## Overview

<table>
<thead>
<tr>
<th>Product name</th>
<th>Anti-Serine/threonine-protein kinase 4 / MST-1 antibody [EP1465Y]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Rabbit monoclonal [EP1465Y] to Serine/threonine-protein kinase 4 / MST-1</td>
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<tr>
<td>Host species</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Tested applications</td>
<td>Suitable for: Flow Cyt, WB, IHC-P, IHC-Fr, ICC/IF, IP</td>
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<tr>
<td>Species reactivity</td>
<td>Reacts with: Mouse, Rat, Human</td>
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<tr>
<td>Immunogen</td>
<td>Synthetic peptide within Human Serine/threonine-protein kinase 4 / MST-1 aa 1-100 (N terminal). The exact sequence is proprietary.</td>
</tr>
</tbody>
</table>
| General notes      | Previously labelled as Serine/threonine-protein kinase 4 

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.

## Properties

<table>
<thead>
<tr>
<th>Form</th>
<th>Liquid</th>
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</thead>
<tbody>
<tr>
<td>Storage instructions</td>
<td>Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.</td>
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</tbody>
</table>
| Storage buffer | pH: 7.20  
Preservative: 0.01% Sodium azide  
Constituents: 59% PBS, 40% Glycerol, 0.21% BSA |
| Purity     | Protein A purified |
| Clonality  | Monoclonal |
Clone number: EP1465Y
Isotype: IgG

Function: Stress-activated, pro-apoptotic kinase which, following caspase-cleavage, enters the nucleus and induces chromatin condensation followed by internucleosomal DNA fragmentation. Key component of the Hippo signaling pathway which plays a pivotal role in organ size control and tumor suppression by restricting proliferation and promoting apoptosis. The core of this pathway is composed of a kinase cascade wherein MST1/MST2, in complex with its regulatory protein SAV1, phosphorylates and activates LATS1/2 in complex with its regulatory protein MOB1, which in turn phosphorylates and inactivates YAP1 oncoprotein and WWTR1/TAZ. Phosphorylation of YAP1 by LATS2 inhibits its translocation into the nucleus to regulate cellular genes important for cell proliferation, cell death, and cell migration. MST1/MST2 are required to repress proliferation of mature hepatocytes, to prevent activation of facultative adult liver stem cells (oval cells), and to inhibit tumor formation (By similarity). Phosphorylates 'Ser-14' of histone H2B (H2BS14ph) during apoptosis. Phosphorylates FOXO3 upon oxidative stress, which results in its nuclear translocation and cell death initiation.

Tissue specificity: Ubiquitously expressed.
Sequence similarities: Belongs to the protein kinase superfamily. STE Ser/Thr protein kinase family. STE20 subfamily. Contains 1 protein kinase domain. Contains 1 SARAH domain.
Post-translational modifications: Autophosphorylated on serine and threonine residues.
Cellular localization: Cytoplasm. Nucleus. The caspase-cleaved form cycles between the nucleus and cytoplasm.

Applications

Our Abpromise guarantee covers the use of ab51134 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>
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</thead>
<tbody>
<tr>
<td>Flow Cyt</td>
<td>1/50</td>
<td></td>
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<tr>
<td>WB</td>
<td>1/10000</td>
<td>Detects a band of approximately 59 kDa (predicted molecular weight: 56 kDa).</td>
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<tr>
<td>IHC-P</td>
<td>1/50 - 1/250.</td>
<td>We strongly recommend that customers perform an antigen retrieval step.</td>
</tr>
<tr>
<td>IHC-Fr</td>
<td>Use at an assay dependent concentration. PubMed: 24595170</td>
<td></td>
</tr>
<tr>
<td>ICC/IF</td>
<td>1/100 - 1/250.</td>
<td></td>
</tr>
<tr>
<td>IP</td>
<td>1/30 - 1/100.</td>
<td></td>
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Images
Immunocytochemistry/Immunofluorescence - Anti-Serine/threonine-protein kinase 4 / MST-1 antibody (ab51134)

ab51134 staining Serine/threonine-protein kinase 4 / MST-1 in Raw264.7 (mouse abelson murine leukemia virus-induced tumor) cells by ICC/IF (Immunocytochemistry/Immunofluorescence). Cells were fixed with 100% methanol and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at a concentration of 1/1000. ab7291 anti-Tubulin (mouse mAb) (1/1000) and ab150120 AlexaFluor®594 Goat anti-Mouse secondary (1/1000) were used as counterstains for primary antibody ab51134 and secondary antibody ab150077 respectively and DAPI was used as a nuclear counterstain.

Negative control 1: Rabbit primary antibody and anti-mouse secondary antibody (ab150120)
Negative control 2: Mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Serine/threonine-protein kinase 4 / MST-1 antibody (EP1465Y) (ab51134)

ab51134 staining Serine/threonine-protein kinase 4 / MST-1 in human gastric carcinoma tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/50. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.

Negative control 1: PBS in place of primary antibody.
Western blot

Western blot - Anti-Serine/threonine-protein kinase 4 / MST-1 antibody [EP1465Y] (ab51134)

All lanes: Anti-Serine/threonine-protein kinase 4 / MST-1 antibody [EP1465Y] (ab51134) at 1/50000 dilution

Lane 1: Jurkat (human acute T cell leukemia) whole cell lysate
Lane 2: Mouse spleen
Lane 3: Rat spleen

Lysates/proteins at 1/20 dilution per lane.

Secondary

All lanes: Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

Predicted band size: 56 kDa

Diluting and blocking buffer: 5% NFDM/TBST

Flow Cytometry analysis of HeLa cells labelling Serine/threonine-protein kinase 4 / MST-1 with purified ab51134 at a dilution of 1/50 (red). Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. An Alexa Flour® 488-conjugated goat anti-rabbit IgG (1/2000) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.
ab51134 immunoprecipitating Serine/threonine-protein kinase 4. 10µg of cell lysate was incubated with primary antibody at a dilution of 1/30 and VeriBlot for IP secondary antibody (HRP) (ab131366) at a dilution of 1/1000.

**Lane 1:** Jurkat (human acute T cell leukemia) whole cell lysate (10ug)

**Lane 2:** Jurkat (human acute T cell leukemia) whole cell lysate

**Lane 3:** Rabbit monoclonal IgG (ab172730) instead of ab51134 in Jurkat (human acute T cell leukemia) whole cell lysate

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Anti-Serine/threonine-protein kinase 4 / MST-1 antibody [EP1465Y] (ab51134) at 1/10000 dilution + HeLa (human cervix adenocarcinoma) whole cell lysate at 20 µg

**Secondary**

Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

**Predicted band size:** 56 kDa

**Diluting and blocking buffer:** 5% NFDM/TBST

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**Please note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE"

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- Extensive multi-media technical resources to help you
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