Product datasheet

Anti-Tropomyosin 3 antibody [3D5AH3AB4] ab113692

Overview

Product name: Anti-Tropomyosin 3 antibody [3D5AH3AB4]
Description: Mouse monoclonal [3D5AH3AB4] to Tropomyosin 3
Host species: Mouse
Tested applications: Suitable for: IHC-P, IP, WB, ICC/IF, Flow Cyt
Species reactivity: Reacts with: Mouse, Rat, Human
Immunogen: Tissue, cells or virus. This information is considered to be commercially sensitive.
Positive control: Human fibroblasts Mouse fibroblasts Rat fibroblasts Human Heart FFPE tissue.
General notes: This antibody clone is manufactured by Abcam.
Product was previously marketed under the MitoSciences sub-brand.
If you require this antibody in a particular buffer formulation or a particular conjugate for your experiments, please contact orders@abcam.com or you can find further information here.

Properties

Form: Liquid
Storage instructions: Shipped at 4°C. Store at +4°C.
Storage buffer: Preservative: 0.02% Sodium azide
Constituent: HEPES buffered saline
Purity: Proprietary Purification
Purification notes: The antibody was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation. Purity >95% by SDS-PAGE.
Clonality: Monoclonal
Clone number: 3D5AH3AB4
Isotype: IgG2b
Light chain type: kappa

Applications

Our Abpromise guarantee covers the use of ab113692 in the following tested applications.
Function
Binds to actin filaments in muscle and non-muscle cells. Plays a central role, in association with the troponin complex, in the calcium dependent regulation of vertebrate striated muscle contraction. Smooth muscle contraction is regulated by interaction with caldesmon. In non-muscle cells is implicated in stabilizing cytoskeleton actin filaments.

Involvement in disease
Defects in TPM3 are the cause of nemaline myopathy type 1 (NEM1) [MIM:609284]. A form of nemaline myopathy with autosomal dominant or recessive inheritance. Nemaline myopathies are muscular disorders characterized by muscle weakness of varying severity and onset, and abnormal thread-or rod-like structures in muscle fibers on histologic examination. Autosomal dominant nemaline myopathy type 1 is characterized by a moderate phenotype with onset between birth and early second decade of life. Weakness is diffuse and symmetric with slow progression often with need for a wheelchair in adulthood. The autosomal recessive form has onset at birth with moderate-to-severe hypotonia and diffuse weakness. In the most severe cases, death can occur before 2 years. Less severe cases have delayed major motor milestones, and these patients may walk, but often need a wheelchair before 10 years.
Defects in TPM3 are a cause of thyroid papillary carcinoma (TPC) [MIM:188550]. TPC is a common tumor of the thyroid that typically arises as an irregular, solid or cystic mass from otherwise normal thyroid tissue. Papillary carcinomas are malignant neoplasm characterized by the formation of numerous, irregular, finger-like projections of fibrous stroma that is covered with a surface layer of neoplastic epithelial cells. Note=A chromosomal aberration involving TPM3 is found in thyroid papillary carcinomas. A rearrangement with NTRK1 generates the TRK fusion transcript by fusing the amino end of isoform 2 of TPM3 to the 3’-end of NTRK1.

Sequence similarities
Belongs to the tropomyosin family.

Domain
The molecule is in a coiled coil structure that is formed by 2 polypeptide chains. The sequence exhibits a prominent seven-residues periodicity.

Cellular localization
Cytoplasm > cytoskeleton.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHC-P</td>
<td></td>
<td>Use a concentration of 10 µg/ml.</td>
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<tr>
<td>IP</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
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<tr>
<td>WB</td>
<td></td>
<td>Use a concentration of 1 µg/ml. Detects a band of approximately 32 kDa (predicted molecular weight: 32 kDa).</td>
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<tr>
<td>ICC/IF</td>
<td></td>
<td>Use a concentration of 2 µg/ml.</td>
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<tr>
<td>Flow Cyt</td>
<td></td>
<td>Use 0.1µg for 10^5 cells.</td>
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<tr>
<td></td>
<td>ab170192</td>
<td>Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.</td>
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</tbody>
</table>

Target

Function
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Western blot - Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692)

All lanes: Anti-Tropomyosin 3 antibody [3D5AH3AB4] (ab113692) at 1 µg/ml

Lane 1: HepG2 (human)
Lane 2: HDFN (human)
Lane 3: H9C2 (rat)
Lane 4: H4IIE (rat)
Lane 5: MEF (mouse)

Lysates/proteins at 20 µg per lane.

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 32 kDa

Overlay histogram showing A431 cells stained with ab113692 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS/10% normal goat serum/0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab113692, 0.1 µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150113) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 1 µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.

ab113692 stained human fibroblast (HDFn) cells, rat cardiomyocytes (H9C2 cells) and mouse embryo fibroblast (MEF) cells. The cells were paraformaldehyde fixed (4%, 20 min) and Triton X-100 permeabilized (0.1%, 15 min). The cells were incubated with the antibody (3D5AH3AB4, 5 µg/ml) for 2h at room temperature or overnight at 4°C. The secondary antibody was (red) Alexa Fluor® 594 goat anti-mouse IgG2b (H+L) at a 1/1000 dilution for 1h. 10% Goat serum was used as the blocking agent for all blocking steps. The target protein locates to cytoskeleton.
IHC image of Tropomyosin 3 staining in Human heart formalin fixed paraffin embedded tissue section, performed on a Leica BondTM 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 ab113692, 10µg/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.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

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