SANTA CRUZ BIOTECHNOLOGY, INC.

# β-defensin 5 siRNA (m): sc-142981

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

β-defensins (also designated BDs) are small cationic peptides that are produced in mucosal epithelia and neutrophils and are developmentally regulated. β-defensin 5, also known as DEFB105A, DEFB105B, DEFB5 or BD5, is a 78 amino acid secreted protein that is expressed specifically in testis and, like other β-defensins, exhibits anti-microbial activity. The gene encoding β-defensin 5 maps to human chromosome 8 and exists as a duplicated gene, arranged in a tail-to-tail orientation. Consisting of nearly 146 million base pairs, chromosome 8 encodes over 800 genes and is associated with a variety of diseases and malignancies. Schizophrenia, bipolar disorder, trisomy 8, Pfeiffer syndrome, congenital hypothyroidism, Waardenburg syndrome and some leukemias and lymphomas are thought to occur as a result of defects in specific genes that maps to chromosome 8.

## REFERENCES


1. Yamaguchi, Y., Nagase, T., Makita, R., Fukuhara, S., Tomita, T., Tominaga, T., Kurihara, H. and Ouchi, Y. 2002. Identification of multiple novel epididymis-specific β-defensin isoforms in humans and mice. J. Immunol. 169: 2516-2523.
2. Schutte, B.C., Mitros, J.P., Bartlett, J.A., Walters, J.D., Jia, H.P., Welsh, M.J., Casavant, T.L. and McCray, P.B. 2002. Discovery of five conserved β-defensin gene clusters using a computational search strategy. Proc. Natl. Acad. Sci. USA 99: 2129-2133.
3. Hollox, E.J., Armour, J.A. and Barber, J.C. 2003. Extensive normal copy number variation of a β-defensin antimicrobial-gene cluster. Am. J. Hum. Genet. 73: 591-600.
4. Semple, C.A., Rolfe, M. and Dorin, J.R. 2003. Duplication and selection in the evolution of primate β-defensin genes. Genome Biol. 4: R31.
5. Taudien, S., Galgoczy, P., Huse, K., Reichwald, K., Schilhabel, M., Szafranski, K., Shimizu, A., Asakawa, S., Frankish, A., Loncarevic, I.F., Shimizu, N., Siddiqui, R. and Platzer, M. 2004. Polymorphic segmental duplications at 8p23.1 challenge the determination of individual defensin gene repertoires and the assembly of a contiguous human reference sequence. BMC Genomics 5: 92.
6. Boniotto, M., Ventura, M., Eskdale, J., Crovella, S. and Gallagher, G. 2004. Evidence for duplication of the human defensin gene DEFB4 in chromosomal region 8p22-23 and implications for the analysis of SNP allele distribution. Genet. Test. 8: 325-327.
7. Patil, A.A., Cai, Y., Sang, Y., Blecha, F. and Zhang, G. 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.


## CHROMOSOMAL LOCATION

Genetic locus: Defb5 (mouse) mapping to 8 A1.3.

## PROTOCOLS

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

## PRODUCT

β-defensin 5 siRNA (m) 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 5 shRNA Plasmid (m): sc-142981-SH and β-defensin 5 shRNA (m) Lentiviral Particles: sc-142981-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 5 siRNA (m) is recommended for the inhibition of β-defensin 5 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.