TEST ID: TRPS
TROPNIN T, 5TH GENERATION, PLASMA

USEFUL FOR
- Aiding in the exclusion of the diagnosis of acute coronary syndrome in a single plasma specimen
- Aiding in the diagnosis of acute coronary syndrome
- Monitoring acute coronary syndromes and estimating prognosis
- Possible utility in monitoring patients with nonischemic causes of cardiac injury

CLINICAL INFORMATION
Troponin T is a myofibrillar protein found in striated musculature. There are 2 types of myofilament: a thick filament containing myosin and a thin filament consisting of 3 different proteins, namely actin, tropomyosin, and troponin. Troponin is itself a complex of 3 protein subunits, which are termed troponin T, troponin I, and troponin C:
- Troponin T binds the troponin complex to tropomyosin
- Troponin I inhibits actomyosin ATPase in relation to the calcium concentration
- Troponin C has 4 binding sites for calcium and mediates calcium dependency

Troponin T is found in free cytosol and structurally bound protein. The unbound pool of troponin T is the source of early protein release in myocardial damage. Troponin T is released from the structural elements at a later stage, corresponding to the degradation of myofibrils that occurs in irreversible myocardial damage. Troponin T becomes elevated 2 to 4 hours after the onset of myocardial necrosis and can remain elevated for up to 14 days, or even longer on occasion.

The most common cause of cardiac injury is myocardial ischemia, ie, acute myocardial infarction. These patients are known to have an adverse short- and long-term prognosis compared to patients with unstable angina and no elevation of troponin T. Many of these patients, especially those with troponin T elevations above 30 ng/L, benefit from an aggressive strategy with anticoagulation and an invasive interventional strategy.

REFERENCE VALUES
- Males: ≤15 ng/L
- Females: ≤10 ng/L

ANALYTIC TIME
Same day/1 day

SPECIMEN REQUIRED
- Type: Plasma Li Heparin
- Collection Container/Tube: Preferred: Lithium heparin gel
  Acceptable: Lithium heparin
- Submission Container/Tube: Plastic vial
- Specimen Volume: 1 mL

CONTENT AND VALUES SUBJECT TO CHANGE. SEE THE MAYO MEDICAL LABORATORIES TEST CATALOG FOR CURRENT INFORMATION.
INTERPRETATION

Values for healthy adults, based upon available literature and clinical guidelines, are 10 ng/L or less for women and 15 ng/L or less for men.

For patients who present with suspected acute coronary syndromes, troponin T values greater than the reference interval with a rising (≥10 ng/L over 2 hours or ≥12 ng/L over 6 hours) pattern are highly suggestive of acute cardiac injury. Decreasing values are indicative of recent cardiac injury. Serial measurement is highly recommended for the diagnosis or exclusion of acute coronary syndromes.

Troponin T values greater than the reference interval are associated with adverse events in patients with ischemic heart disease and many other clinical situations. Clinical judgment is necessary to distinguish patients who have ischemic heart disease from those who do not.

CLINICAL REFERENCE