



Beta Defensin-4 (BD-4), human recombinant (rHuBD-4)

Catalog No: 08548
Lot No: XXXXX
Source: *E. coli*
Synonyms: HBD-4, DEFB-4, HBD4, DEFB104B, Beta-defensin 4, BD-4

Background

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.

Description

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. BD-4 is purified by proprietary chromatographic techniques.

Physical Appearance

Sterile filtered white lyophilized (freeze-dried) powder.

Formulation

DEFB4 (1 mg/ml) was lyophilized with 20 mM sodium phosphate buffer pH 7.4 and 130 mM NaCl.

Solubility

It is recommended to reconstitute the lyophilized Beta Defensin-4 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-4, although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution BD-3 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

EFELDRICGY GTARCRKKCR SQEYRIGRCP NTYACCLRKW DESLLNRTKP

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.

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