

## Product Specification Sheet

### Rat Cardiac Troponin-I

□ **Cat. #** TNIC32-N-25

Troponin-I, Rat Cardiac, pure protein

**SIZE:** 25 ug

Troponins are protein components of striated muscle. There are three different troponins: troponin C, troponin T and troponin I. Troponin T (cTnT) and troponin I (cTnI) are released only following cardiac damage. They are present for, and remain elevated, a long time. Unlike CK and CK-MB, cTnT and cTnI are released for much longer with cTnI detectable in the blood for up to 5 days and cTnT for 7-10 days following MI. This allows an MI to be detected if the patient presents late.

Troponin T and I are very sensitive. There is always a low level release of CK and CK-MB from skeletal muscle at a low level all the time so there is always a background value. This is not the case for the cardiac structural proteins such as cTnT and cTnI and therefore, they are very sensitive. Studies have revealed that about one third of patients admitted with unstable angina, in which MI was apparently excluded by CK and CK-MB measurement, have raised levels of cTnT and cTnI.

Elevation of cTnT or cTnI is absolutely indicative of cardiac damage, but this can occur as a result of causes other than MI e.g. myocarditis, coronary artery spasm from cocaine, severe cardiac failure, cardiac trauma from surgery or road traffic accident, and pulmonary embolus can cause cardiac damage with an accompanying elevation of cardiac troponin(s). Failure to show a rise in cTnT or cTnI does not exclude the diagnosis of ischemic heart disease.

Both cTnT and cTnI may be elevated in patients with chronic renal failure and indicate a higher long-term risk of death. They can be distinguished from changes due to myocardial infarction by repeating the tests. Myocardial infarction causes a rise and fall in cTnT or cTnI, but in renal failure the elevated levels are sustained.

cTnI is a part of the troponin complex. It binds to actin in thin myofilaments to hold the actin-tropomyosin complex in place. Because of it myosin cannot bind actin in relaxed muscle. When calcium binds to the Troponin C it causes conformational changes which lead to dislocation of troponin I and finally tropomyosin leaves the binding site for myosin on actin leading to contraction of muscle. The letter I is given due to its inhibitory character.

#### Source of Antigen and Antibodies

Recombinant cardiac Troponin I was purified from E.coli extracts. by ion-exchange chromatography in conjunction with calcium dependent affinity chromatography on troponin-C agarose. Purified protein (cat # TNIC32-N-25) is formulated in 8M Urea, 50 mM Tris.(pH 8.0) (see lot sp conc on the vial). Purified cTnI is ~24 kDa and is >90% pure.

This preparation can be used for ELISA or diluted in other appropriate buffers.

Store frozen in suitable aliquots at -20 °C or lower.

#### Purified protein

- 25 ug/vial
- solution
- lyophilized powder

**Reconstitute** powder in appropriate buffer in at least 100 ug/ml.

#### Storage

**Short-term:** unopened, undiluted vials for less than a week at 4oC.

**Long-term:** at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at -20oC or below.

**Shipping:** 4oC for solutions and room temp for lyophilized items.

**General References:** Gomes et al. (2002) *Life*. (54): 323–333.

\*This product is for in vitro research use only.

#### Related items

Catalog#	ProdDescription
TMY16-N-25	Tropomyosin, Dog Cardiac, purified protein
TMY17-N-25	Tropomyosin, Human Cardiac, purified protein
TNCC75-N-25	Troponin-C, Human Cardiac, pure protein
TNCC76-N-25	Troponin-C, Recombinant, Human Cardiac, pure protein
TNIC15-A	Anti-Human Troponin-I Cardiac, (peptide 3),
TNIC16-M	Monoclonal Anti-Human Troponin-I, Cardiac,
TNIC25-N-25	Troponin-I, Recombinant, Human Cardiac, pure protein
TNIC26-N-25	Troponin-I, Bovine Cardiac, pure protein
TNIC27-N-25	Troponin-I Mouse Cardiac, pure protein
TNIC28-N-25	Troponin-I Pig Cardiac, pure protein
TNIC29-N-25	Troponin-ITC Complex Pig Cardiac , pure protein
TNIC31-N-25	Troponin-I Rabbit Cardiac, pure protein
TNIC32-N-25	Troponin-I Rat Cardiac, pure protein
TNIC33-N-25	Troponin-I, Dog Cardiac, pure protein
TNIM49-N-25	Troponin-C Rabbit Skeletal Muscle, pure protein
TNIM50-N-25	Troponin-I Rat Skeletal Muscle, pure protein
TNIM51-N-25	Troponin-I, Chicken Skeletal Muscle, pure protein
TNIM53-N-25	Troponin-I Human Skeletal Muscle, pure protein
TNTC55-A	Monoclonal Anti-Human Troponin-T, Cardiac,
TNTC65-N-25	Troponin-T, Human Cardiac, pure protein

TNIC32-N-25

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