

## beta-Defensin 1

Human, Recombinant (rHuBD-1)

Expressed in *E. coli*

Cat. No. CRP0866

Lot. No. (See product label)

### PRODUCT INFORMATION

**Description:** Defensins (alpha and beta) are cationic peptides with a broad spectrum of antimicrobial activity that comprise an important arm of the innate immune system. The  $\alpha$ -defensins are distinguished from the  $\beta$ -defensins by the pairing of their three disulfide bonds. To date, four human  $\beta$ -defensins have been identified; BD-1, BD-2, BD-3 and BD-4.  $\beta$ -defensins are expressed on some leukocytes and at epithelial surfaces. In addition to their direct antimicrobial activities, they are chemoattractant towards immature dendritic cells and memory T cells. The  $\beta$ -defensin proteins are expressed as the C-terminal portion of precursors and are released by proteolytic cleavage of a signal sequence and, in the case of BD-1 (36 a.a.), a propeptide region. B-defensins contain a six-cysteine motif that forms three intramolecular disulfide bonds. B-Defensins are 3-5 kDa peptides ranging in size from 33-47 amino acid residues.

**Amino-Acid Sequence:** 47 aa, non-glycosylated

**M. W. :** 5,000Da

**Recombinant:** Expressed in *E. coli*

**Purity:** >98% by SDS-PAGE and HPLC analyses.

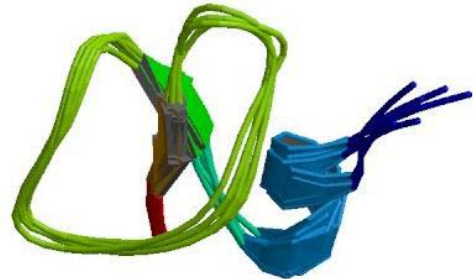
**Formulation:** Lyophilized from a 0.2mm filtered concentrated (1.0mg/ml) solution in 20mM PB, pH 7.4, 130mM NaCl.

**Biological Activity:** Fully biologically active when compared to standard. Determined by its ability to chemoattract CD34+ dendritic cells using a concentration range of 0.1-1.0 ug/ml.

**Endotoxin:** Less than 1EU/mg of rHuBD-1 as determined by LAL method.

**Reconstitution:** We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/ml. Stock solutions should be apportioned into working aliquots and stored at  $\leq -20^{\circ}\text{C}$ . Further dilutions should be made in appropriate buffered solutions.

**Storage:** This lyophilized preparation is stable for several weeks at  $2-8^{\circ}\text{C}$ , but should be kept at  $-20^{\circ}\text{C}$  for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at  $2-8^{\circ}\text{C}$ . For maximal stability, apportion the reconstituted preparation into working aliquots and store at  $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$ . Avoid repeated freeze/thaw cycles.



[PDB](#) rendering based on 1e4s.

### GENE INFORMATION

**Gene Name:** [DEFB1](#)

**Synonyms:** BD1; DEFB-1; DEFB101; HBD1; hBD-1; beta-defensin-1; defensin beta 1; MGC51822; Beta-defensin 1 precursor, BD-1

**mRNA Refseq:** [NM\\_005218.3](#)

**Protein Refseq:** [NP\\_005209.1](#)

**MIM:** [602056](#)

**GeneID:** [1672](#)

**Uniprot ID:** [P60022](#)

**Chromosome Location:** 8p23.2-p23.1

**Process:** G-protein coupled receptor protein signaling pathway, chemotaxis, defense response to bacterium, innate immune response.

### REFERENCES

1. Bensch KW, Raida M, Mägert HJ, et al. hBD-1: a novel beta-defensin from human plasma. *FEBS Lett.* 1995; 368 (2): 331-335.
2. Bonaldo MF, Lennon G, Soares MB. Normalization and subtraction: two approaches to facilitate gene discovery. *Genome Res.* 1997; 6 (9): 791-806.
3. Goldman MJ, Anderson GM, Stolzenberg ED, et al. Human beta-defensin-1 is a salt-sensitive antibiotic in lung that is inactivated in cystic fibrosis. *Cell.* 1997; 88 (4): 553-560.

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21 Brookhaven BLVD · Port Jefferson Station, NY 11776, USA  
Technical Support: T: 631-871-5806 · F: 631-207-8356  
E-mail: [info@creative-biolabs.com](mailto:info@creative-biolabs.com)  
[www.creative-biolabs.com](http://www.creative-biolabs.com)