

Recombinant Human Beta-Defensin 1

Human, Recombinant (DEFB1)

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 α -defensins are distinguished from the β -defensins by the pairing of their three disulfide bonds. To date, four human β -defensins have been identified; BD-1, BD-2, BD-3 and BD-4. β -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 β -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 intra-molecular 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.

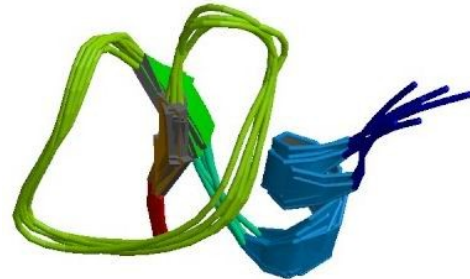
Formulation: Lyophilized from a 0.2mm filtered concentrated (1.0mg/ml) solution in 20mM PB, pH 7.4, 130mM NaCl.

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°C, but should be kept at -20°C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8°C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20°C to -70°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; DEFB1

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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