Anti-Troponin I, cardiac (cTnI) Antibody

Catalog #: 2010-TNI  Size: 100 µl

Cite this Antibody: PhosphoSolutions Cat# 2010-TNI, RRID:AB_2492267

Host  Applications  Species Tested  Species Reactivity*  Molecular Reference
Rabbit  WB  1:2000  M, R  ~25 kDa

Product Description: Rabbit polyclonal antibody.

Biological Significance: 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).

Antigen: Fusion protein of the mouse cardiac troponin I holoprotein.

Antibody Specificity: Specific for endogenous levels of the ~25 kDa cardiac troponin I protein.

Purification Method: Unpurified neat serum.

Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl neat serum.

Storage and Stability: Shipped on blue ice. Store at −20°C in undiluted aliquots; stable for at least 1 year. Avoid freeze/thaw cycles.

Western blot of 20 µg of mouse heart lysate showing specific immunolabeling of the ~25 kDa cardiac troponin I protein.
General References


Noland TA, Jr., Kuo JF (1991) Protein kinase C phosphorylation of cardiac troponin I or troponin T inhibits Ca\(^{2+}\)-stimulated actomyosin MgATPase activity. J Biol Chem 266: 4974-4978.

