



β-defensin 109 (G-14): sc-87071

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 109 is an 87 amino acid secreted protein that is notably expressed on the ocular surface and is found in reduced levels in microbial infection, therefore suggesting that this particular β-defensin is unlikely to have a major antimicrobial effect.

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.
- 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.
- 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.
- Kouno, T., Fujitani, N., Mizuguchi, M., Osaki, T., Nishimura, S., Kawabata, S., Aizawa, T., Demura, M., Nitta, K. and Kawano, K. 2008. A novel β-defensin structure: a potential strategy of big defensin for overcoming resistance by Gram Positive Bacteria. *Biochemistry* 47: 10611-10619.
- Hosaka, Y., Koslowski, M., Nuding, S., Wang, G., Schlee, M., Schäfer, C., Saigenji, K., Stange, E.F. and Wehkamp, J. 2008. Antimicrobial host defense in the upper gastrointestinal tract. *Eur. J. Gastroenterol. Hepatol.* 20: 1151-1158.
- Abedin, A., Mohammed, I., Hopkinson, A. and Dua, H.S. 2008. A novel antimicrobial peptide on the ocular surface shows decreased expression in inflammation and infection. *Invest. Ophthalmol. Vis. Sci.* 49: 28-33.
- Diamond, G., Beckloff, N. and Ryan, L.K. 2008. Host defense peptides in the oral cavity and the lung: similarities and differences. *J. Dent. Res.* 87: 915-927.

CHROMOSOMAL LOCATION

Genetic locus: DEFB109 (human) mapping to 8p23.1.

RESEARCH USE

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

SOURCE

β-defensin 109 (G-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of β-defensin 109 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-87071 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β-defensin 109 (G-14) is recommended for detection of β-defensin 109 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 109 siRNA (h): sc-105284, β-defensin 109 shRNA Plasmid (h): sc-105284-SH and β-defensin 109 shRNA (h) Lentiviral Particles: sc-105284-V.

Molecular Weight of β-defensin 109: 10 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.

STORAGE

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

PROTOCOLS

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