# Growth Factor Data Sheet

**GoldBio growth factors are manufactured for RESEARCH USE ONLY and cannot be sold for human consumption!**

Human beta-defensin 1 (DEFB1) is an antimicrobial peptide that contributes to the innate and adaptive immune system and is active against bacteria, fungi, and viruses. Like the other β-defensins, DEFB1 is a small protein that contains a motif consisting of six cysteine residues which form three intramolecular disulfide bridges. It is constitutively expressed in epithelial cells, mainly of the kidney and the female reproductive tract, as well as in monocytes, macrophages, and dendritic cells. DEFB1 is a cationic peptide and interacts with the membranes of invading microbes, which are negatively charged due to the presence of lipopolysaccharides (LPS) or lipoteichoic acid (LTA). LTA and LPS have higher affinity for DEFB1 than for Ca+2 and Mg+2 ions. The larger defensin molecule displaces the smaller ion, changing the membrane structure and affecting the stability of the membrane; this can lead to the formation of pores and subsequent depolarization or lysis. The primary role of DEFB1 is believed to be prevention of microbial colonization on epithelia. Inhibition of DEFB1 by high salt concentration may play a role in the pathogenesis of cystic fibrosis. DEFB1 may also play a role in the pathogenesis of severe sepsis.

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| **Catalog Number**<br>**Product Name** | **1190-01**<br>**DEFB1, Human**<br>Recombinant Human Defensin, Beta 1<br>BD1, DEFB-1, HBD-1 |
| **Source** | *Escherichia coli* |
| **MW** | ~5.1 kDa (47 amino acids) |
| **Sequence** | GNFLTGLGHR SDHYNCVSSG GQCLYSACPI FTKIQGTCYR GKAKCCK |
| **Accession Number** | P60022 |
| **Purity** | >98% by SDS-PAGE and HPLC analyses |
| **Biological Activity** | Fully biologically active when compared to standard. The biological activity determined by a chemotaxis bioassay using CD34+ dendritic cells is in a concentration range of 100.0-1000.0 ng/ml. |
| **Formulation** | Sterile filtered white lyophilized powder. Purified and tested for use in cell culture. |
| **Storage/Handling** | This lyophilized preparation is stable at 2-8°C, but should be kept at -20°C for long term storage. The reconstituted sample can be apportioned into working aliquots and stored at -80 °C for up to 6 months. Avoid repeated freeze/thaw cycles. |
| **Reconstitution** | The sample should be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in a siliconized tube using PBS that contains a 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Reconstituted solutions are stable for up to one week at 2-8°C. Stock solutions should be aliquoted and stored at -80°C. Further dilutions should be made in appropriate buffered solutions containing BSA or serum. |