

## Troponin C Protein, Human, Recombinant

### General Information

Synonyms:	TN-C;CMD1Z;TNNC;TNC;CMH13;troponin C type 1 (slow)
Protein Construction:	A DNA sequence encoding the human TNNC1 (NP_003271.1) (Met1-Glu161) was expressed and purified. Predicted N terminal: Ser 21
Species:	Human
Expression Host:	E. coli
Accession:	P63316
Molecular Weight:	18.4 kDa (predicted); 20 kDa (reducing conditions)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing 150 mM NaCl, 10 mM Na <sub>2</sub> HPO <sub>4</sub> , pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

**Stability & Storage:**  
It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

**Shipping:**  
In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Troponin I, also known as TNNC1, is part of the troponin complex. This complex contains 3 subunits: troponin I (TnI), troponin T (TnT) and troponin C (TnC). Troponin I is the inhibitory subunit, blocking actin-myosin interactions and thereby mediating striated muscle relaxation. 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.

Reference

Kalaji FR. et al., 2012, Saudi J Kidney Dis Transpl. 23 (5): 939-45.

Wijnker PJ. et al., 2013, Am J Physiol Heart Circ Physiol. 304 (2): H260-8.

Solaro RJ. et al., 2013, Circ Res. 112 (2): 355-66.

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