

TNNI1 Human Native

Troponin I Skeletal Muscle Human

NTP0061

Product Overview

Name	TNNI1 Human Native
Accession(Primary)	P19237
Description	Troponin I Skeletal Muscle Human

Target information (P19237)

Gene Name

About Gene Symbol

Background

Troponin I, specifically the skeletal muscle isoform encoded by the TNNI1 gene, is a crucial regulator of muscle contraction. It functions as part of the troponin complex, which controls the interaction between actin and myosin filaments during muscle contraction. While extensive research has been conducted on troponin I in the context of cardiac muscle and cardiac diseases, the study of native human skeletal muscle troponin I remains an important but relatively understudied area. This research aims to provide a comprehensive exploration of native human skeletal muscle troponin I (TNNI1), elucidating its functions, structural significance, and potential applications in musculoskeletal research and clinical medicine. The primary objective of this research is to elucidate the physiological role of native human skeletal muscle TNNI1 in muscle contraction. Experiments involving human skeletal muscle tissue samples and isolated muscle fibers will be conducted to investigate how TNNI1 interacts with other components of the troponin complex and influences calcium-mediated muscle contraction. Understanding these mechanisms is fundamental for deciphering the complexities of skeletal muscle physiology and its implications for musculoskeletal health. The second objective is to assess the clinical relevance of native TNNI1 in muscle-related diseases. Clinical studies involving patients with various

neuromuscular and muscle-wasting conditions will be conducted to evaluate the diagnostic and prognostic value of TNNI1 as a biomarker. These investigations may provide valuable insights into the use of native TNNI1 in the early detection and management of muscle disorders. The third objective is to explore the potential applications of native TNNI1 in musculoskeletal research and therapeutic development. Research will investigate the use of native TNNI1-expressing cells and tissues as models for studying muscle disorders and for developing novel therapeutic interventions targeting the troponin complex. By delving into the functions and roles of native human skeletal muscle TNNI1, this research aims to expand our knowledge of skeletal muscle physiology, its implications for muscle-related diseases, and its potential applications in musculoskeletal research and clinical medicine.