



β-defensin 137 (F-12): sc-87078

BACKGROUND

β-defensins (also designated BDs, or hBDs in human) are small cationic peptides with broad-spectrum antimicrobial activity against a variety of enveloped viruses, fungi and bacteria. Produced in mucosal epithelia and neutrophils of several species, β-defensins are developmentally regulated. The family of β-defensin proteins share a common defensin-motif that is characterized by multiple cysteine residues and a highly conserved tertiary structure. Besides playing a significant role in host immune defense, many β-defensins also are involved in sperm maturation and capacitation. β-defensin 137 is a 78 amino acid secreted protein that most likely contains a signal peptide sequence that requires cleavage by proteolytic enzymes in order to become biologically active.

REFERENCES

- Jia, H.P., Mills, J.N., Barahmand-Pour, F., Nishimura, D., Mallampali, R.K., Wang, G., Wiles, K., Tack, B.F., Bevins, C.L. and McCray, P.B. 1999. Molecular cloning and characterization of rat genes encoding homologues of human β-defensins. *Infect. Immun.* 67: 4827-4833.
- Jia, H.P., Schutte, B.C., Schudy, A., Linzmeier, R., Guthmiller, J.M., Johnson, G.K., Tack, B.F., Mitros, J.P., Rosenthal, A., Ganz, T. and McCray, P.B. 2001. Discovery of new human β-defensins using a genomics-based approach. *Gene* 263: 211-218.
- 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.
- Kao, C.Y., Chen, Y., Zhao, Y.H. and Wu, R. 2003. ORFeome-based search of airway epithelial cell-specific novel human β-defensin genes. *Am. J. Respir. Cell Mol. Biol.* 29: 71-80.
- Rodríguez-Jiménez, F.J., Krause, A., Schulz, S., Forssmann, W.G., Conejo-García, J.R., Schreeb, R. and Motzkus, D. 2003. Distribution of new human β-defensin genes clustered on chromosome 20 in functionally different segments of epididymis. *Genomics* 81: 175-183.
- Zhang, Z. and Henzel, W.J. 2004. Signal peptide prediction based on analysis of experimentally verified cleavage sites. *Protein Sci.* 13: 2819-2824.
- Crovella, S., Antcheva, N., Zelezetsky, I., Boniotto, M., Pacor, S., Verga Falzacappa, M.V. and Tossi, A. 2005. Primate β-defensins—structure, function and evolution. *Curr. Protein Pept. Sci.* 6: 7-21.
- 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: DEFB137 (human) mapping to 8p23.1.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

SOURCE

β-defensin 137 (F-12) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of β-defensin 137 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-87078 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β-defensin 137 (F-12) is recommended for detection of β-defensin 137 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for β-defensin 137 siRNA (h): sc-77605, β-defensin 137 shRNA Plasmid (h): sc-77605-SH and β-defensin 137 shRNA (h) Lentiviral Particles: sc-77605-V.

Molecular Weight of β-defensin 137: 9 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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