TPM1 Protein, Human (His)

Cat. No.:	HY-P74502
Synonyms:	Tropomyosin alpha-1 chain; Tropomyosin-1; TPM1; C15orf13; TMSA
Species:	Human
Source:	E. coli
Accession:	P09493-10/NP_000357.3 (M1-M284)
Gene ID:	7168
Molecular Weight:	Approximately 35 kDa

PROPERTIES

AA Sequence	MDAIKKKMQM LKLDKENALD RAEQAEADKK AAEDRSKQLE DELVSLQKKL KGTEDELDKY SEALKDAQEK LELAEKKATD AEADVASLNR RIQLVEEELD RAQERLATAL QKLEEAEKAA DESERGMKVI ESRAQKDEEK MEIQEIQLKE AKHIAEDADR KYEEVARKLV IIESDLERAE ERAELSEGQV RQLEEQLRIM DQTLKALMAA EDKYSQKEDR YEEEIKVLSD KLKEAETRAE FAERSVTKLE KSIDDLEDEL YAQKLKYKAI SEELDHALND MTSM
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, 10% Glycerol, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	TPM1 Protein, a member of the tropomyosin family, belongs to a highly conserved group of actin-binding proteins crucial for the contractile system in striated and smooth muscles, as well as the cytoskeleton of non-muscle cells. Comprising two alpha-helical chains arranged as a coiled-coil, tropomyosin polymerizes along the grooves of actin filaments, providing structural stability. This protein, a key alpha helical chain, serves as the predominant tropomyosin in striated muscle, where

it collaborates with the troponin complex to regulate the calcium-dependent interaction between actin and myosin during muscle contraction. In smooth muscle and non-muscle cells, alternative splicing yields various isoforms. Mutations in the TPM1 gene are associated with type 3 familial hypertrophic cardiomyopathy and dilated cardiomyopathy 1Y. Moreover, TPM1 displays biased expression, with notable levels observed in the heart and prostate, along with nine other tissues, underscoring its importance in diverse physiological contexts.

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