SANTA CRUZ BIOTECHNOLOGY, INC.

β-defensin 2 (C-17): sc-10854

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

β-defensins (also designated BD, and HBD in human) are small cationic peptides with broad-spectrum antimicrobial activity. β-defensins are involved in the resistance of epithelial surfaces, such as airway surface fluid, to microbial colonization. Human β-defensin 2 is locally regulated by inflammation and is the first member of the β-defensin family that is locally inducible by inflammation. The murine homolog of human β-defensin 2, which is called β-defensin 3, is present in the respiratory system and in low levels in the epithelial cells of the intestine and lung. The unique murine β-defensin 2 (Defβ2) is not expressed in airways of untreated mice, but is upregulated in the airways by lipopolysaccharide and may contribute to host defense at the mucosal surface of the airways.

REFERENCES

1. McCray, P.B., Jr., et al. 1997. Human airway epithelia express a β-defensin. Am. J. Respir. Cell Mol. Biol. 16: 343-349.
2. 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.
3. Liu, L., et al. 1998. Structure and mapping of the human β-defensin HBD-2 gene and its expression at sites of inflammation. Gene 222: 237-244.
4. Bals, R., et al. 1999. Mouse β-defensin 3 is an inducible antibicrobial peptide expressed in the epithelia of multiple genes. Infect. Immun. 67: 3542-3547.

CHROMOSOMAL LOCATION

Genetic locus: DEFB4 (human) mapping to 8p23.1.

SOURCE

β-defensin 2 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of β-defensin 2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10854 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β-defensin 2 (C-17) is recommended for detection of precursor and mature β-defensin 2 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 2 siRNA (h): sc-43721, β-defensin 2 shRNA Plasmid (h): sc-43721-SH and β-defensin 2 shRNA (h) Lentiviral Particles: sc-43721-V.

Molecular Weight of β-defensin 2: 5 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Kutta, H., et al. 2002. The human false vocal folds—an analysis of antimicrobial defense mechanisms. Anat. Embryol. 205: 315-323.
2. Nakayama, K., et al. 2002. Acid stimulation reduces bactericidal activity of surface liquid in cultured human airway epithelial cells. Am. J. Respir. Cell Mol. Biol. 26: 105-113.
3. Kao, C.Y., et al. 2004. IL-17 markedly upregulates β-defensin 2 expression in human airway epithelium via JAK and NFκB signaling pathways. J. Immunol. 173: 3482-3491.
4. Lu, Q., et al. 2004. Expression of human β-defensins 1 and 2 peptides in unresolved chronic periodontitis. J. Periodont. Res. 39: 221-227.
5. Galkowska, H., et al. 2005. Expression of natural antimicrobial peptide β-defensin 2 and langerhans cell accumulation in epidermis from human non-healing leg ulcers. Folia Histochem. Cytobiol. 43: 133-136.
6. Lu, Q., et al. 2006. Hyphal invasion of *Candida albicans* inhibits the expression of human β-defensins in experimental oral candidiasis. J. Invest. Dermatol. 126: 2049-2056.
7. Sugawara, Y., et al. 2006. Toll-like receptors, NOD1, and NOD2 in oral epithelial cells. J. Dent. Res. 85: 524-529.
8. Barrera, G.J., et al. 2009. Immunoglobulin A with protease activity secreted in human milk activates PAR-2 receptors, of intestinal epithelial cells HT-29, and promotes β-defensin 2 expression. Immunol. Lett. 123: 52-59.

STORAGE

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

RESEARCH USE

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