SANTA CRUZ BIOTECHNOLOGY, INC.

β-defensin 4 (L13-10-D1): sc-59496

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 development-ally 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 desiganated 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

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. 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, Defb2, 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: DEFB104A/DEFB104B (human) mapping to 8p23.1.

SOURCE

β-defensin 4 (L13-10-D1) is a mouse monoclonal antibody raised against amino acids 6-22 of β-defensin 4 of human origin.

PRODUCT

Each vial contains 10 µg IgG_1 in µg (lyophilized 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.

APPLICATIONS

β-defensin 4 (L13-10-D1) is recommended for detection of β-defensin 4 of human origin by Western Blotting (dilutions to be determined by researcher), immunofluorescence (dilutions to be determined by researcher) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1 µg/ml, dilution range to be determined by researcher).

Suitable for use as control antibody for β-defensin 4 siRNA (h): sc-77877, β-defensin 4 shRNA Plasmid (h): sc-77877-SH and β-defensin 4 shRNA (h) Lentiviral Particles: sc-77877-V.

Molecular Weight of β-defensin 4: 9 kDa.

SELECT PRODUCT CITATIONS

1. Liu, M., et al. 2008. Different binding characteristics of dengue-2 virus to midgut of *Aedes albopictus (Diptera: Culicidae)* and *Culex quinquefasciatus (Diptera: Culicidae).* Appl. Entomol. Zool. 43: 49-55.
2. Musumeci, G., et al. 2012. β-defensin-4 (HBD-4) is expressed in chondrocytes derived from normal and osteoarthritic cartilage encapsulated in PEGDA scaffold. Acta Histochem. 114: 805-812.
3. Vartina, E., et al. 2019. Inflammatory cytokines and antimicrobial peptides in acquired heart diseases. Histol. Histopathol. 34: 889-897.
4. Casal, D., et al. 2019. BD-2 and BD-3 increase skin flap survival in a model of ischemia and *Pseudomonas aeruginosa* infection. Sci. Rep. 9: 7854.
5. Dambergs, K., et al. 2024. Comparison of tissue factors in the ontogenetic aspects of human cholesteatoma. Diagnostics 14: 662.

RESEARCH USE

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

PROTOCOLS

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