

## BD-4, Human

**Cat. No.:** Z02757-1

**Size:** 1.0 mg

**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  $\alpha$ -defensins are distinguished from the  $\beta$ -defensins by the pairing of their three disulfide bonds. To date, four human  $\beta$ -defensins have been identified; BD-1, BD-2, BD-3 and BD-4. The  $\beta$ -defensin proteins are expressed as the C-terminal portion of precursors and are released by proteolytic cleavage of a signal sequence.  $\beta$ -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. 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.

### Amino Acid Sequence:

00001 EFELDRICGY GTARCRKKCR SQEYRIGRCP NTYACCLRKW  
00041 DESLLNRTKP

**Source:** *E. coli*

**Species:** Human

**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.

**Molecular Weight:** Approximately 6.0 kDa, a single non-glycosylated polypeptide chain containing 50 amino acids.

**Formulation:** Lyophilized from a 0.2  $\mu$ m filtered concentrated solution in 20 mM PBS, pH 7.4, 130 mM NaCl.

**Appearance:** Sterile Filtered White lyophilized (freeze-dried) powder.

**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  $\leq -20$  °C. Further dilutions should be made in appropriate buffered solutions.

**Purity:** > 98 % by SDS-PAGE and HPLC analyses.

**Endotoxin Level:** Less than 1 EU/ $\mu$ g of rHuBD-4 as determined by LAL method.

**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.