SANTA CRUZ BIOTECHNOLOGY, INC.

β-defensin 3 (FL-67): sc-30115

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. Produced in mucosal epithelia and neutrophils of several species, β-defensins are developmentally regulated. 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. and Bentley, L. 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. Morrison, G.M., et al. 1999. A novel mouse β-defensin, Defβ2, which is upregulated in the airways by lipopolysaccharides. FEBS Lett. 442: 112-116.
5. 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.
6. Yang, D., et al. 1999. β-defensins: linking innate and adaptive immunity through dendritic and T cell CCR6. Science 286: 525-528.

CHROMOSOMAL LOCATION

Genetic locus: DEFB103A (human) mapping to 8p23.1.

SOURCE

β-defensin 3 (FL-67) is a rabbit polyclonal antibody raised against amino acids 1-67 representing full length β-defensin 3 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.

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.

APPLICATIONS

β-defensin 3 (FL-67) is recommended for detection of β-defensin 3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 3 siRNA (h): sc-43723, β-defensin 3 shRNA Plasmid (h): sc-43723-SH and β-defensin 3 shRNA (h) Lentiviral Particles: sc-43723-V.

Molecular Weight of β-defensin 3: 5 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

SELECT PRODUCT CITATIONS

1. Sperandio, B., et al. 2008. Virulent *Shigella flexneri* subverts the host innate immune response through manipulation of antimicrobial peptide gene expression. J. Exp. Med. 205: 1121-1132.
2. Varoga, D., et al. 2009. Osteoblasts participate in the innate immunity of the bone by producing human β defensin-3. Histochem. Cell Biol. 131: 207-218.
3. Tohidnezhad, M., et al. 2011. Thrombocytes are effectors of the innate immune system releasing human β defensin-3. Injury 42: 682-686.
4. Kraus, D., et al. 2011. Human β-defensins differently affect proliferation, differentiation, and mineralization of osteoblast-like MG63 cells. J. Cell. Physiol. 227: 994-1003.
5. Winter, J., et al. 2012. IGF-1 deficiency in combination with a low basic hBD-2 and hBD-3 gene expression might counteract malignant transformation in pleomorphic adenomas *in vitro.* Cancer Invest. 30: 106-113.

RESEARCH USE

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