

## 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 acto-myosin 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

## TECHNICAL INFORMATION

### Source:

ctnI antibody is a mouse monoclonal antibody raised against purified recombinant human cTnI proteins expressed in *E. coli*.

### Specificity and Sensitivity:

This antibody detects cTnI proteins without cross-reactivity with other family members.

**Storage Buffer:** PBS and 30% glycerol

### Storage:

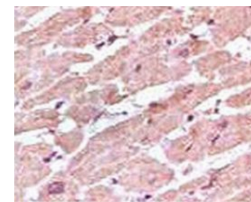
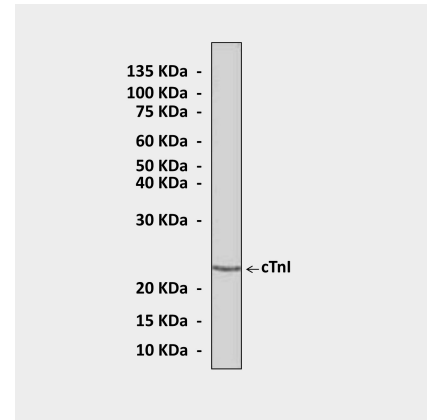
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

## APPLICATIONS

Application:	*Dilution:
WB	1:500-1000
IP	n/d
IHC	1:200-1000
ICC	n/d
FACS	n/d

\*Optimal dilutions must be determined by end user.

## QUALITY CONTROL DATA



**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.

