

Growth Factor Data Sheet

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Murine beta-defensin 3 (DEFB3) is an antimicrobial peptide that contributes to the innate and adaptive immune systems and is active against gram-negative and gram-positive bacteria, fungi, and viruses. Like the other β -defensins, DEFB3 is a small protein that contains a motif consisting of six cysteine residues which form three intramolecular disulfide bridges. It is expressed in epithelial tissue of many organs, including the skin and lungs, and in leukocytes. Expression of DEFB3 is induced by proinflammatory cytokines such as IL1B and IFNG. Expression of murine DEFB3 was found to be downregulated in the epidermis by psychological stress due to decreased glucocorticoid production and subsequent decreased defensin-encapsulating lamellar body secretion. DEFB3 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 DEFB3 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. Inhibition of DEFB3 by high salt concentration may play a role in the pathogenesis of cystic fibrosis.

Catalog Number	1390-03
Product Name	DEFB3, Murine Recombinant MurineDefensin, Beta 3 BD3, DEFB-3, MBD-3, DEFB103A
Source	<i>Escherichia coli</i>
MW	~4.6 kDa (41 amino acids)
Sequence	KKINNPVSCL RKGGRWCNRC IGNTDQIGSC GVPFLKCKR K
Accession Number	Q9WTLO
Purity	>95% by SDS-PAGE and HPLC analyses
Biological Activity	Fully biologically active when compared to standard. The ED ₅₀ as determined by anti-microbial activity against <i>E.coli</i> is less than 20 μ g/ml, corresponding to a specific activity of >50 IU/mg.
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.