SANTA CRUZ BIOTECHNOLOGY, INC.

β-defensin 4 (P-18): sc-10856

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. Unlike the other previously described human β-defensins, human β-defensin 4 (hBD-4) expression is restricted to a few tissues, with highest expression in testis. A restricted pattern is also exhibited by mouse β-defensin 4. Rat β-defensin 4 (also designated BD-4, RBD-4, BD-2, and RBD-2) is developmentally regulated in the lung and is predominantly expressed in the lung and, to a lesser extent, in the trachea and tongue. It exhibits a regulation pattern similar to that of specific genes involved in host defense around the time of birth. The selectivity in both expression pattern and antimicrobial activity of human β-defensin 4 suggests that it is best suited to act at the epithelial locations where it is expressed.

REFERENCES

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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 2 (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.
5. Yang, D., et al. 1999. β-defensins: linking innate and adaptive immunity through dendritic and T cell CCR6. Science 286: 525-528.
6. 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.
7. Garcia, J.R., et al. 2001. Human β-defensin 4: a novel inducible peptide with a specific salt-sensitive spectrum of antimicrobial activity. FASEB J. 15: 1819-1821.

CHROMOSOMAL LOCATION

Genetic locus: Defb4 (rat) mapping to 16q12.5.

SOURCE

β-defensin 4 (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of β-defensin 4 of rat origin.

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.

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-10856 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β-defensin 4 (P-18) is recommended for detection of precursor and mature β-defensin 4 of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of β-defensin 4: 9 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.

PROTOCOLS

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