Product datasheet

Anti-Rho antibody [EP487Y] ab40673

Overview

<table>
<thead>
<tr>
<th>Product name</th>
<th>Anti-Rho antibody [EP487Y]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Rabbit monoclonal [EP487Y] to Rho</td>
</tr>
<tr>
<td>Host species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Specificity</td>
<td>This antibody is specific for Rho. It is also expected to detect RhoA, RhoB and RhoC.</td>
</tr>
<tr>
<td>Tested applications</td>
<td>Suitable for: ICC/IF, WB, IHC-P</td>
</tr>
<tr>
<td>Species reactivity</td>
<td>Reacts with: Mouse, Rat, Human</td>
</tr>
<tr>
<td>Immunogen</td>
<td>Synthetic peptide within Human Rho (N terminal). The exact sequence is proprietary.</td>
</tr>
<tr>
<td>Positive control</td>
<td>HL60 cell lysate.</td>
</tr>
<tr>
<td>General notes</td>
<td>Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents. We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team. This product is a recombinant rabbit monoclonal antibody.</td>
</tr>
</tbody>
</table>

Properties

<table>
<thead>
<tr>
<th>Form</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage instructions</td>
<td>Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.</td>
</tr>
</tbody>
</table>
| Storage buffer                | pH: 7.20  
Preservative: 0.01% Sodium azide  
Constituents: 40% Glycerol, 0.05% BSA, 59% PBS |
| Purity                        | Protein A purified |
| Clonality                     | Monoclonal |
Clone number  EP487Y
Isotype  IgG

Applications

Our Abpromise guarantee covers the use of ab40673 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>ICC/IF</td>
<td></td>
<td>1/250.</td>
</tr>
<tr>
<td>WB</td>
<td>★★★★★ 1/1000 - 1/5000. Detects a band of approximately 22 kDa (predicted molecular weight: 21 kDa).</td>
<td></td>
</tr>
<tr>
<td>IHC-P</td>
<td>1/100 - 1/250. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. See IHC antigen retrieval protocol.</td>
<td></td>
</tr>
</tbody>
</table>

Target

Function  Regulates a signal transduction pathway linking plasma membrane receptors to the assembly of focal adhesions and actin stress fibers. Involved in a microtubule-dependent signal that is required for the myosin contractile ring formation during cell cycle cytokinesis. Plays an essential role in cleavage furrow formation. Required for the apical junction formation of keratinocyte cell-cell adhesion. Serves as a target for the yopT cysteine peptidase from Yersinia pestis, vector of the plague, and Yersinia pseudotuberculosis, which causes gastrointestinal disorders. Stimulates PKN2 kinase activity. May be an activator of PLCE1. Activated by ARHGEF2, which promotes the exchange of GDP for GTP. Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. The MEMO1-RHOA-DIAPH1 signaling pathway plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex. It controls the localization of APC and CLASP2 to the cell membrane, via the regulation of GSK3B activity. In turn, membrane-bound APC allows the localization of the MACF1 to the cell membrane, which is required for microtubule capture and stabilization.

Sequence similarities  Belongs to the small GTPase superfamily. Rho family.

Domain  The basic-rich region is essential for yopT recognition and cleavage.

Post-translational modifications  Substrate for botulinum ADP-ribosyltransferase.
Cleaved by yopT protease when the cell is infected by some Yersinia pathogens. This removes the lipid attachment, and leads to its displacement from plasma membrane and to subsequent cytoskeleton cleavage.
AMPylation at Tyr-34 and Thr-37 are mediated by bacterial enzymes in case of infection by H.somnus and V.parahaemolyticus, respectively. AMPylation occurs in the effector region and leads to inactivation of the GTPase activity by preventing the interaction with downstream effectors, thereby inhibiting actin assembly in infected cells. It is unclear whether some human enzyme mediates AMPylation; FICD has such ability in vitro but additional experiments remain to be done to confirm results in vivo.
Phosphorylation by PRKG1 at Ser-188 inactivates RHOA signaling.
Ubiquitinated by the BCR(BACURD1) and BCR(BACURD2) E3 ubiquitin ligase complexes, leading to its degradation by the proteasome, thereby regulating the actin cytoskeleton and cell migration.
**Cellular localization**

Cell membrane. Cytosol > cytoskeleton. Cleavage furrow. Cytosol > cell cortex. Midbody. Localized to cell-cell contacts in calcium-treated keratinocytes (By similarity). Translocates to the equatorial region before furrow formation in an ECT2-dependent manner. Localizes to the equatorial cell cortex (at the site of the presumptive furrow) in early anaphase in an activated form and in a myosin- and actin-independent manner.

**Images**

**Western blot - Anti-Rho antibody [EP487Y] (ab40673)**

All lanes: Anti-Rho antibody [EP487Y] (ab40673) at 1/1000 dilution (purified)

Lane 1: A431 cell lysate
Lane 2: MCF7 cell lysate
Lane 3: HeLa cell lysate
Lane 4: K562 cell lysate
Lane 5: Jurkat cell lysate

Lysates/proteins at 20 µg per lane.

**Secondary**

All lanes: HRP goat anti-rabbit (H+L) at 1/1000 dilution

**Predicted band size**: 21 kDa

**Observed band size**: 22 kDa

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

Blocking buffer: 5% NFDM/TBST

Dilution buffer: 5% NFDM/TBST
Immunohistochemical staining of paraffin embedded human thyroid carcinoma with purified ab40673 at a working dilution of 1 in 250. The secondary antibody used is a HRP polymer for rabbit IgG. The sample is counter-stained with hematoxylin. Antigen retrieval was performed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.

Immunofluorescence staining of MCF7 cells with purified ab40673 at a working dilution of 1 in 250, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti rabbit, used at a dilution of 1 in 500. The cells were fixed in 4% PFA and permeabilized using 0.1% Triton X 100. The negative control is shown in bottom right hand panel - for the negative control, PBS was used as primary, followed by an Alexa Fluor® 488 goat anti-rabbit secondary (ab150077) at a dilution of 1/500.

Anti-Rho antibody [EP487Y] (ab40673) at 1/1000 dilution (purified) + Mouse kidney tissue lysate at 10 µg

**Secondary**
HRP goat anti-rabbit (H+L) at 1/1000 dilution

**Predicted band size**: 21 kDa
**Observed band size**: 22 kDa why is the actual band size different from the predicted?

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST

Anti-Rho antibody [EP487Y] (ab40673) at 1/1000 dilution (purified) + C6 cell lysate at 20 µg

Secondary
HRP goat anti-rabbit (H+L) at 1/1000 dilution

Predicted band size: 21 kDa
Observed band size: 22 kDa why is the actual band size different from the predicted?

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST

Anti-Rho antibody [EP487Y] (ab40673) at 1/5000 dilution (purified) + HL-60 cell lysate at 20 µg

Secondary
HRP goat anti-rabbit (H+L) at 1/1000 dilution

Predicted band size: 21 kDa
Observed band size: 22 kDa why is the actual band size different from the predicted?
Western blot - Anti-Rho antibody [EP487Y] (ab40673) at 1/1000 dilution (purified) + MDA-MB-435 at 20 µg

Secondary
HRP goat anti-rabbit (H+L)

**Predicted band size:** 21 kDa
**Observed band size:** 22 kDa

Why is the actual band size different from the predicted?

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST

**Please note:** All products are “FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES”

**Our Abpromise to you: Quality guaranteed and expert technical support**

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit [https://www.abcam.com/abpromise](https://www.abcam.com/abpromise) or contact our technical team.

**Terms and conditions**

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors