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BD 2 Human

Beta Defensin-2 Human Recombinant
CYK0070

Product Overview

Name	BD 2 Human
Description	
Beta Defensin-2 Human Recombinant	
Accession (Primary)	O15263
Synonyms	
Beta-defensin 2, BD-2, mBD-2, Defensin beta 2, Defb2, MGC129140, MGC129141.	
Introduction	
The Defensin family are highly similar in their protein sequence and are microbicidal & cytotoxic peptides made by neutrophils. Beta Defensin-1 is an antimicrobial peptide having the resistance of epithelial surfaces to microbial colonization. Beta Defensin-1 has close proximity to Defensin Alpha-1 and has been implicated in the pathogenesis of cystic fibrosis. Skin of patients having atopic dermatitis patients and mycosis fungoides (non-lesional and lesional) show lower human Beta Defensin-1 mRNA expression and higher human Beta Defensin-2 and human Beta Defensin-3 mRNA expression. BBeta Defensin is highly expressed by epithelial cells. Beta-defensin 1 may play a role in the pathogenesis of severe sepsis. Variation in human Beta Defensin-1 contributes to asthma diagnosis, with apparent gender-specific effects. Human Beta Defensin-3 is a dimer, while Human BD-1 and Human BD-2 are monomeric. The expression of Human BD1 is correlated with induction profiles in gingival keratinocytes. The level of expression of human DEFB1 mRNA is lower than that of human BD3 and human BD-2 in reconstructed epidermis. Human BD1 is down-regulated in human prostatic and renal carcinomas.	
Source	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered White lyophilized (freeze-dried) powder.	
Formulation	
The Mouse BD-2 was lyophilized from a 0.2 μm filtered concentrated solution in PBS, pH7.4.	
Stability	
Lyophilized Beta Defensin-2 Recombinant although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution BD-2 should be stored at 4°C between 2-7 days and for future use below -18°C. Please prevent freeze-thaw cycles.	

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Purity

Greater than 98.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

Amino acid sequence

AVGSLKSIGY EAELDHCHTN GGYCVRAICP PSARRPGSCF PEKNPCCKYM K.

Biological Activity

Determined by the ability to chemoattract immature human dendritic cells at a concentration of 10-100ng/ml.

Solubility

It is recommended to reconstitute the lyophilized Beta Defensin-2 in sterile 18M-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Precautions

BD 2 Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (O15263)

Background

Beta Defensin-2 Human Recombinant: Unveiling its Role in Innate Immunity and Therapeutic Potential Abstract: Beta Defensin-2 (BD-2), a member of the defensin family, plays a crucial role in innate immunity and host defense. This research paper provides an overview of BD-2 human recombinant, exploring its molecular characteristics, antimicrobial properties, and therapeutic applications. Understanding the multifaceted role of BD-2 offers new avenues for developing innovative immunotherapies. This article offers a concise analysis of BD-2, highlighting its impact on innate immunity and its therapeutic potential. Introduction: Innate immunity serves as the first line of defense against invading pathogens. BD-2, a key antimicrobial peptide within the defensin family, plays a vital role in immune responses at epithelial surfaces. This paper provides an overview of BD-2, shedding light on its structure, function, and therapeutic potential. BD-2 Structure and Function: BD-2 is a cationic peptide that exhibits a conserved cysteine motif, conferring its antimicrobial activity. It acts by disrupting microbial cell membranes, exerting a broad spectrum of antimicrobial effects against bacteria, fungi, and viruses. Additionally, BD-2 possesses immunomodulatory properties, regulating inflammatory responses and promoting wound healing. Antimicrobial Properties and Therapeutic Applications: BD-2 demonstrates potent antimicrobial activity against a wide range of pathogens, including drug-resistant strains. Its ability to combat biofilm formation and enhance immune cell recruitment makes it a promising candidate for developing novel antimicrobial therapies. Furthermore, BD-2's immunomodulatory effects hold potential in treating inflammatory disorders. Therapeutic Potential of BD-2 Human Recombinant: BD-2 human recombinant offers exciting prospects in

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immunotherapy. Strategies aimed at enhancing BD-2 expression or delivering exogenous BD-2 may boost innate immune responses in individuals with compromised immunity or chronic infections. BD-2-based therapeutics could be developed for wound healing, infectious diseases, and inflammatory conditions. Challenges and Future Directions: While BD-2 shows great promise, challenges remain. Further research is needed to optimize delivery methods of BD-2 and evaluate its safety and efficacy in clinical settings. Understanding the interplay between BD-2 and other immune factors will enable the development of synergistic therapies for enhanced therapeutic outcomes. Conclusion: BD-2 human recombinant represents a promising avenue for developing novel immunotherapies and combating antimicrobial resistance. Understanding the molecular mechanisms and functional implications of BD-2 in innate immunity opens new horizons for innovative treatments. Continued research in this field has the potential to revolutionize immunotherapy and improve patient outcomes.