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## Anti-cTnI: Mouse Cardiac Troponin Antibody

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### Description

**BACKGROUND** Troponin I (TnI), along with Troponin T (TnT) and Troponin C (TnC), is one of 3 subunits that form the Troponin complex of the thin filaments of striated muscle, which confers calcium-sensitivity to striated muscle actomyosin ATPase activity. TnI is the inhibitory subunit; blocking actin-myosin interactions and thereby mediating striated muscle relaxation. The TnI subfamily contains three genes: TnI-skeletal-fast-twitch, TnI-skeletal-slow-twitch, and TnI-cardiac. cTnI gene encodes the TnI-cardiac protein and is exclusively expressed in cardiac muscle tissues. Mutations in cTnI gene cause familial hypertrophic cardiomyopathy type 7 (CMH7) and familial restrictive cardiomyopathy (RCM).<sup>1</sup>

There is evidence for PKC and PKA-dependent multisite phosphorylation of cardiac troponin I (cTnI) at Ser-23 and Ser-24 (also PKA sites) in the cardiac-specific N-terminal extension and at Thr-144, a unique residue in the inhibitory region.<sup>2,3</sup> p90RSK is also involved in this phosphorylation process.<sup>2</sup>

The functional effect of these phosphorylations may be involved in regulation of intramolecular interaction between the N-terminal extension and the inhibitory region of cTnI and depress the actomyosin interaction. It may be important during the progression of heart failure.

### REFERENCES

1. Sleeper, M.M. et al: *J. Veterin. Intern Med.* 15:501-3, 2008
2. Itoh, S. et al: *J. Biol. Chem.* 280:24135-42, 2005
3. Chandra, M. et al: *Biochem.* 36:13305-11, 1997

*Products are for research use only. They are not intended for human, animal, or diagnostic applications.*



[1]  
(Click to Enlarge)  
**Top:** Western Blot detection of cTnI proteins in mouse heart tissue lysate using cTnI Antibody. **Bottom:** This antibody stains paraffin-embedded human cardiac muscle tissue in immunohistochemical analysis.

## Details

Cat.No.:	CP10060
Antigen:	Purified recombinant human cTnI proteins expressed in <i>E. coli</i> .
Isotype:	Mouse IgG1
Species & predicted species cross-reactivity ( ):	Human, Mouse
Applications & Suggested starting dilutions:*	WB 1:500 - 1:1000 IP n/d IHC 1:200 - 1:1000 ICC n/d FACS n/d
Predicted Molecular Weight of protein:	23 kDa
Specificity/Sensitivity:	Detects cTnI proteins without cross-reactivity with other family members.
Storage:	Store at -20°C, 4°C for frequent use. Avoid repeated freeze-thaw cycles.

\*Optimal working dilutions must be determined by end user.

## Products

## Resources/Documents

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## Misc. Links

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