

BACKGROUND

Troponin plays a central role in the Ca²⁺ regulation of contraction in vertebrate skeletal and cardiac muscles. It consists of three subunits with distinct structure and function, troponin T (TnT), troponin I (TnI), and troponin C (TnC), and their accurate and complex intermolecular interaction, along with tropomyosin, in response to the rapid rise and fall of Ca²⁺ in cardiac and skeletal myocytes plays a key role in maintaining the normal cardiac pump function and body movement. Troponin I is the inhibitory subunit of troponin, the thin filament regulatory complex which confers calcium-sensitivity to striated muscle actomyosin ATPase activity. Three troponin I genes have been identified in vertebrates that encode the isoforms expressed in adult cardiac muscle (TNNI3), slow skeletal muscle (TNNI1) and fast skeletal muscle (TNNI2), respectively.¹

Mouse studies show that TNNI2 is also present in vascular smooth muscle and may play a role in regulation of smooth muscle function. In addition to muscle tissues, this protein is found in corneal epithelium, cartilage where it is an inhibitor of angiogenesis to inhibit tumor growth and metastasis, and mammary gland where it functions as a co-activator of estrogen receptor-related receptor alpha. TNNI2 also suppresses tumor growth in human ovarian carcinoma. Mutations in TNNI2 gene cause myopathy and distal arthrogyrosis type 2B. Alternatively spliced transcript variants have been found for this gene.²

References:

1. Parmacek, M.S. & Solaro, R.J.: Prog Cardiovasc Dis 47:159-76, 2004
2. Mullen, A.J. & Barton, P.J.R.: Gene 242:313-20, 2000

TECHNICAL INFORMATION

Source:

TNNI2 Antibody is a mouse monoclonal antibody raised against recombinant human TNNI2 fragments expressed in *E. coli*.

Specificity and Sensitivity:

This antibody detects TNNI2 proteins in various cell lysate.

Storage Buffer: PBS and 30% glycerol

Storage:

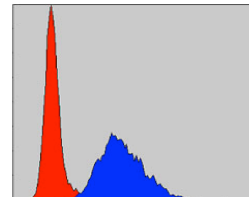
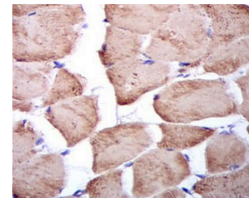
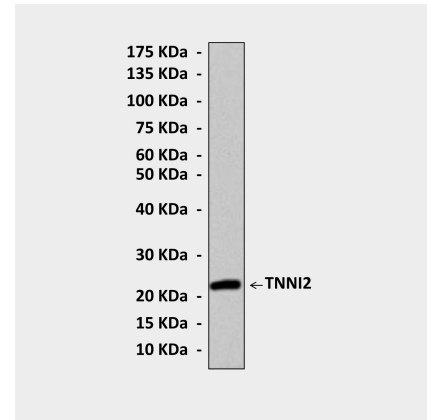
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

| Application: | *Dilution: |
|----------------|------------|
| WB | 1:1000 |
| IP | n/d |
| IHC (Paraffin) | 1:50-200 |
| ICC | n/d |
| FACS | 1:50-200 |

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Top: Western blot detection of recombinant TNNI2 proteins expressed in 293 cells using TNNI2 Antibody.
Middle: This antibody stains paraffin-embedded human striated muscle tissues in IHC analysis.
Bottom: It also detects TNNI2 proteins in NIH3T3 cells in FACS assay (TNNI2: Blue; control mouse IgG: Red)

