



β -defensin 2 (hBA-41): sc-4835

BACKGROUND

β -defensins (also designated BD, and HBD in human) are small cationic peptides with broad-spectrum antimicrobial activity. β -defensins are involved in the resistance of epithelial surfaces, such as airway surface fluid, to microbial colonization. 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 (Def β 2) 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., et al. 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 antibacterial 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 CCR-6. *Science* 286: 525-528.
6. Morrison, G.M., et al. 1999. A novel mouse β -defensin, Def β 2, which is upregulated in the airways by lipopolysaccharides. *FEBS Lett.* 442: 112-116.

CHROMOSOMAL LOCATION

Genetic locus: DEF β 4 (human) mapping to 8p23.1-p22; Def β 2 (mouse) mapping to 8 A4.

SOURCE

β -defensin 2 (hBA-41) is produced in *E. coli* as 31 kDa biologically active, GST-tagged fusion protein corresponding to 41 amino acids of β -defensin 2 of human origin.

PRODUCT

β -defensin 2 (hBA-41) is purified from bacterial lysates (>98%); supplied as 50 μ g purified protein.

BIOLOGICAL ACTIVITY

β -defensin 2 (hBA-41) is biologically active as determined by its ability to chemoattract immature dendritic cells using a concentration range of 1-10 ng/ml.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

SELECT PRODUCT CITATIONS

1. Seo, Y.S., et al. 2023. The ethanol extracts of *Osmanthus fragrans* leaves ameliorate the bone loss via the inhibition of osteoclastogenesis in osteoporosis. *Plants* 12: 253.

STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

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.