

Recombinant Rat Beta-defensin 4

#R00342

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 are expressed on some leukocytes and at epithelial surfaces. They contain a six-cysteine motif that forms three intra-molecular disulfide bonds. Because β-defensins are 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. Additionally, they are not only have the

ability to strengthen the innate immune system but can also enhance the adaptive immune system by chemotaxis of monocytes, T-lymphocytes, dendritic cells and mast cells to the infection site.

AA Sequence

QSINNPITCLTKGGVCWGPCTGGFRQIGTCGLPRVR
CCKKK

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 beta4
Accession	O88514
GeneID	64389
Species	Rat
Source	Escherichia coli.
Molecular Weight	Approximately 4.4 kDa, a single non-glycosylated polypeptide chain containing 41 amino acids.
Purity	> 95 % by SDS-PAGE and HPLC analyses.
Biological Activity	Fully biologically active when compared to standard. The biologically active determined by a chemotaxis bioassay using human monocytes is in a concentration range of 0.1-100.0 ng/ml.
Physical	Sterile Filtered White Lyophilized

Appearance	(freeze-dried) powder.
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in 10 mM PB, pH 7.4, 500 mM NaCl.
Endotoxin	Less than 1 EU/μg of rRtBD-4 as determined by LAL method.