

Overview

Synonyms	beta-Defensin 4 (BD-4), Human;
Description	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 α -defensins are distinguished from the β -defensins by the pairing of their three disulfide bonds. To date, four human β -defensins have been identified; BD-1, BD-2, BD-3 and BD-4. The β -defensin proteins are expressed as the C-terminal portion of precursors and are released by proteolytic cleavage of a signal sequence. β -defensins contain a six-cysteine motif that forms three intra-molecular disulfide bonds. β -defensins are 3-5 kDa peptides ranging in size from 33-47 amino acid residues. BD-4 is expressed in testis, stomach, uterus, neutrophils, thyroid, lung and kidney. In addition to its direct antimicrobial activities, BD-4 is chemoattractant towards human blood monocytes.
Species	Human
Source	<i>E. coli</i>
Biological Activity	Fully biologically active when compared to standard. The biological activity determined by a chemotaxis bioassay using human monocytes is in a concentration range of 0.1-100.0 ng/ml.
Sequence	EFELDRICGY GTARCRKKCR SQEYRIGRCP NTYACCLRKW DESLNRTKP

Properties

Measured Molecular Weight	Approximately 6.0 kDa, a single non-glycosylated polypeptide chain containing 50 amino acids.
Purity	> 98 % by SDS-PAGE and HPLC analyses.
Formulation	Lyophilized from a 0.2 μ m filtered concentrated solution in 20 mM PBS, pH 7.4, 130 mM NaCl.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at d -20 °C. Further dilutions should be made in appropriate buffered solutions.
Endotoxin Level	Less than 1 EU/ μ g of rHuBD-4 as determined by LAL method.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Usage	This material is for research, laboratory or further evaluation purposes. NOT FOR HUMAN USE.
Storage	This lyophilized preparation is stable at 2-8 °C, but should be kept at -20 °C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8 °C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20 °C to -70 °C. Avoid repeated freeze/thaw cycles.

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