

Troponin I (cardiac) Antibody
Rabbit polyclonal antibody
Catalog # AN1222

Specification

Troponin I (cardiac) Antibody - Product Information

Application	WB
Primary Accession	P48787
Reactivity	Mouse, Rat
Host	Rabbit
Clonality	polyclonal
Calculated MW	25 KDa

Troponin I (cardiac) Antibody - Additional Information

Gene ID	21954
Gene Name	TNNI3

Other Names

Troponin I, cardiac muscle, Cardiac troponin I, Tnni3

Target/Specificity

Fusion protein of complete mouse cardiac troponin 1.

Dilution

WB~~ 1:2000

Format

Unpurified neat serum.

Antibody Specificity

Specific for the ~25k cardiac troponin I protein.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

Troponin I (cardiac) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Shipping

Blue Ice

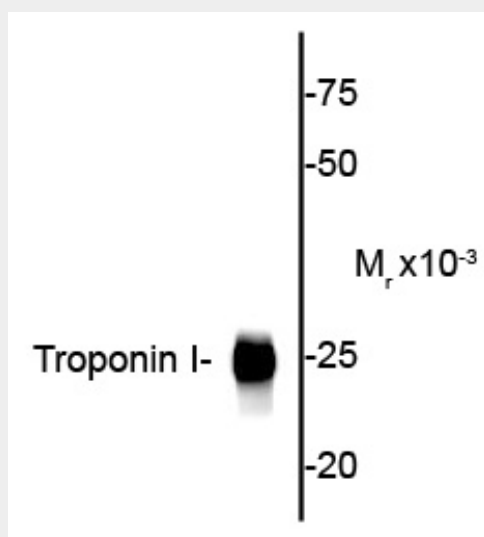
Troponin I (cardiac) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)

- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Troponin I (cardiac) Antibody - Images



Western blot of 20 ug of mouse heart lysate showing specific immunolabeling of the ~25k cardiac troponin I protein.

Troponin I (cardiac) Antibody - Background

Troponin I (cTnI) is 1 of 3 subunits, along with troponin C (TnC) and troponin T (TnT) of troponin complex found in cardiac muscle. cTnI binds to actin in thin myofilaments to hold the troponin-tropomyosin complex in place. Phosphorylation of cardiac isoform of TnI at serines 22,23 in the unique amino-terminal end molecule decreases the calcium sensitivity of the sarcomere, promotes calcium dissociation from troponin C and by extension enhances rates of cross-bridge cycling and diastolic relaxation (Noland, Jr. et al., 1995; Noland et al., 1989). In addition, studies using reconstituted fibers and mutational analysis have shown that PKC phosphorylation of TnI (largely at Ser43) inhibits the actin-cross bridge reaction and reduces the Ca⁺⁺ dependent actomyosin ATPase rate as well as the calcium sensitivity of force generation (Noland, Jr. and Kuo, 1991). Phosphorylation at Thr144 (mediated by several PKC isoforms) reduces maximal tension development and cross-bridge cycling rates (Sumandea et al., 2008). Importantly, changes in the phosphorylation at each of these sites have been shown to be stage-specific with regard to cardiac disease progression (Walker et al., 2010).

Troponin I (cardiac) Antibody - References

Noland TA, Jr., Guo XD, Raynor RL, Jideama NM, Averyhart-Fullard V, Solaro RJ, Kuo JF (1995) Cardiac troponin I mutants - Phosphorylation by protein kinases C and A and regulation of Ca²⁺-stimulated MgATPase of reconstituted actomyosin S-1. *J Biol Chem* 270: 25445-25454.
Noland TA, Jr., Kuo JF (1991) Protein kinase C phosphorylation of cardiac troponin I or troponin T inhibits Ca²⁺(+)-stimulated actomyosin MgATPase activity. *J Biol Chem* 266: 4974-4978.
Noland TAJr, Raynor RL, Kuo JF (1989) Identification of sites phosphorylated in bovine cardiac troponin I and troponin T by protein kinase C and comparative substrate activity of synthetic

peptides containing the phosphorylation sites. J Biol Chem 264: 20778-20785.

Sumandea MP, Rybin VO, Hinken AC, Wang C, Kobayashi T, Harleton E, Sievert G, Balke CW, Feinmark SJ, Solaro RJ, Steinberg SF (2008) Tyrosine phosphorylation modifies protein kinase C delta-dependent phosphorylation of cardiac troponin I. J Biol Chem 283: 22680-22689.

Walker LA, Walker JS, Ambler SK, Buttrick PM (2010) Stage-specific changes in myofilament protein phosphorylation following myocardial infarction in mice. J Mol Cell Cardiol 48: 1180-1186.