

BD5 Human

Beta Defensin-5 Human Recombinant

CYK0078

Product Overview

Name	BD5 Human
Accession(Primary)	Q8NG35
Description	Beta Defensin-5 Human Recombinant

Target information (Q8NG35)

Gene Name

About Gene Symbol

Background

Beta Defensin-5 Human Recombinant: Unleashing the Potential of an Emerging Antimicrobial Peptide

Abstract: Beta Defensin-5 (hBD-5) human recombinant is an intriguing antimicrobial peptide with diverse properties and promising therapeutic applications. This research paper aims to provide a comprehensive analysis of hBD-5, including its characteristics, mode of action, and potential uses. Furthermore, innovative methodologies for the production and optimization of hBD-5 human recombinant are proposed, offering insights into its future implications in the field of infectious disease management.

Introduction: The emergence of drug-resistant infections demands innovative solutions to combat pathogens. Antimicrobial peptides, such as hBD-5, have attracted attention due to their broad-spectrum activity. This paper explores the unique features of hBD-5 and presents novel approaches for its production and optimization.

Characteristics and Mode of Action: hBD-5 is a cationic peptide composed of 41 amino acids and possesses a distinctive structure that contributes to its antimicrobial properties. The mechanism of action involves the disruption of microbial membranes and subsequent destruction of pathogens. Additionally, hBD-5 exhibits immunomodulatory effects by stimulating immune cells and modulating the inflammatory response.

Production of hBD-5 Human Recombinant:

Efficient production methodologies are crucial for the therapeutic application of hBD-5 human recombinant. Various expression systems, including bacterial, yeast, and mammalian cell-based platforms, have been investigated. Each system presents unique advantages and challenges, requiring careful selection to achieve high yields and protein quality. Optimization strategies, such as codon optimization, fusion protein tags, and growth conditions, have been implemented to enhance production efficiency. Purification techniques, such as chromatography and ultrafiltration, have been optimized to isolate high-quality hBD-5 recombinant. Potential Applications: hBD-5 human recombinant holds great promise for the treatment of drug-resistant pathogens. Its broad-spectrum antimicrobial activity against bacteria, viruses, and fungi positions it as a valuable therapeutic agent for infectious disease management. Moreover, hBD-5 exhibits potential in wound healing and tissue regeneration, as it promotes cell migration and angiogenesis. Exploring its potential as an adjuvant therapy in combination with existing antibiotics is an exciting area for future research. Conclusion: hBD-5 human recombinant represents an emerging antimicrobial peptide with diverse therapeutic potential. Optimizing production methodologies and elucidating its mechanisms of action will further enhance its clinical utility. With its broad-spectrum antimicrobial activity and potential implications in wound healing and adjuvant therapy, hBD-5 human recombinant holds promise as an innovative therapeutic tool.

References for protein:

Bibliography: Diamond G, Beckloff N, Weinberg A, Kisich KO. The roles of antimicrobial peptides in innate host defense. *Curr Pharm Des.* 2009;15(21):2377-2392. Harder J, Bartels J, Christophers E, Schröder JM. Isolation and characterization of human β -defensin-3, a novel human inducible peptide antibiotic. *J Biol Chem.* 2001;276(8):5707-5713. Diamond G, Ryan LK. β -Defensins: what are they really doing in the oral cavity? *Oral Dis.* 2011;17(7):628-635. García JR, Krause A, Schulz S, et al. Human β -defensin 4: a novel inducible peptide with a specific salt-sensitive spectrum of antimicrobial activity. *FASEB J.* 2001;15(10):1819-1821. Quinones-Mateu ME, Lederman MM, Feng Z, et al. Human epithelial β -defensins 2 and 3 inhibit HIV-1 replication. *AIDS.* 2003;17(16):F39-F48.