

TNNT3 Human

Fast Skeletal Troponin T Human Recombinant

RCP2406

Product Overview

Name	TNNT3 Human
Accession(Primary)	P45378
Description	Fast Skeletal Troponin T Human Recombinant

Target information (P45378)

Gene Name

About Gene Symbol

Background

Troponin T3 Fast Skeletal Type (TNNT3) is a pivotal protein in the regulation of muscle contraction, specifically in fast-twitch skeletal muscles. The TNNT3 human recombinant, a product of cutting-edge biotechnology, offers a powerful tool to delve into the intricate molecular characteristics and multifaceted roles of this essential protein. This research aims to shed light on the molecular intricacies of TNNT3 and explore its significance beyond muscle contraction. At its core, TNNT3 plays a central role in the troponin complex, which orchestrates muscle contraction by modulating the interaction between actin and myosin filaments. This molecular complex regulates muscle contraction in response to calcium ions (Ca^{2+}), a fundamental process underpinning skeletal muscle function. TNNT3, as a specific isoform of troponin T, contributes to the fine-tuning of muscle contractility. The importance of TNNT3 extends beyond its role in muscle physiology. It is primarily expressed in fast-twitch skeletal muscles responsible for rapid, forceful movements, such as sprinting and jumping. Consequently, TNNT3 is critical for the precise control of fast muscle contractions, ensuring optimal performance during activities requiring speed and power. Furthermore, TNNT3 has gained recognition for its potential relevance in various neuromuscular disorders. Mutations in the TNNT3 gene have been associated with

congenital myopathies, highlighting its clinical significance. Investigating the structural and functional properties of TNNT3 can provide valuable insights into the molecular basis of these disorders and potentially pave the way for therapeutic interventions. The TNNT3 human recombinant serves as a gateway to comprehending the intricacies of this protein's molecular functions and its potential applications beyond muscle contraction. Researchers can leverage this recombinant protein to unravel TNNT3's structural properties, interactions with other muscle proteins, and its implications in neuromuscular diseases. This research endeavor aims to offer a comprehensive analysis of the TNNT3 human recombinant, emphasizing its molecular characteristics, functional roles in muscle contraction, and its relevance in the context of neuromuscular disorders. By exploring the multifaceted nature of TNNT3, we aspire to contribute to a deeper understanding of muscle biology and the potential development of novel therapeutic strategies.