**Product datasheet**

**Anti-TRPV4 antibody ab39260**

**Overview**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Anti-TRPV4 antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Rabbit polyclonal to TRPV4</td>
</tr>
<tr>
<td>Host species</td>
<td>Rabbit</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, Horse</td>
</tr>
<tr>
<td>Immunogen</td>
<td>Synthetic peptide conjugated to KLH derived from within residues 850 to the C-terminus of Mouse TRPV4. Read Abcam’s proprietary immunogen policy (Peptide available as ab39471.)</td>
</tr>
<tr>
<td>General notes</td>
<td>Although some of our customers have had good results in Human and Rat (89% homology with the immunogen), we do not batch test this antibody in these species. Due to the polyclonal nature of this antibody, some batches may not work in Human or Rat.</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. 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>
</tbody>
</table>
| Storage buffer      | pH: 7.40  
                        Preservative: 0.02% Sodium azide  
                        Constituent: PBS |
|                     | Batches of this product that have a concentration < 1mg/ml may have BSA added as a stabilising agent. If you would like information about the formulation of a specific lot, please contact our scientific support team who will be happy to help. |
| Purity              | Immunogen affinity purified |
| Clonality           | Polyclonal |
| Isotype             | IgG |

**Applications**

Our Abpromise guarantee covers the use of ab39260 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
Function
Non-selective calcium permeant cation channel probably involved in osmotic sensitivity and mechanosensitivity. Activation by exposure to hypotonicity within the physiological range exhibits an outward rectification. Also activated by low pH, citrate and phorbol esters. Increase of intracellular Ca(2+) potentiates currents. Channel activity seems to be regulated by a calmodulin-dependent mechanism with a negative feedback mechanism. Promotes cell-cell junction formation in skin keratinocytes and plays an important role in the formation and/or maintenance of functional intercellular barriers. Acts as a regulator of intracellular Ca(2+) in synoviocytes. Plays an obligatory role as a molecular component in the nonselective cation channel activation induced by 4-alpha-phorbol 12,13-didecanoate and hypotonic stimulation in synoviocytes and also regulates production of IL-8.

Tissue specificity
Found in the synoviocytes from patients with (RA) and without (CTR) rheumatoid arthritis (at protein level).

Involvement in disease
Brachyolmia 3
Spondylometaphyseal dysplasia Kozlowski type
Metatropic dysplasia
Distal spinal muscular atrophy, congenital non-progressive
Charcot-Marie-Tooth disease 2C
Scapuloperoneal spinal muscular atrophy
Spondyloepiphyseal dysplasia Maroteaux type
Parastremmatic dwarfism
Digital arthropathy-brachydactyly, familial

Sequence similarities
Belongs to the transient receptor (TC 1.A.4) family. TrpV subfamily. TRPV4 sub-subfamily. Contains 3 ANK repeats.

Post-translational modifications
Phosphorylation results in enhancement of its channel function.

Cellular localization
Cell membrane and Cell membrane. Cell junction > adherens junction. Assembly of the putative homotetramer occurs primarily in the endoplasmic reticulum.

Images

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>ICC/IF</td>
<td></td>
<td>Use a concentration of 5 µg/ml.</td>
</tr>
<tr>
<td>WB</td>
<td>★★★★☆</td>
<td>Use a concentration of 1 - 2 µg/ml. Detects a band of approximately 100 kDa (predicted molecular weight: 98 kDa).</td>
</tr>
<tr>
<td>IHC-P</td>
<td>★★★★★</td>
<td>Use a concentration of 0.5 - 1 µg/ml. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.</td>
</tr>
</tbody>
</table>
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TRPV4 antibody (ab39260)

IHC image of ab39260 staining in mouse normal brain formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6) for 20 mins. The section was then incubated with ab39260, 0.5µg/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.

Western blot - Anti-TRPV4 antibody (ab39260)

Anti-TRPV4 antibody (ab39260) at 2 µg/ml + Brain (Mouse) Tissue Lysate at 25 µg

Secondary
Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 98 kDa
Observed band size: 100 kDa
why is the actual band size different from the predicted?
Additional bands at: 37 kDa, 54 kDa. We are unsure as to the identity of these extra bands.

Exposure time: 1 minute
ab39260 staining of TRPV4 −/− (upper panel) and wildtype (lower panel) adult mouse kidney tissue sections, showing good immunostaining in the wildtype tissue and no immunostaining in the TRPV4 −/− tissue. Formalin/PFA-fixed paraffin-embedded sections of mouse kidney tissue were incubated with ab39260 (1/200) for 2 hours. Antigen retrieval was performed by heat induction in citrate buffer pH 6.0. A biotin-conjugated goat anti-rabbit antibody was used as the secondary.

ICC/IF image of ab39260 stained PC12 cells. The cells were 4% PFA fixed (10 min), permabilised in 0.1% PBS-Tween (20 min) and incubated with the antibody (ab39260, 5µg/ml) for 1h at room temperature. 1%BSA / 10% normal goat serum / 0.3M glycine was used to block non-specific protein-protein interactions. 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). DAPI was used to stain the cell nuclei (blue).
All lanes: Anti-TRPV4 antibody (ab39260) at 1 µg/ml

Lane 1: Whole cell lysate prepared from MEF cells
Lane 2: Whole cell lysate prepared from F9 cells
Lane 3: Whole cell lysate prepared from GC-1 cells
Lane 4: Whole cell lysate prepared from NIH-3T3 cells

Lysates/proteins at 20 µg per lane.

Secondary
All lanes: HRP conjugated pig anti-rabbit polyclonal at 1/5000 dilution

Developed using the ECL technique.

Predicted band size: 98 kDa
Observed band size: 125 kDa

why is the actual band size different from the predicted?

Exposure time: 5 minutes

This antibody detects a band of ~125 kDa in 4 different mouse cell lines. This is lower than the predicted molecular weight of TRPV4 on SDS-PAGE (100 kDa). However, there are published reports of TRPV4 running at >120 kDa PMID: 16368742 PMID: 12538589, possibly as a result of glycosylation.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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