

# BD-1

Catalog # PVGS1040

## Product Information

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<b>Primary Accession Species</b>	<a href="#">P60022</a> Human
<b>Sequence</b>	Gly22-Lys68
<b>Purity</b>	> 98% as analyzed by SDS-PAGE > 98% as analyzed by HPLC
<b>Endotoxin Level Biological Activity</b>	Fully biologically active when compared to standard. The biological activity determined by a chemotaxis bioassay using CD34 <sup>+</sup> dendritic cells is in a concentration range of 100.0-1000.0 ng/ml.
<b>Expression System</b>	E. coli
<b>Theoretical Molecular Weight</b>	5.1 kDa
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in 20 mM PBS, pH 7.4, 130 mM NaCl.
<b>Reconstitution</b>	It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/ml.
<b>Storage &amp; Stability</b>	Upon receiving, this product remains stable for up to 6 months at -70°C or -20°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. Avoid repeated freeze-thaw cycles.

## Additional Information

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<b>Gene ID</b>	1672
<b>Other Names</b>	Beta-defensin 1, BD-1, hBD-1, Defensin, beta 1, DEFB1, BD1, HBD1
<b>Target Background</b>	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. $\beta$ -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.

## Protein Information

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<b>Name</b>	DEFB1
<b>Synonyms</b>	BD1, HBD1
<b>Function</b>	Has bactericidal activity. May act as a ligand for C-C chemokine receptor CCR6. Positively regulates the sperm motility and bactericidal activity in a CCR6-dependent manner. Binds to CCR6 and triggers Ca <sup>2+</sup> mobilization in the sperm which is important for its motility (PubMed: <a href="#">25122636</a> ).
<b>Cellular Location</b>	Secreted. Membrane. Note=Associates with tumor cell membrane-derived microvesicles (PubMed:23938203)
<b>Tissue Location</b>	Blood plasma. Sperm. Highly expressed in the lower head and midpiece of sperm. Significantly reduced levels found in the sperms of asthenozoospermia and leukocytospermia patients (at protein level).

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