SANTA CRUZ BIOTECHNOLOGY, INC.

β-defensin 4 siRNA (m): sc-40484

BACKGROUND

β-defensins (also designated BD, and hBD in human) are small cationic peptides with broad-spectrum antimicrobial activity. Produced in mucosal epithelia and neutrophils of several species, β-defensins are developmentally regulated. Unlike the other previously described human β-defensins, human β-defensin 4 (HBD-4) expression is restricted to a few tissues, with highest expression in testis. A restricted pattern is also exhibited by mouse β-defensin 4. Rat β-defensin 4 (also desiganated BD-4, RBD-4, BD-2 and RBD-2) is developmentally regulated in the lung and is predominantly expressed in the lung and, to a lesser extent, in the trachea and tongue. It exhibits a regulation pattern similar to that of specific genes involved in host defense around the time of birth. The selectivity in both expression pattern and antimicrobial activity of human β-defensin 4 suggests that it is best suited to act at the epithelial locations where it is expressed.

REFERENCES

1. McCray, P.B., Jr. and Bentley, L. 1997. Human airway epithelia express a β-defensin. Am. J. Respir. Cell Mol. Biol. 16: 343-349.
2. Liu, L., et al. 1997. The human β-defensin 1 and α-defensins are encoded by adjacent genes: two peptide families with differing disulfide topology share a common ancestry. Genomics 43: 316-320.
3. Liu, L., et al. 1998. Structure and mapping of the human β-defensin HBD-2 gene and its expression at sites of inflammation. Gene 222: 237-244.
4. Bals, R., et al. 1999. Mouse β-defensin 3 is an inducible antibicrobial peptide expressed in the epithelia of multiple genes. Infect. Immun. 67: 3542-3547.
5. Yang, D., et al. 1999. β-defensins: linking innat and adaptive immunity through dendritic and T cell CCR6. Science 286: 525-528.
6. Morrison, G.M., et al. 1999. A novel mouse β-defensin, Defb2, which is upregulated in the airways by lipopolysaccharides. FEBS Lett. 442: 112-116.

CHROMOSOMAL LOCATION

Genetic locus: Defb4 (mouse) mapping to 8 A1.3.

PRODUCT

β-defensin 4 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 β-defensin 4 shRNA Plasmid (m): sc-40484-SH and β-defensin 4 shRNA (m) Lentiviral Particles: sc-40484-V as alternate gene silencing products.

For independent verification of β-defensin 4 (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-40484A, sc-40484B and sc-40484C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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 4 siRNA (m) is recommended for the inhibition of β-defensin 4 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.

RESEARCH USE

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