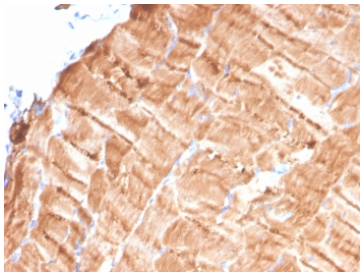
TPM1 Antibody / Muscle Contractile Protein Antibody [clone TPM1/4510] (V4387)

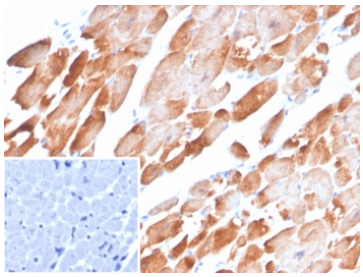
Catalog No.	Formulation	Size
V4387-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4387-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4387SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

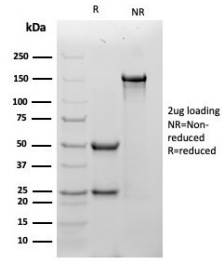
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1
Clone Name	TPM1/4510
Purity	Protein A/G affinity
UniProt	P04268
Localization	Cytoplasm, Cytoskeleton
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 minutes at RT
Limitations	This TPM1 Antibody / Muscle Contractile Protein Antibody is available for research use only.



TPM1 Antibody Human Skeletal Muscle IHC. Immunohistochemical staining of FFPE human skeletal muscle tissue using TPM1 Antibody / Muscle Contractile Protein Antibody (clone TPM1/4510) demonstrates strong cytoplasmic HRP-DAB brown staining throughout skeletal muscle fibers. The staining pattern is consistent with expression of TPM1 (Tropomyosin Alpha-1 Chain), an actin-binding protein that forms a critical component of the thin filament apparatus and regulates actin-myosin interactions during muscle contraction. Robust immunoreactivity within myofibers highlights the essential role of TPM1 in sarcomere organization, contractile function, and maintenance of skeletal muscle structure. HIER: boil tissue sections in pH 9, 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



TPM1 Antibody Human Heart IHC. Immunohistochemical staining of FFPE human heart tissue using TPM1 Antibody / Muscle Contractile Protein Antibody (clone TPM1/4510) demonstrates strong cytoplasmic HRP-DAB brown staining throughout cardiomyocytes. The staining pattern is consistent with expression of TPM1 (Tropomyosin Alpha-1 Chain), a major actin-binding protein of the sarcomeric thin filament that regulates actin-myosin interactions and contributes to cardiac muscle contraction. Robust immunoreactivity within cardiac muscle fibers highlights the essential role of TPM1 in sarcomere organization, myocardial contractility, and maintenance of normal heart function. The inset shows a negative control section in which PBS was used in place of the primary antibody, confirming staining specificity. HIER: boil tissue sections in pH 9, 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



SDS-PAGE analysis of purified, BSA-free Tropomyosin antibody (clone TPM1/4510) as confirmation of integrity and purity.

Description

TPM1 Antibody / Muscle Contractile Protein Antibody recognizes TPM1 (Tropomyosin Alpha-1 Chain), a highly conserved actin-binding protein that serves as a critical component of the contractile machinery in both cardiac and skeletal muscle. TPM1 belongs to the tropomyosin family of coiled-coil proteins that polymerize along the length of actin filaments, stabilizing filament structure and regulating interactions between actin and myosin. Through these functions, TPM1 contributes directly to force generation, sarcomere organization, muscle contraction, and maintenance of cellular architecture. Because of its central role in actin filament regulation, TPM1 is essential for normal muscle development and physiological function.

TPM1 Antibody is widely used for studying striated muscle biology and the molecular mechanisms that govern muscle contraction. Within the sarcomere, tropomyosin works together with the troponin complex to control access of myosin heads to actin-binding sites. In response to calcium signaling, tropomyosin undergoes positional changes that allow coordinated actin-myosin interactions and efficient contractile activity. This regulatory function places TPM1 at the core of the excitation-contraction coupling process that enables both cardiac and skeletal muscle tissues to generate force and maintain normal physiological performance.

TPM1 Antibody is also valuable for investigations of muscle development and differentiation. Expression of TPM1 increases during myogenesis as precursor cells mature into functional muscle fibers. Proper assembly of tropomyosin-containing actin filaments is required for formation of organized sarcomeres and the acquisition of contractile competence. As a result, TPM1 serves as an important marker for studies examining myofibrillogenesis, muscle maturation, and developmental processes affecting cardiac and skeletal muscle tissues. The protein is frequently evaluated in developmental biology models designed to investigate the mechanisms that regulate muscle formation and tissue organization.

TPM1 Antibody has significant importance in cardiovascular research. TPM1 is highly expressed in cardiac muscle, where it contributes to maintenance of sarcomere integrity and regulation of myocardial contractility. Genetic alterations affecting TPM1 have been associated with inherited cardiomyopathies, impaired cardiac performance, and structural abnormalities of the heart. Because contractile dysfunction represents a common feature of many cardiovascular disorders, TPM1 remains an important target for investigations of cardiac development, myocardial remodeling, and disease-associated changes in contractile protein networks. Studies of TPM1 expression can provide valuable insights into the molecular pathways that support normal heart function and cardiovascular health.

TPM1 Antibody is additionally useful for examining cytoskeletal organization outside of traditional muscle systems. Tropomyosin family proteins regulate specialized actin filament populations throughout the cell and influence interactions with numerous actin-associated proteins. Through these activities, TPM1 contributes to cellular shape, mechanical stability, intracellular transport, and regulation of cell motility. These broader cytoskeletal functions have generated interest in TPM1 within fields that extend beyond muscle biology, including cell structure, tissue organization, and signal transduction research.

TPM1 Antibody has also attracted attention in cancer and translational research. Altered expression of tropomyosin family members has been reported in a variety of tumor types, where changes in cytoskeletal organization can influence cell morphology, migration, adhesion, and invasive behavior. Although TPM1 is best known for its role in muscle contraction, its involvement in actin filament regulation has led investigators to explore potential roles in tumor progression and cellular transformation. Consequently, TPM1 continues to be evaluated as a biomarker in studies of both normal cellular physiology and disease-associated cytoskeletal remodeling.

TPM1 Antibody, clone TPM1/4510, supports research involving muscle development, cardiac biology, skeletal muscle physiology, sarcomere organization, actin filament regulation, cytoskeletal dynamics, cardiovascular disease, and cellular differentiation. Because TPM1 occupies a central position within the actin-based contractile apparatus while simultaneously contributing to broader cytoskeletal functions, it remains an important target for studies of muscle function, developmental biology, and translational biomedical research.

Researchers studying cardiac development, muscle contraction, sarcomere organization, and cardiovascular disease mechanisms may also be interested in our comprehensive collection of Cardiovascular Antibodies.

Application Notes

Optimal dilution of the TPM1 Antibody / Muscle Contractile Protein Antibody should be determined by the researcher.

Immunogen

Recombinant full-length protein was used as the immunogen for the Alpha Tropomyosin / TPM1 antibody.

Storage

Aliquot the Alpha Tropomyosin / TPM1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

TPM1 Antibody, Tropomyosin Alpha-1 Chain Antibody, Alpha Tropomyosin Antibody, Sarcomeric Tropomyosin Antibody, Muscle Contractile Protein Antibody, Actin Binding Protein Antibody, Thin Filament Protein Antibody, Cardiac Muscle Protein Antibody

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