SANTA CRUZ BIOTECHNOLOGY, INC.

β-defensin 1 siRNA (m): sc-40480

BACKGROUND

β-defensins (also designated BD, and HBD in human) are small cationic peptides with broad-spectrum antimicrobial activity β-defensins are involved in the resistance of epithelial surfaces, such as airway surface fluid, to microbial colonization. Produced in mucosal epithelia and neutrophils of several species, β-defensins are developmentally regulated. Human β-defensin 1 shares homology with other β-defensins from human blood filtrate and is also present in nanomolar concentrations in human plasma. In addition to the antimicrobial activity of human airway epithelia, β-defensin 1 may play a role in the mucosal defenses of the lung.

REFERENCES

1. Benesch, K.W., Raida, M., Magert, H.J., Schulz-Knappe, P. and Forssmann, W.G. 1995. hBD-1: a novel β-defensin from human plasma. FEBS Lett. 368: 331-335.
2. McCray, P.B. Jr. and Bentley, L. 1997. Human airway epithelia express a β-defensin. Am. J. Respir. Cell Mol. Biol. 16: 343-349.
3. Liu, L., Zhao, C., Heng, H.H. and Ganz, T. 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.
4. Bals, R., Wang, X., Meegalla, R.L., Wattler, S., Weiner, D.J., Nehls, M.C. and Wilson, J.M. 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., Chertov, O., Bykovskaia, S.N., Chen, Q., Buffo, M.J., Shogan, J., Anderson, M., Schroder, J.M., Wang, J.M., Howard, O.M.Z. and Oppenheim, J.J. 1999. β-defensins: linking innat and adaptive immunity through dendritic and T cell CCR6. Science 286: 525-528.

CHROMOSOMAL LOCATION

Genetic locus: Defb1 (mouse) mapping to 8 A2.

PRODUCT

β-defensin 1 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 1 shRNA Plasmid (m): sc-40480-SH and β-defensin 1 shRNA (m) Lentiviral Particles: sc-40480-V as alternate gene silencing products.

For independent verification of β-defensin 1 (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-40480A, sc-40480B and sc-40480C.

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 1 siRNA (m) is recommended for the inhibition of β-defensin 1 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 β-defensin 1 gene expression knockdown using RT-PCR Primer: β-defensin 1 (m)-PR: sc-40480-PR (20 µl, 429 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wu, M., McClellan, S.A., Barrett, R.P. and Hazlett, L.D. 2009. β-defensin-2 promotes resistance against infection with *P. aeruginosa*. J. Immunol. 182: 1609-1616.

RESEARCH USE

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