Troponin T, High Sensitivity (hs-TnT)

CPT Code: 84484
Order Code: 38685
ABN Requirement: No
Synonyms: hs-cTnT; Cardiac Troponin T
Specimen: Plasma
Volume: 1.0 mL
Minimum Volume: 0.5 mL
Container: Lithium Heparin (Green Top) tube

Collection:

1. Draw and gently invert green top tube 8-10 times immediately after draw.
2. Centrifuge for 10 minutes.
3. Pre-squeeze transfer pipet bulb and draw off approximately 2/3 of the upper plasma layer.
   Note: *This ensures that the buffy coat and red cells remain undisturbed.*
4. Aliquot plasma into transport tube labeled as “Lithium Heparin Plasma” and cap tightly. Discard original tube.
5. Store transport tube refrigerated at 2-8°C until ready to ship.

Transport: Store lithium heparin plasma at 2°C to 8°C after collection and ship the same day per packaging instructions included with the provided shipping box.

Stability:

Ambient (15-25°C): Not Acceptable
Refrigerated (2-8°C): 7 days
Frozen (-20°C): 12 months

Causes for Rejection: Specimens other than lithium heparin plasma; improper labeling; samples not stored properly; samples older than stability limits; hemolysis; gross icterus; gross lipemia

Methodology: Electrochemiluminescence Immunoassay (ECLIA)

Turn Around Time: 5 days

Relative Risk Ranges:

Priority Values:

Reference Range: Male <23 ng/L, Female <15 ng/L

High Sensitivity Troponin T (hs-TnT) levels exceeding the gender-specific 99th percentile upper reference limit (males >22 ng/L, females >14 ng/L) may indicate a recent acute myocardial infarction however hs-TnT results should always be assessed in conjunction with the patient's medical history, clinical examination, symptoms of cardiac ischemia, electrocardiogram results, and/or other cardiovascular disease (CVD) diagnostic findings. Elevations in hs-TnT can also be observed in other heart conditions. To distinguish between acute and chronic hs-TnT elevations, serial sampling and clinical correlation is recommended for interpretation. There is literature supporting any hs-TnT >=6 ng/L confers increased CVD relative risk (Oluleye OW, et al. Ann Epidemiol. 2013;23(2):66-73; Seliger SL, et al. Circulation. 2017;135(16):1494-1505).

Clinical Significance: High sensitivity Troponin T (hs-TnT) is an independent prognostic marker that aids in the diagnosis of myocardial infarction (MI) in an acute setting and there is literature supporting its use to identify relative risk of cardiovascular disease (CVD).

Studies have also suggested an increased relative risk of all-cause mortality and other disease processes such as stroke and respiratory disease (Oluleye OW, et al. Ann Epidemiol. 2013;23(2):66-73).

Troponins are released during the process of myocyte necrosis. While they are cardiac specific, they are not specific for MI and detectable levels may be seen in other disease states that involve the heart muscle (e.g. arrhythmia, acute aortic syndrome, acute heart failure, hypertensive crisis, myocarditis, pericarditis, pulmonary embolism and Takotsubo cardiomyopathy). Several guidelines and research activities recognize that improved analytical sensitivity of cardiac troponin assays over the last several years has allowed for detection of other etiologies. Chronic cardiac troponin elevations can be detected in clinically stable patients such as patients with ischemic or non-ischemic heart failure, patients with different forms of cardiomyopathy, renal failure, sepsis, and diabetes.

Elevations are also notable in patients with rhabdomyolysis and polymyositis. Elevated concentrations of cardiac troponin can also occur in other clinical conditions such as heart failure, heart contusion, and drug-induced cardiotoxicity.

Cleveland HeartLab does not perform STAT testing. Given the assay turn around time, this test is not intended for emergent workup of acute myocardial infarction.

Limitations: Samples should not be taken from patients receiving therapy with high biotin doses (i.e. >5 mg/day) until at least 8 hours following the last biotin administration. There is no high-dose hook effect at Troponin T concentrations up to 100,000 ng/L. For assays using antibodies, the possibility exists for interference by heterophile antibodies in the patient's sample. Patients who have been regularly exposed to animals or have received immunotherapy or diagnostic procedures using immunoglobulin or immunoglobulin fragments may produce antibodies, e.g. HAMA, that interfere with immunoassays. Carefully evaluate the results of patients suspected of having these antibodies. In rare cases, interference due to extremely high titers of antibodies to analyte-specific antibodies, streptavidin or ruthenium can occur. The reagent has been formulated to minimize this effect.

The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.