Product datasheet

Anti-Sumo 1 antibody ab11672

Overview

**Product name**
Anti-Sumo 1 antibody

**Description**
Rabbit polyclonal to Sumo 1

**Host species**
Rabbit

**Tested applications**
Suitable for: ICC/IF, WB, IHC-P, IP

**Species reactivity**
Reacts with: Human, Escherichia coli

**Immunogen**
Recombinant his-tagged full length soluble Sumo 1 (Human).

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.

**Purity**
Whole antiserum

**Clonality**
Polyclonal

**Isotype**
IgG

Applications

Our Abpromise guarantee covers the use of ab11672 in the following tested applications.

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

<table>
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<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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<tbody>
<tr>
<td>ICC/IF</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 21317883</td>
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<tr>
<td>WB</td>
<td>4</td>
<td>1/1000 - 1/5000. Predicted molecular weight: 12 kDa. For 1 hour 30 minutes at RT in 5% milk in TBST (note: 0.7% Tween). A 1/5000 dilution of the antibody will detect 0.1ng of the recombinant protein used as an immunogen.</td>
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<tr>
<td>IHC-P</td>
<td></td>
<td>1/400. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.</td>
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<tr>
<td>IP</td>
<td>2</td>
<td>Use at an assay dependent concentration.</td>
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Function
Ubiquitin-like protein that can be covalently attached to proteins as a monomer or a lysine-linked polymer. Covalent attachment via an isopeptide bond to its substrates requires prior activation by the E1 complex SAE1-SAE2 and linkage to the E2 enzyme UBE2I, and can be promoted by E3 ligases such as PIAS1-4, RANBP2 or CBX4. This post-translational modification on lysine residues of proteins plays a crucial role in a number of cellular processes such as nuclear transport, DNA replication and repair, mitosis and signal transduction. Involved for instance in targeting RANGAP1 to the nuclear pore complex protein RANBP2. Polymeric SUMO1 chains are also susceptible to polyubiquitination which functions as a signal for proteasomal degradation of modified proteins. May also regulate a network of genes involved in palate development.

Involvement in disease
Defects in SUMO1 are the cause of non-syndromic orofacial cleft type 10 (OFC10) [MIM:613705]; also called non-syndromic cleft lip with or without cleft palate 10. OFC10 is a birth defect consisting of cleft lips with or without cleft palate. Cleft lips are associated with cleft palate in two-third of cases. A cleft lip can occur on one or both sides and range in severity from a simple notch in the upper lip to a complete opening in the lip extending into the floor of the nostril and involving the upper gum. Note=A chromosomal aberation involving SUMO1 is the cause of OFC10. Translocation t(2;8)(q33.1;q24.3). The breakpoint occurred in the SUMO1 gene and resulted in haploinsufficiency confirmed by protein assays.

Sequence similarities
Belongs to the ubiquitin family. SUMO subfamily. Contains 1 ubiquitin-like domain.

Post-translational modifications
Cleavage of precursor form by SENP1 or SENP2 is necessary for function. Polymeric SUMO1 chains undergo polyubiquitination by RNF4.

Cellular localization

Images
Immunofluorescence of 293T cells transfected with a vector that has Sumo1 fused to GFP and a Flag tag. The top panel is GFP fluorescence. The middle panel uses ab11672 at 1/300 with a rhodamine secondary antibody. The lower panel is a merge of the GFP fluorescence and ab11672 immunostaining. Staining was also seen in untransfected cells (although at a lower level).
293T cells were transfected with a vector that has Sumo1 fused to GFP and a Flag tag. Cell lysates were used in IP with ab11672 (and a GFP antibody as a control).

The resulting western blot was performed with a Flag antibody. As a control, cells were transfected with a vector with Sumo2 fused to GFP and a Flag tag. ab11672 does not IP anything from this lysate.

Lane 1: Sumo1 fusion lysate - IP'd with GFP antibody

Lane 2: Sumo1 fusion lysate - no IP

Lane 3: Sumo1 fusion lysate - IP'd with ab11672

Lane 4: Sumo2 fusion lysate - IP'd with ab11672
Ab11672 staining human normal placenta. Staining is localized to the nucleus and nuclear membrane.

Left panel: with primary whole serum antibody at 1/400. Right panel: isotype control.

Sections were stained using an automated system DAKO Autostainer Plus, at room temperature. Sections were rehydrated and antigen retrieved with the Dako 3-in-1 AR buffer EDTA pH 9.0 in a DAKO PT Link.

Slides were peroxidase blocked in 3% H2O2 in methanol for 10 minutes. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS), then incubated with primary antibody for 20 minutes, and detected with Dako Envision Flex amplification kit for 30 minutes.

Colorimetric detection was completed with diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be

ICC/IF image of ab11672 stained HeLa cells. The cells were 4% PFA fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab11672, 1/1000 dilution) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.
Immunocytochemistry/ Immunofluorescence analysis of WM-266-4 cells. Left panel = untreated cells. Right panel = cells treated for 3 h with 25 ng/ml leptomycin B and for 45 min with 50 ng/ml NRG-1. Sumo 1 was stained with ab11672 (green).

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