOMAL LOCATION

Genetic locus: PCSK6 (human) mapping to 15q26.3.

PRODUCT

PACE4 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 PACE4 shRNA Plasmid (h): sc-43990-SH and PACE4 shRNA (h) Lentiviral Particles: sc-43990-V as alternate gene silencing products.

For independent verification of PACE4 (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-43990A, sc-43990B and sc-43990C.

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

PACE4 siRNA (h) is recommended for the inhibition of PACE4 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.

GENE EXPRESSION MONITORING

PACE4 (2D6): sc-517067 is recommended as a control antibody for monitoring of PACE4 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PACE4 gene expression knockdown using RT-PCR Primer: PACE4 (h)-PR: sc-43990-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yao, Z., et al. 2015. PACE4 regulates apoptosis in human prostate cancer cells via endoplasmic reticulum stress and mitochondrial signaling pathways. *Drug Des. Dev. Ther.* 9: 5911-5923.

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.