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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

β-defensin 1 siRNA (h): sc-43720

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. Research indicates that human β-defensin 1 may contribute to the antimicrobial activity of airway surface fluid and may play a role in the mucosal defenses of the lung. 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., et al. 1995. hBD-1: a novel β-defensin from human plasma. *FEBS Lett.* 368: 331-335.
2. McCray, P.B., Jr., et al. 1997. Human airway epithelia express a β-defensin. *Am. J. Respir. Cell Mol. Biol.* 16: 343-349.
3. 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.
4. Morrison, G.M., et al. 1998. Mouse β-defensin 1 is a functional homolog of human β-defensin 1. *Mamm. Genome* 9: 453-457.
5. Bals, R., et al. 1999. Mouse β-defensin 3 is an inducible antibacterial peptide expressed in the epithelia of multiple genes. *Infect. Immun.* 67: 3542-3547.
6. Yang, D., et al. 1999. β-defensins: linking innate and adaptive immunity through dendritic and T cell CCR-6. *Science* 286: 525-528.
7. Tunzi, C.R., et al. 2000. β-defensin expression in human mammary gland epithelia. *Pediatr. Res.* 48: 30-35.

CHROMOSOMAL LOCATION

Genetic locus: DEF1 (human) mapping to 8p23.1.

PRODUCT

β-defensin 1 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 μM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see β-defensin 1 shRNA Plasmid (h): sc-43720-SH and β-defensin 1 shRNA (h) Lentiviral Particles: sc-43720-V as alternate gene silencing products.

For independent verification of β-defensin 1 (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-43720A, sc-43720B and sc-43720C.

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 (h) is recommended for the inhibition of β-defensin 1 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.

GENE EXPRESSION MONITORING

β-defensin 1 (M4-14b-H4): sc-65501 is recommended as a control antibody for monitoring of β-defensin 1 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).

RESEARCH USE

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