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## Product Data Sheet

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Product Name: BD 4 Human  
 Cat. No.: GP20081  
 Batch No.: 1

### Product Data

Purity	>98%	Source	Escherichia Coli.
Physical Appearance	solid	Shipping Condition	Shipped at Room temp.
Synonyms	HBD-4; DEFB-4; HBD4; DEFB104B; Beta-defensin 4; BD-4.		
Amino Acid Sequence	EFELDRICGY GTARCRKKCR SQEYRIGRCP NTYACCLRKW DESLLNRTKP.		
Solubility	It is recommended to reconstitute the lyophilized Beta Defensin-4 in sterile 18MΩ-cm H <sub>2</sub> O not less than 100μg/ml, which can then be further diluted to other aqueous solutions.		
Formulation	The DEFB4 (1mg/ml) was lyophilized with 20mM sodium Phosphate buffer pH-7.4 and 130mM NaCl.		

### Introduction

Defensins are cationic peptides with a large spectrum of antimicrobial activity that comprise an important arm of the innate immune system. The Alpha defensins are differentiated from the Beta-defensins by the pairing of their 3 disulfide bonds. 4 human Beta-defensins have been identified to date; 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. Beta-defensins contain a six-cysteine motif that forms three intra-molecular disulfide bonds. Beta-Defensins are 3-5 kDa peptides ranging in size from 33-47 amino acid residues.

### Biological Activity

Determined by its ability to chemoattract human monocytes using a concentration range of 0.1-50 ng/ml, corresponding to a specific activity of 20,000-10,000,000 units/mg.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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### Stability

Lyophilized Beta Defensin-4 Recombinant although stable at room temperature for 3 weeks, should be stored desiccated below  $-18^{\circ}\text{C}$ . Upon reconstitution BD-3 should be stored at  $4^{\circ}\text{C}$  between 2-7 days and for future use below  $-18^{\circ}\text{C}$ . Please prevent freeze-thaw cycles.

### Background

Beta Defensin-4 Human Recombinant produced in E.Coli is a single, non-glycosylated polypeptide chain containing 50 amino acids and having a molecular mass of 6 kDa. The BD-4 is purified by proprietary chromatographic techniques.

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