Recombinant Human Beta-defensin 3

#R00194

Size: 5 μg/100 μg/500 μg

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

Warning: This product is intended for scientific research only. It is not to be used for medical or diagnostic procedures in humans or animals, nor as a food, cosmetic, or household product.

Background

Defensins (alpha and beta) are cationic peptides with antimicrobial activity against Gram-negative and Gram-positive bacteria, fungi, and enveloped viruses. They are 2-6 kDa proteins and take important roles in innate immune system. On the basis of their size and pattern of disulfide bonding, mammalian defensins are classified into alpha, beta and theta categories. β-Defensins contain a six-cysteine motif that forms three intra-molecular disulfide bonds. Four human β-defensins have been identified and they are expressed on some leukocytes and at epithelial surfaces. Because β-defensins is cationic peptides, they can therefore interact with the membrane of invading microbes, which are negative due to lipopolysaccharides (LPS) and lipoteichoic acid (LTA) found in the cell membrane. Especially, they have higher affinity to the binding site compared to Ca2+ and Mg2+ ions. Furthermore, they can affect the stability of the membrane.

AA Sequence

GIINTLQKYYCRVRGGRCAVLSCLPKEEQIGKCSTRG RKCCRRKK

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 ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.

Product Specification

Synonyms	Defensin beta3
Accession	P81534
GeneID	55894
Species	Human
Source	Escherichia coli.
Molecular Weight	Approximately 5.2 kDa, a single non-glycosylated polypeptide chain containing 45 amino acids.
Purity	> 98 % 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 E.coli. is less than 30 μg/ml, corresponding to a specific activity of > 33.3 IU/mg.
Physical	Sterile Filtered White lyophilized

Appearance	(freeze-dried) powder.
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in 20 mM PB, pH 7.4, 130 mM NaCl.
Endotoxin	Less than 1 EU/μg of rHuBD-3 as determined by LAL method.