

β-defensin 4 (M-43): sc-30118

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 antimicrobial 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 (mouse) mapping to 8 A1.3.

SOURCE

β-defensin 4 (M-43) is a rabbit polyclonal antibody raised against amino acids 21-63 of β-defensin 4 of mouse origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

β-defensin 4 (M-43) is recommended for detection of β-defensin 4 of mouse 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 4 siRNA (m): sc-40484, β-defensin 4 shRNA Plasmid (m): sc-40484-SH and β-defensin 4 shRNA (m) Lentiviral Particles: sc-40484-V.

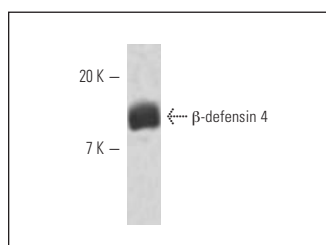
Molecular Weight of β-defensin 4: 9 kDa.

Postive Controls: mouse lung extract: sc-2390.

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.

DATA



β-defensin 4 (M-43): sc-30118. Western blot analysis of β-defensin 4 expression in mouse lung tissue extract.

SELECT PRODUCT CITATIONS

1. 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.

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.