SANTA CRUZ BIOTECHNOLOGY, INC.

α-defensin 5 siRNA (h): sc-72025

BACKGROUND

Human neutrophil α-defensins (also designated HNPs) are small, cationic, cysteine-rich antimicrobial proteins that play important roles in innate immunity against infectious microbes such as bacteria, fungi and enveloped viruses. α-defensins are synthesized as inactive precursors and are activated by proteolytic cleavage by MMP-7. Paneth cells in small intestinal crypts secrete the α-defensins, which are also termed cryptidins in mice. α-defensins 5 and 6 probably contribute to innate defense of the GI mucosal surface by protecting against microbial invasion in states of intestinal inflammation.

REFERENCES

1. Ouellette, A.J., et al. 1999. Peptide localization and gene structure of cryptdin 4, a differentially expressed mouse paneth cell α-defensin. Infect. Immun. 67: 6643-6651.
2. Frye, M., et al. 2000. Expression of human α-defensin 5 (HD5) mRNA in nasal and bronchial epithelial cells. J. Clin. Pathol. 53: 770-773.
3. Ayabe, T., et al. 2002. Activation of Paneth cell α-defensins in mouse small intestine. J. Biol. Chem. 277: 5219-5228.
4. Cunliffe, R.N., et al. 2003. α-defensins in the gastrointestinal tract. Mol. Immunol. 40: 463-467.
5. Wu, Z., et al. 2003. From pro defensins to defensins: synthesis and characterization of human neutrophil pro α-defensin 1 and its mature domain. J. Pept. Res. 62: 53-62.
6. Maemoto, A., et al. 2004. Functional analysis of the α-defensin disulfide array in mouse cryptdin 4. J. Biol. Chem. 279: 44188-44196.
7. Nam, M.J., et al. 2004. Identification of α-defensin 6 as a potential biomarker in colon adenocarcinoma. J. Biol. Chem. 280: 8260-8265.
8. Wu, Z., et al. 2005. Human neutrophil α-defensin 4 inhibits HIV-1 infection *in vitro*. FEBS Lett. 579: 162-166.

CHROMOSOMAL LOCATION

Genetic locus: DEFA5 (human) mapping to 8p23.1.

PRODUCT

α-defensin 5 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 α-defensin 5 shRNA Plasmid (h): sc-72025-SH and α-defensin 5 shRNA (h) Lentiviral Particles: sc-72025-V as alternate gene silencing products.

For independent verification of α-defensin 5 (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-72025A, sc-72025B and sc-72025C.

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

α-defensin 5 siRNA (h) is recommended for the inhibition of α-defensin 5 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

α-defensin 5 (8c8): sc-53997 is recommended as a control antibody for monitoring of α-defensin 5 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Hubert, P., et al. 2014. Altered α-defensin 5 expression in cervical squamocolumnar junction: implication in the formation of a viral/tumour-permissive microenvironment. J. Pathol. 234: 464-477.

RESEARCH USE

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