

Product Specification Sheet

Mouse Monoclonal Anti-Human Troponin-I Antibodies and controls

Cat. # TNIC16-M	Mouse Monoclonal anti-Human Troponin-I IgG	SIZE: 100 ug
Cat. # TNIC15-C	Purified Human Human Troponin-I protein W. blot +ve control	SIZE: 100 ul

Troponin is a complex of three regulatory proteins that is integral to muscle contraction in skeletal and cardiac muscle, but not smooth muscle. Both cardiac and skeletal muscles are controlled by changes in the intracellular calcium concentration. When calcium rises, the muscles contract, and when calcium falls the muscles relax. Troponin is a component of thin filaments (along with actin and tropomyosin), and is the protein to which calcium binds to accomplish this regulation. Troponin has three subunits, TnC, TnI, and TnT. When calcium is bound to specific sites on TnC, tropomyosin rolls out of the way of the actin filament active sites, so that myosin (a molecular motor organized in muscle thick filaments) can attach to the thin filament and produce force and/or movement. In the absence of calcium, tropomyosin interferes with this action of myosin, and therefore muscles remain relaxed. Troponin I has also been shown to inhibit angiogenesis in vivo and in vitro.

Individual subunits serve different functions:

Troponin C binds to calcium ions to produce a conformational change in TnI

Troponin T binds to tropomyosin, interlocking them to form a troponin-tropomyosin complex

Troponin I binds to actin in thin myofilaments to hold the troponin-tropomyosin complex in place

Troponin-I tissue specific subtypes are:

Slow-twitch skeletal muscle isoform troponin I, TNNI1 (1q31.3)

Fast-twitch skeletal muscle isoform troponin I, TNNI2 (11p15.5)

Cardiac troponin I, TNNI3 (19q13.4).

The cardiac isoform (cTnI) is about 40% dissimilar, has a molecular weight of 22,500 daltons, and has 31 additional amino acid residues that are not present on the skeletal isoforms.

Human Troponin-I (#P19237-1; 187 aa) is expressed at the highest levels in human skeletal muscle (e.g. gastrocnemius muscle), differentiated cultures of primary human muscle cells and rhabdomyosarcoma cells cultured in low serum medium. Expressed in C2 muscle cell myoblasts and myotubes.

Source of Antigen and Antibodies

Antigen	Purified human Cardiac Troponin-I
Ab Host/type	Mouse, monoclonal, IgG purified over Protein A/G Agarose (Cat # TNIC16-M) supplied in PBS+0.1% BSA, 0.05% azide
2-Ab	Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)
-ve control IgG	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Recombinant human Cardiac Troponin-I (>98% pure, ~24 Kda), Western blot +ve control (Cat # TNIC15-C) is supplied in SDS-PAGE sample buffer (reduced). Load 10 ul/lane of TNIC15-C for

good visibility with antibody Cat # TNIC16-M. Store at -20°C in suitable size aliquots. SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the TNIC15-C solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. Do not freeze, thaw, or heat repeatedly

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

(100 ug/100ul (solution (lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA, 0.05% azide
Reconstitute powder in PBS at 1mg/ml

Storage

Short-term: unopened, undiluted liquid vials at -20°C and powder at 4°C or -20°C..

Long-term: at -20°C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20°C or below.

Shipping: 4°C for solutions and room temp for powder.

Recommended Usage

Western Blotting (1:1K-2K antibody using ECL technique).

ELISA: Control protein can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested.

Specificity & Cross-reactivity

This antibody reacts with human cardiac Troponin I. There is no cross reactivity human skeletal Troponin I. Antibody crossreactivity in various species is not established. Purified human cardiac Troponin I (#TNIC15-C) is available for control studies.

General References: Wade r (1990) Genomics 7, 346-357; Corin SJ (1994) JBC 269, 10651;

*This product is for In vitro research use only.

Related material available from ADI

Recombinant Human, mouse, bovine, pig, rabbit, rat, dog, monkey Troponin-I, -C, -T purified proteins, Antibodies

ELISA kits for human and other species Troponin-I, Troponin-C, Troponin-T

TNIC16-M-C

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