Overview

Product name: Anti-Cardiac Troponin I antibody
Description: Rabbit polyclonal to Cardiac Troponin I
Host species: Rabbit
Tested applications: Suitable for: WB, ICC/IF, IHC-Fr, IHC-P, Flow Cyt, ELISA
Species reactivity: Reacts with: Mouse, Rat, Human, Pig
Predicted to work with: Chimpanzee
Immunogen: Synthetic peptide corresponding to Human Cardiac Troponin I aa 1-100 conjugated to keyhole limpet haemocyanin.
(Peptide available as ab47002)
Positive control: This antibody gave a positive signal in the following tissue lysates: Heart (human) tissue lysate, mouse heart tissue.

Properties

Form: Liquid
Storage instructions: Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer: Preservative: 0.02% Sodium Azide
Constituents: 1% BSA, PBS, pH 7.4
Purity: Immunogen affinity purified
Clonality: Polyclonal
Isotype: IgG

Applications

Our Abpromise guarantee covers the use of ab47003 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
**Function**
Troponin I is the inhibitory subunit of troponin, the thin filament regulatory complex which confers calcium-sensitivity to striated muscle actomyosin ATPase activity.

**Involvement in disease**
Defects in TNNI3 are the cause of cardiomyopathy familial hypertrophic type 7 (CMH7) [MIM:613690]. Familial hypertrophic cardiomyopathy is a hereditary heart disorder characterized by ventricular hypertrophy, which is usually asymmetric and often involves the interventricular septum. The symptoms include dyspnea, syncope, collapse, palpitations, and chest pain. They can be readily provoked by exercise. The disorder has inter- and intrafamilial variability ranging from benign to malignant forms with high risk of cardiac failure and sudden cardiac death.

Defects in TNNI3 are the cause of cardiomyopathy familial restrictive type 1 (RCM1) [MIM:115210]. RCM1 is an heart muscle disorder characterized by impaired filling of the ventricles with reduced diastolic volume, in the presence of normal or near normal wall thickness and systolic function.

Defects in TNNI3 are the cause of cardiomyopathy dilated type 2A (CMD2A) [MIM:611880]. Dilated cardiomyopathy is a disorder characterized by ventricular dilation and impaired systolic function, resulting in congestive heart failure and arrhythmia. Patients are at risk of premature death.

Defects in TNNI3 are the cause of cardiomyopathy dilated type 1FF (CMD1FF) [MIM:613286]. Dilated cardiomyopathy is a disorder characterized by ventricular dilation and impaired systolic function, resulting in congestive heart failure and arrhythmia. Patients are at risk of premature death.

**Sequence similarities**
Belongs to the troponin I family.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB</td>
<td></td>
<td>Use a concentration of 1 µg/ml. Detects a band of approximately 26 kDa (predicted molecular weight: 24 kDa). Can be blocked with <em>Human Cardiac Troponin I peptide (ab47002)</em>.</td>
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<tr>
<td>ICC/IF</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
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<tr>
<td>IHC-Fr</td>
<td></td>
<td>1/100.</td>
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<tr>
<td>IHC-P</td>
<td></td>
<td>1/100.</td>
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<tr>
<td>Flow Cyt</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 21909276 <em>ab171870 - Rabbit polyclonal IgG</em>, is suitable for use as an isotype control with this antibody.</td>
</tr>
<tr>
<td>ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
</tbody>
</table>

**Target**

**Function**
Troponin I is the inhibitory subunit of troponin, the thin filament regulatory complex which confers calcium-sensitivity to striated muscle actomyosin ATPase activity.

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**Images**

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*Images*
**Western blot** - Anti-Cardiac Troponin I antibody (ab47003)

All lanes: Anti-Cardiac Troponin I antibody (ab47003) at 1 µg/ml

Lane 1: Human heart tissue lysate - total protein (ab29431)
Lane 2: Human liver tissue lysate - total protein (ab29889)

Lysates/proteins at 10 µg per lane.

**Secondary**

All lanes: IRDye 680 Conjugated Goat Anti-Rabbit IgG (H+L) at 1/10000 dilution

Performed under reducing conditions.

**Predicted band size:** 24 kDa
**Observed band size:** 26 kDa

*why is the actual band size different from the predicted?*

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IHC image of Cardiac Troponin I staining in human heart formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab47003, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.
**Immunocytochemistry/Immunofluorescence - Anti-Cardiac Troponin I antibody (ab47003)**

This image is courtesy of an Abreview submitted by Mrs Jamie Soto

ab74003 staining Cardiac Troponin I in neonatal Rat cardiomyocytes by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with paraformaldehyde, permeabilized in 0.1% Triton X-100 and blocked with 3% BSA for 1 hour at 25°C. Samples were incubated with primary antibody (1/400 in 3% BSA + PBS-T) for 12 hours at 4°C. An AlexaFluor® 594-conjugated Goat anti-rabbit IgG polyclonal (1/500) was used as the secondary antibody.

**Western blot - Anti-Cardiac Troponin I antibody (ab47003)**

**All lanes**: Anti-Cardiac Troponin I antibody (ab47003) at 1 µg/ml

- **Lane 1**: Human heart tissue lysate - total protein (ab29431)
- **Lane 2**: Heart (Mouse) Tissue Lysate
- **Lane 3**: Heart (Rat) Tissue Lysate

Lysates/proteins at 10 µg per lane.

**Secondary**

**All lanes**: Goat Anti-Rabbit IgG H&L (HRP) preadsorbed (ab97080) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

**Predicted band size**: 24 kDa

**Observed band size**: 26 kDa  
Why is the actual band size different from the predicted?

**Additional bands at**: 160 kDa, 80 kDa. We are unsure as to the identity of these extra bands.
**Exposure time:** 3 minutes

**All lanes:** Anti-Cardiac Troponin I antibody (ab47003) at 1/20000 dilution

**All lanes:** Pig Heart whole cell lysate

Lysates/proteins at 4 µg per lane.

**Secondary**

**All lanes:** An HRP-conjugated Goat anti-rabbit polyclonal at 1/20000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

**Predicted band size:** 24 kDa

**Observed band size:** 29 kDa  
*why is the actual band size different from the predicted?*

**Blocking Step:** 20% Serum for 3 hours at 24°C

Immunohistochemical analysis of frozen mouse heart tissue labeling Cardiac Troponin I with ab47003 at 1/100 dilution.
ab47003 staining Cardiac Troponin I in Human cardiomyocytes by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with paraformaldehyde, permeabilized with 0.1% Triton X-100 and blocked with 1% BSA for 30 minutes at 20°C. Samples were incubated with primary antibody (1/200 in PBS + 1% BSA) for 1 hour at 20°C. An undiluted FITC-conjugated Goat anti-rabbit IgG polyclonal was used as the secondary antibody.

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