9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

TNNT3 Human

Fast Skeletal Troponin T Human Recombinant
RCP2406

Product Overview

Name	TNNT3 Human
Description	
Fast Skeletal Troponin T Human Recombinant	
Accession (Primary)	P45378
Synonyms	
Troponin T, fast skeletal muscle, TnTf, Beta-TnTF, Fast skeletal muscle troponin T (fTnT).	
Source	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered White lyophilized (freeze-dried) powder.	
Formulation	
TNNT3 was lyophilized in 0.01M HCl, pH 2.0.	
Stability	
Lyophilized Fast Skeletal Troponin T although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution TNNT3 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 TNNT3 in buffer containing 0.01M HCl, pH 2.0 not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.	
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	

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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.

Precautions

TNNT3 Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P45378)

Background

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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.