



Human Cardiac Troponin I Polyclonal Antibody

Antigen Affinity-Purified Anti-Human Cardiac Troponin I Rabbit Antibody

Catalog Number: GR126007

Background

Troponin is a complex of three regulatory proteins (troponin C, troponin I, and troponin T) that is integral to muscle contraction in skeletal muscle and cardiac muscle, but not smooth muscle. Cardiac Troponin I (cTnI) is a protein that in bovines is encoded by the *TNNI3* gene.^[1] It is a tissue-specific subtype of troponin I. It has been shown to interact with PKD2L1,^[2] Troponin C type 1^[3] and Polycystic kidney disease 2.^[4] An increased level of cTnI in the blood has been shown to be a biomarker of heart disorders, the most important of which is myocardial infarction (MI). Raised troponin levels indicate cardiac muscle cell death as the enzyme is released into the blood upon injury to the heart. It is measured in the blood to differentiate between unstable angina and MI (heart attack) in people with chest pain or acute coronary syndrome. A person who had had a MI would have an area of damaged heart muscle and so would have elevated cardiac troponin levels in the blood.^[5] This can also occur in people with coronary vasospasm, a type of MI involving severe constriction of the cardiac blood vessels. After a MI cTnI may remain high for up to 2 weeks.^[6] It is important to note that cTnI is a marker of all heart muscle damage, not just myocardial infarction, which is the most severe form of heart disorder. However, diagnostic criteria for raised troponin indicating MI is currently set by the WHO at a threshold of 2 ug or higher. CTnI is also increased in patients with heart failure, where it also predict mortality and ventricular rhythm abnormalities. They can rise in inflammatory conditions such as myocarditis and pericarditis with heart muscle involvement (myopericarditis). cTnI can also indicate several forms of cardiomyopathy. In a community-based cohort study indicating the importance of silent cardiac damage, troponin I has been shown to predict mortality and first coronary heart disease event in men free from cardiovascular disease at baseline.^[7]

References

1. Kimura A, et al. (1997). *Nat Genet* 16 (4): 379–82.
2. Li Q, et al. (2003). *Biochemistry* (United States) 42 (24): 7618–25.
3. Ward, DG, et al. (2004). *Biochemistry* (United States) 43 (13): 4020–7.
4. Li, Qiang; et al. (2003). *Biochemistry* (United States) 42 (2): 450–7.
5. Antman EM, et al. (1996). *N. Engl. J. Med.* 335 (18): 1342–9.
6. Amsterdam, E. A.; et al. (2014). *Circulation* 130: e344–e426.
7. Zethelius B, et al. (2006). *Circulation* 113 (8): 1071–8.



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Description

Species reactivity: Human

Specificity: Human cardiac troponin I.

Source: Polyclonal rabbit IgG

Purification: Antigen Affinity purified

Immunogen: *E. coli* derived recombinant human cTnI, Arg68-Ser210,

Accession # P19429.

Endotoxin Level: <0.10 EU per 1 µg of the antibody by the LAL method.

Formulation: lyophilized from a solution containing PBS and trehalose (100 µg/ml).

Application

Reconstitution: reconstitute at 0.2 mg/ml in sterile PBS

Recommended concentration:

Western blot: >0.1 µg/ml

Immunocytochemistry: 5-15 µg/ml

ELISA: 0.2-0.6 µg/ml

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months at -20°C.
- 1 month after reconstitution at 4 °C, from date of receipt.
- 6 months after reconstitution at -20°C to -70°C from date of receipt.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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