### Overview

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>Anti-F-actin antibody [NH3]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Mouse monoclonal [NH3] to F-actin</td>
</tr>
<tr>
<td><strong>Host species</strong></td>
<td>Mouse</td>
</tr>
<tr>
<td><strong>Specificity</strong></td>
<td>Clone NH3 recognises human Filamentous actin (F-actin) and reportedly also recognizes Globular actin (G-actin). The antibody binds to the N-terminal region of actin, but not to the extreme N-terminal 40 amino acids. In tissue sections the antibody stains the cytoplasm of macrophages strongly, and gives granular, localised nuclear staining of all cell types. As this is a mouse IgM antibody, an anti-mouse IgM secondary antibody must be used to detect this primary.</td>
</tr>
</tbody>
</table>

### Tested applications

**Suitable for:** Flow Cyt, ICC/IF, IHC-R, WB, ELISA, IHC-Fr, IP

### Species reactivity

**Reacts with:** Mouse, Rat, Rabbit, Human

### Immunogen

Human monocytes and U397 cell line.

### Epitope

This antibody is reported to recognise actin in the filamentous form with the epitope likely to be located between residues 120 and 226 of the molecule.

### Positive control

gastrointestinal tissue

### Properties

<table>
<thead>
<tr>
<th><strong>Form</strong></th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage instructions</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Storage buffer</strong></td>
<td>Preservative: 0.1% Sodium azide</td>
</tr>
<tr>
<td><strong>Purity</strong></td>
<td>Purified IgM</td>
</tr>
<tr>
<td><strong>Purification notes</strong></td>
<td>Purified IgM prepared from tissue culture supernatant.</td>
</tr>
<tr>
<td><strong>Clonality</strong></td>
<td>Monoclonal</td>
</tr>
<tr>
<td><strong>Clone number</strong></td>
<td>NH3</td>
</tr>
<tr>
<td><strong>Myeloma</strong></td>
<td>NS1</td>
</tr>
<tr>
<td><strong>Isotype</strong></td>
<td>IgM</td>
</tr>
<tr>
<td><strong>Light chain type</strong></td>
<td>unknown</td>
</tr>
</tbody>
</table>
Function

Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells.

Involvement in disease

Defects in ACTB are a cause of dystonia juvenile-onset (DYTJ) [MIM:607371]. DYTJ is a form of dystonia with juvenile onset. Dystonia is defined by the presence of sustained involuntary muscle contraction, often leading to abnormal postures. DYTJ patients manifest progressive, generalized, dopa-unresponsive dystonia, developmental malformations and sensory hearing loss.

Sequence similarities

Belongs to the actin family.

Post-translational modifications

ISGylated.

Cellular localization

Cytoplasm > cytoskeleton. Localized in cytoplasmic mRNP granules containing untranslated mRNAs.

Applications

Our Abpromise guarantee covers the use of ab205 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Cyt</td>
<td>1/10.</td>
<td>ab91545 - Mouse monoclonal IgM, is suitable for use as an isotype control with this antibody.</td>
</tr>
<tr>
<td>ICC/IF</td>
<td>1/100.</td>
<td>Use an assay dependent concentration.</td>
</tr>
<tr>
<td>IHC-R</td>
<td>1/100 - 1/500. Detects a band of approximately 43 kDa. As this is a mouse IgM antibody, an anti-mouse IgM secondary antibody must be used to detect this primary.</td>
<td></td>
</tr>
<tr>
<td>WB</td>
<td>1/10.</td>
<td>Use at an assay dependent concentration. PubMed: 27336173</td>
</tr>
<tr>
<td>IHC-Fr</td>
<td>Use at an assay dependent concentration.</td>
<td></td>
</tr>
<tr>
<td>IP</td>
<td>Use at an assay dependent concentration.</td>
<td></td>
</tr>
</tbody>
</table>

Target

Images
Anti-F-actin antibody [NH3] (ab205) at 1/100 dilution + Human pancreatic cancer cell line, whole cell lysate at 20 µg

**Secondary**
HRP conjugated goat anti-mouse antibody at 1/2000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

**Observed band size:** 43 kDa

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

**Exposure time:** 1 minute

Immunocytochemistry/ Immunofluorescence analysis of ARPE cells labelling F-actin with ab205. Cells were fixed in 4% paraformaldehyde for 10 min, washed with PBS, and blocked for one hour. Cells were then incubated for 3h at 37°C with Anti-F-actin antibody [NH3] (ab205) at 1/200 dilution. Thereafter, cells were washed 3 times with PBS containing 0.3% Triton-X, incubated with secondary antibody and coverslipped with Fluoroshield containing DAPI as a counter stain. Immunofluorescent signals were detected by confocal microscopy.
Immunohistochemistry (Resin sections) analysis of mouse bone tissue cells labeling F-actin with ab205 at 1/200 dilution. Mouse tibia bone samples were fixed in neutral buffered formalin for 72 hours at room temperature, embedded undecalcified in plastic and sectioned at 5 microns. A polyclonal goat anti-mouse Alexa Fluor® 488 secondary antibody was used at 1/700 dilution. The image shows a 1 micron thick z-projection of the chondrocytes in the proximal tibia growth plate.

Anti-F-actin antibody [NH3] (ab205) at 1/500 dilution + CNS whole tissue lysate at 30 µg

**Secondary**

Goat anti-mouse HRP conjugate at 1/10000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

**Observed band size:** 43 kDa

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

**Exposure time:** 5 minutes

Blocking: 5% milk for 1 hour at 25°C.

Incubation with primary antibody for 15 hours at 4°C in 5% milk + PBS+0.1% Tween 20.
Immunocytochemistry/ Immunofluorescence analysis of mouse cortical neurons labeling F-actin with ab205 at 1/100 dilution. The cells were fixed with Ethanol and permeabilized with 0.2% Triton X-100. A polyclonal goat anti-mouse Cy3 conjugated secondary antibody was used at 1/200 dilution.

ab205 staining F-actin in rat brain tissue by Immunohistochemistry (frozen sections). Tissue was fixed with paraformaldehyde and then blocked with 2% BSA for 1 hour followed by incubation with the primary antibody at a 1/25 dilution for 24 hours. A biotin-conjugated goat anti-mouse IgM was used as secondary antibody at a 1/400 dilution. No permeabilisation step was used.

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