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Beta Defensin-1, human recombinant (rHuBD-1)

Catalog No: 97016
Lot No: XXXXX
Source: *E. coli*
Synonyms: Beta-defensin 1, BD-1, Defensin beta 1, hBD-1, HBD1, HBP1, DEFB1, HBD-1, HBP-1, DEFB101, DEFB-1, MGC51822

Background

The Defensin family are highly similar in their protein sequence and are microbicidal & cytotoxic peptides made by neutrophils. Beta Defensin-1 is an antimicrobial peptide having the resistance of epithelial surfaces to microbial colonization. Beta Defensin-1 has close proximity to Defensin Alpha-1 and has been implicated in the pathogenesis of cystic fibrosis. Skin of patients having atopic dermatitis patients and mycosis fungoides (non-lesional and lesional) show lower human Beta Defensin-1 mRNA expression and higher human Beta Defensin-2 and human Beta Defensin-3 mRNA expression. Beta Defensin is highly expressed by epithelial cells. Beta-defensin 1 may play a role in the pathogenesis of severe sepsis. Variation in human Beta Defensin-1 contributes to asthma diagnosis, with apparent gender-specific effects. Human Beta Defensin-3 is a dimer, while Human BD-1 and Human BD-2 are monomeric. The expression of Human BD1 is correlated with induction profiles in gingival keratinocytes. The level of expression of human DEFB1 mRNA is lower than that of human BD3 and human BD-2 in reconstructed epidermis. Human BD1 is down-regulated in human prostatic and renal carcinomas.

Description

Beta Defensin-1 human recombinant produced in *E. coli* is a single, non-glycosylated polypeptide chain containing 47 amino acids and having a molecular mass of 5 kDa. BD-1 is purified by proprietary chromatographic techniques.

Physical Appearance

Sterile filtered white lyophilized (freeze-dried) powder.

Formulation

Human BD-1 was lyophilized from a concentrated (1 mg/ml) solution containing 20 mM PBS pH 7.4 and 130 mM sodium chloride.

Solubility

It is recommended to reconstitute the lyophilized Beta Defensin-1 in sterile 18 M Ω -cm H₂O not less than 100 μ g/ml, which can then be further diluted to other aqueous solutions.

Stability

Lyophilized Beta Defensin-1, although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution BD-1 should be stored at 4°C between 2-7 days and for future use below -18°C. Please prevent freeze-thaw cycles.

Purity

Greater than 98.0% as determined by (a) Analysis by RP-HPLC, (b) Analysis by SDS-PAGE.

Amino Acid Sequence

GNFLTGLGHR SDHYNCVSSG GQCLYSACPI FTKIQGTCYR GKAKCCK



Activity

Determined by its ability to chemoattract CD34+ dendritic cells using a concentration range of 100 - 1000 ng/ml corresponding to a specific activity of 1,000 - 10,000 IU/mg.

Usage

This product is offered by Biomol for research purposes only. Not for diagnostic purposes or human use. It may not be resold or used to manufacture commercial products without written approval of Biomol GmbH.