SANTA CRUZ BIOTECHNOLOGY, INC.

β-defensin 126 siRNA (h): sc-77123

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The Power to Question

BACKGROUND

β-defensins (also designated BDs, or hBDs in human) are small cationic peptides with broad-spectrum antimicrobial activity against a variety of enveloped viruses, fungi and bacteria. Produced in mucosal epithelia and neutrophils of several species, β-defensins are developmentally regulated. The family of β-defensin proteins share a common defensin-motif that is characterized by multiple cysteine residues and a highly conserved tertiary structure. Besides playing a significant role in host immune defense, many β-defensins also are involved in sperm maturation and capacitation. β-defensin 126, also known as epididymal secretory protein 13.2, is a 111 amino acid secreted protein that most likely contains a signal peptide sequence that requires cleavage by proteolytic enzymes in order to become biologically active. Originally cloned in *Macaca fascicularis*, β-defensin 126 is specifically expressed in the epididymis and is thought to play a role in sperm maturation and epididymal function.

REFERENCES

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2. Perry, A.C., et al. 1999. The novel epididymal secretory protein ESP13.2 in *Macaca fascicularis*. Biol. Reprod. 61: 965-972.
3. Jia, H.P., et al. 2001. Discovery of new human β-defensins using a genomics-based approach. Gene 263: 211-218.
4. Schutte, B.C., et al. 2002. Discovery of five conserved β-defensin gene clusters using a computational search strategy. Proc. Natl. Acad. Sci. USA 99: 2129-2133.
5. Kao, C.Y., et al. 2003. ORFeome-based search of airway epithelial cell-specific novel human β-defensin genes. Am. J. Respir. Cell. Mol. Biol. 29: 71-80.
6. Rodríguez-Jiménez, F.J., et al. 2003. Distribution of new human β-defensin genes clustered on chromosome 20 in functionally different segments of epididymis. Genomics 81: 175-183.
7. Patil, A.A., et al. 2005. Cross-species analysis of the mammalian β-defensin gene family: presence of syntenic gene clusters and preferential expression in the male reproductive tract. Physiol. Genomics 23: 5-17.
8. Radhakrishnan, Y., et al. 2005. Identification, characterization, and evolution of a primate β-defensin gene cluster. Genes Immun. 6: 203-210.
9. Kouno, T., et al. 2008. A novel β-defensin structure: a potential strategy of big defensin for overcoming resistance by Gram-positive bacteria. Biochemistry 47: 10611-10619.

CHROMOSOMAL LOCATION

Genetic locus: DEFB126 (human) mapping to 20p13.

PROTOCOLS

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

PRODUCT

β-defensin 126 siRNA (h) is a target-specific 19-25 nt siRNA 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 β-defensin 126 shRNA Plasmid (h): sc-77123-SH and β-defensin 126 shRNA (h) Lentiviral Particles: sc-77123-V as alternate gene silencing products.

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

β-defensin 126 siRNA (h) is recommended for the inhibition of β-defensin 126 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 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.

RESEARCH USE

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