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Anti-cTnI: Mouse Cardiac Troponin Antibody

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Product Sheet CP10060

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).¹

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.^{2,3} p90RSK is also involved in this phosphorylation process.²

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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