# β-defensin 3 (K-13): sc-30934

**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., Zhao, C., Heng, H.H. and Ganz, T. 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., Wang, L., Jia, H.P., Zhao, C., Heng, H.H.Q., Schutte, B.C., McCray, P.B. Jr. and Ganz, T. 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., Wang, X., Meegalla, R.L., Wattler, S., Weiner, D.J., Nehls, M.C. and Wilson, J.M. 1999. Mouse β-defensin 3 is an inducible antibicrobial peptide expressed in the epithelia of multiple genes. Infect. Immun. 67: 3542-3547.

5. Yang, D., Chertov, O., Bykovskaia, S.N., Chen, Q., Buffo, M.J., Shogan, J., Anderson, M., Schroder, J.M., Wang, J.M., Howard, O.M.Z. and Oppenheim, J.J. 1999. β-defensins: linking innate and adaptive immunity through dendritic and T cell CCR6. Science 286: 525-528.

## CHROMOSOMAL LOCATION

Genetic locus: DEFB103B/DEFB103A (human) mapping to 8p23.1; Defb3 (mouse) mapping to 8 A1.3.

## SOURCE

β-defensin 3 (K-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of 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.

Blocking peptide available for competition studies, sc-30934 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

β-defensins 3 (K-13) is recommended for detection of precursor and mature β-defensins 3 and β-defensins 3B of human and, to a lesser extent, mouse and rat 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA
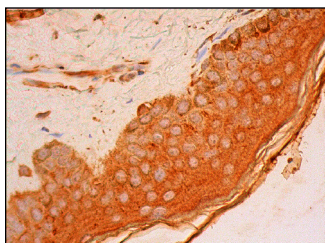


β-defensin 3 (K-13): sc-30934. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, Fibroblasts, Langerhans cells and melanocytes.

## SELECT PRODUCT CITATIONS

1. Lindner, H.B., Zhang, A., Eldridge, J., Demcheva, M., Tsichlis, P., Seth, A., Vournakis, J. and Muise-Helmericks, R.C. 2011. Anti-bacterial effects of poly-N-acetyl-glucosamine nanofibers in cutaneous wound healing: requirement for Akt1. PLoS ONE 6: e18996.

## RESEARCH USE

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

**MONOS** Satisfaction Guaranteed

Try **β-defensin 3 (L3-18b-E1): sc-59495**, our highly recommended monoclonal alternative to β-defensin 3 (K-13).