

TNNI3 Human Native

Cardiac Troponin-I Human

NTP0062

Product Overview

Name

TNNI3 Human Native

Description

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Background

Troponin I, encoded by the TNNI3 gene, is a critical component of the troponin complex in cardiac muscle cells. It plays a central role in the regulation of cardiac muscle contraction by modulating the interaction between actin and myosin filaments. While extensive research has been conducted on troponin I in the context of cardiac diseases, there is a growing need to investigate native human troponin I (TNNI3) in its unmodified form to gain a deeper understanding of its functions, structural significance, and implications for heart health. This research aims to provide a comprehensive exploration of TNNI3 in its native state, shedding light on its various roles and potential applications in cardiology and biomedical research. The primary objective of this research is to elucidate the physiological role of native human TNNI3 in cardiac muscle contraction. Experiments involving human cardiac tissue samples and isolated myocytes will be conducted to investigate how TNNI3 interacts with other components of the troponin complex and influences calcium-mediated muscle contraction. Understanding these mechanisms is fundamental for deciphering the complexities of cardiac muscle physiology and its implications for heart health. The second objective is to assess the clinical relevance of native TNNI3 in cardiac diseases. Clinical studies involving patients with various cardiac conditions will be conducted to evaluate the diagnostic and prognostic value of TNNI3 as a biomarker. These investigations may provide valuable insights into the use of native TNNI3 in the early detection and management of heart diseases. The third objective is to explore the potential applications of native TNNI3 in biomedical research and drug development. Research will investigate the use of native TNNI3-expressing cells as models for studying cardiac disorders and for developing novel therapeutic interventions targeting the troponin complex. By delving into the functions and roles of native human TNNI3, this research aims to expand our knowledge of cardiac muscle physiology, its implications for cardiac diseases, and its potential applications in cardiology and biomedical research.