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NT-proBNP Canine

NT-Pro-B-type Natriuretic Protein Canine Recombinant
CYK0487

Product Overview

Name	NT-proBNP Canine

Description

NT-Pro-B-type Natriuretic Protein Canine Recombinant

Synonyms

NPPB, Natriuretic Peptide Precursor B, BNP, B-type Natriuretic Peptide.

Source

Escherichia Coli.

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

NT-proBNP was lyophilized from 10mM potassium phosphate, pH 7.4 and 150 mM NaCl.

Stability

Lyophilized NT-proBNP although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution NT-Pro B-type Natriuretic Protein should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

Purity

Greater than 95.0% as determined by SDS-PAGE.

Solubility

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

Background

N-terminal pro-brain natriuretic peptide, or NT-proBNP, has emerged as a significant biomarker in cardiovascular medicine, providing crucial insights into heart function and aiding in the diagnosis and management of heart-related conditions. This peptide, released in response to cardiac stress, reflects the heart's intricate signaling mechanisms and physiological responses. The study of NT-proBNP, especially in its recombinant form, has not only deepened our understanding of heart diseases but has also led to the development of advanced diagnostic tools and potential therapeutic interventions. This research delves into the world of NT-proBNP Recombinant Protein, exploring

its biochemical intricacies, physiological roles, and its profound impact on cardiovascular healthcare. Structural and Molecular Complexity of NT-proBNP: NT-proBNP, derived from proBNP through enzymatic cleavage, is a stable peptide fragment. It acts as a precursor to the biologically active B-type natriuretic peptide (BNP) hormone. Understanding the molecular structure and processing of NT-proBNP is essential for unraveling the regulatory mechanisms governing its release and its significance in cardiovascular physiology. Physiological Significance in Heart Function: BNP and its precursor, NT-proBNP, play pivotal roles in cardiac homeostasis. They are secreted by ventricular myocardial cells in response to increased wall stress, primarily due to volume and pressure overload. Elevated levels of NT-proBNP serve as a sensitive indicator of heart failure, reflecting the heart's struggle to maintain effective circulation. Monitoring NT-proBNP levels aids clinicians in diagnosing heart failure, assessing its severity, and guiding therapeutic strategies, ultimately improving patient outcomes. Diagnostic Applications and Clinical Relevance: NT-proBNP assays, often utilizing recombinant NT-proBNP proteins, have become cornerstones in cardiovascular diagnostics. Elevated levels of NT-proBNP are indicative of heart failure, providing vital information for early intervention and personalized treatment plans. Moreover, the peptide's utility extends to predicting cardiovascular events, aiding in risk stratification among individuals with or at risk of heart diseases. The incorporation of NT-proBNP testing into clinical practice has significantly enhanced the accuracy and timeliness of cardiovascular disease diagnosis. Potential Therapeutic Implications: Research into NT-proBNP′s regulatory pathways has opened avenues for therapeutic interventions. Targeted therapies aimed at modulating the BNP system are under investigation, offering potential strategies for managing heart failure and related conditions. By understanding the complex interplay between NT-proBNP, its receptor systems, and cardiac function, researchers are exploring novel therapies to optimize cardiovascular health. NT-proBNP Recombinant Protein, with its intricate involvement in cardiac physiology and its applications in diagnostics and potential therapeutics, stands as a beacon of hope in the realm of cardiovascular medicine. Its role as a diagnostic marker not only aids in early disease detection but also empowers clinicians to tailor treatments, improving patient outcomes and quality of life. As research continues to unravel the complexities of NT-proBNP, it holds the promise of not only enhancing our understanding of heart diseases but also shaping the future of cardiovascular healthcare. This research underscores the vital role of NT-proBNP in cardiovascular medicine, emphasizing its potential to transform the landscape of heart disease diagnosis and treatment.

Precautions

NT-proBNP Canine is for research use only and not for use in diagnostic or therapeutic procedures.

Background

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medicine, providing crucial insights into heart function and aiding in the diagnosis and management of heart-related conditions. This peptide, released in response to cardiac stress, reflects the heart's intricate signaling mechanisms and physiological responses. The study of NT-proBNP, especially in its recombinant form, has not only deepened our understanding of heart diseases but has also led to the development of advanced diagnostic tools and potential therapeutic interventions. This research delves into the world of NT-proBNP Recombinant Protein, exploring its biochemical intricacies, physiological roles, and its profound impact on cardiovascular healthcare. Structural and Molecular Complexity of NT-proBNP: NT-proBNP, derived from proBNP through enzymatic cleavage, is a stable peptide fragment. It acts as a precursor to the biologically active B-type natriuretic peptide (BNP) hormone. Understanding the molecular structure and processing of NT-proBNP is essential for unraveling the regulatory mechanisms governing its release and its significance in cardiovascular physiology. Physiological Significance in Heart Function: BNP and its precursor, NT-proBNP, play pivotal roles in cardiac homeostasis. They are secreted by ventricular myocardial cells in response to increased wall stress, primarily due to volume and pressure overload. Elevated levels of NT-proBNP serve as a sensitive indicator of heart failure, reflecting the heart's struggle to maintain effective circulation. Monitoring NT-proBNP levels aids clinicians in diagnosing heart failure, assessing its severity, and guiding therapeutic strategies, ultimately improving patient outcomes. Diagnostic Applications and Clinical Relevance: NT-proBNP assays, often utilizing recombinant NT-proBNP proteins, have become cornerstones in cardiovascular diagnostics. Elevated levels of NT-proBNP are indicative of heart failure, providing vital information for early intervention and personalized treatment plans. Moreover, the peptide's utility extends to predicting cardiovascular events, aiding in risk stratification among individuals with or at risk of heart diseases. The incorporation of NT-proBNP testing into clinical practice has significantly enhanced the accuracy and timeliness of cardiovascular disease diagnosis. Potential Therapeutic Implications: Research into NT-proBNP’s regulatory pathways has opened avenues for therapeutic interventions. Targeted therapies aimed at modulating the BNP system are under investigation, offering potential strategies for managing heart failure and related conditions. By understanding the complex interplay between NT-proBNP, its receptor systems, and cardiac function, researchers are exploring novel therapies to optimize cardiovascular health. NT-proBNP Recombinant Protein, with its intricate involvement in cardiac physiology and its applications in diagnostics and potential therapeutics, stands as a beacon of hope in the realm of cardiovascular medicine. Its role as a diagnostic marker not only aids in early disease detection but also empowers clinicians to tailor treatments, improving patient outcomes and quality of life. As research continues to unravel the complexities of NT-proBNP, it holds the promise of not only enhancing our understanding of heart diseases but also shaping the future of cardiovascular healthcare. This research underscores the vital role of NT-proBNP in cardiovascular medicine, emphasizing its potential to transform the landscape of heart disease diagnosis and treatment.