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Anti-TRPV1

VR1, Capsaicin Receptor, Vanilloid Receptor, OTRPC1



Antigen included Shipped at room temp. QC tested

Cat #: ACC-030 | **Size:** 25 µl, 50 µl, 0.2 ml | **Source:** Rabbit | **Type:** Polyclonal

Application: IC, IH, WB

Reactivity: H, M, R

May also work in: IFC, IP

Application key: CBE- Cell-based ELISA, FC- Flow cytometry, IC- Immunocytochemistry, IE- Indirect ELISA, IFC- Indirect flow cytometry, IH- Immunohistochemistry, IP- Immunoprecipitation, LCI- Live cell imaging, N- Neutralization, WB- Western blot
Species reactivity key: H- Human, M- Mouse, R- Rat

Control antigen included

Lyophilized powder

General information

Alomone Labs is pleased to offer a highly specific antibody directed against an epitope of rat TRPV1. **Anti-TRPV1** antibody (#ACC-030) can be used in western blot, immunohistochemical and immunocytochemical applications. It has been designed to recognize TRPV1 from mouse, rat and human samples.

Related products for control experiments:

- 1- Control peptide antigen (supplied with the antibody free of charge).
- 2- **Anti-Rat TRPV1 (extracellular)** antibody (#ACC-029). This antibody recognizes a different epitope and thus can also be used as a control for detecting TRPV1. This antibody should be used with rat samples only.

Related products for immuno-colocalization experiments:

Anti-Rat-TRPV1 (extracellular)-ATTO-488 antibody (#ACC-029-AG). A fluorescent labeled primary antibody. It can be used in immuno-colocalization studies in conjunction with any of our antibodies raised in rabbit. This antibody should be used with rat samples only.

Anti-TRPV1 antibody (#ACC-030) in the literature:

Western blot analysis (WB):

- Mouse brain stem and spinal cord lysates (1:500) (see Kim, H.S. *et al.* (2014) in Product Citations).
- Human peripheral blood mononuclear cells (PBMCs) and Natural Killer cells (NK) (1:500) (See H.S. *et al.* (2014) in Product Citations).

Immunohistochemistry (IH):

- Human uveal melanoma sections (1:200) (see Mergler, S. *et al.* (2014) in Product Citations).
- Rat DRG sections (1:1000) (see Isensee, J. *et al.* (2014) in Product Citations).
- Human skin sections (1:1000) (see Cheng, H.T. *et al.* (2013) in Product Citations).

Immunocytochemistry (IC):

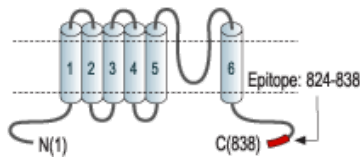
- Mouse DRG neurons (see Devesa, I. *et al.* (2014) in Product Citations).

If you know of a relevant citation for this product **please let us know**.

Specifications

Immunogen

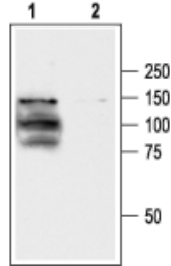
Peptide (C)EDAEVFKDSMVPGEK, corresponding to amino acid residues 824-838 of rat TRPV1 (Accession [Q35433](#)).
Intracellular, C-terminus.



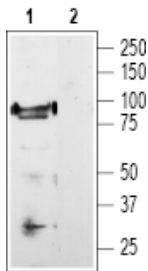
Homology	Mouse, guinea pig - 14/15 amino acid residues identical; human - 10/15 amino acid residues identical.
Purity	Affinity purified on immobilized antigen.
Formulation	Lyophilized powder. Reconstituted antibody contains phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN ₃ .
Standard quality control of each lot	Western blot analysis.

Applications

Western blot

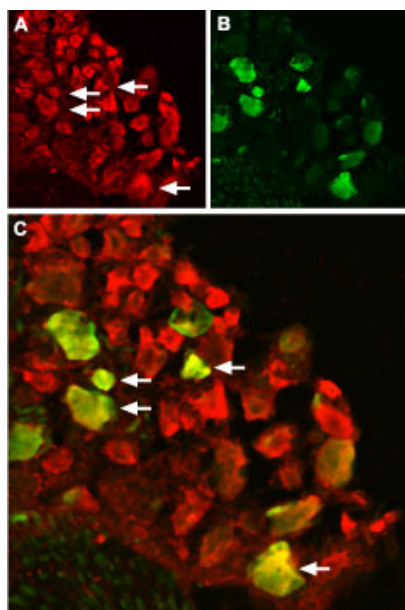


Western blot analysis of TRPV1 transfected HEK-293 cells:
1. Anti-TRPV1 antibody (#ACC-030), (1:200).
2. Anti-TRPV1 antibody, preincubated with the control peptide antigen.



Western blot analysis of rat DRG lysate:
1. Anti-TRPV1 antibody (#ACC-030), (1:200).
2. Anti-TRPV1 antibody, preincubated with the control peptide antigen.

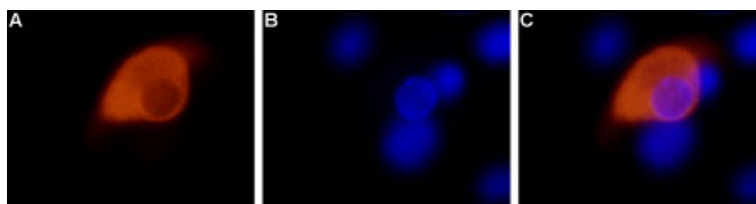
Immunohistochemistry



Expression of TRPV1 in rat DRG

Immunohistochemical staining of rat dorsal root ganglion (DRG) using **Anti-TRPV1** antibody (#ACC-030). A. TRPV1 (red) in DRG neurons. B. Staining with mouse anti-Parvalbumin (green) in the same DRG section. C. Confocal merge of TRPV1 and Parvalbumin demonstrates colocalization (arrows).

Immunocytochemistry



Expression of TRPV1 in rat DRG primary culture

Immunocytochemical staining of paraformaldehyde-fixed and permeabilized rat dorsal root ganglia (DRG) primary cells with **Anti-TRPV1** antibody (#ACC-030), (1:200). A. Staining followed by goat anti-rabbit-AlexaFluor-555 secondary antibody. B. Nuclear staining using the cell-permeable dye Hoechst 33342. C. Merged image of panels A and B.

Scientific background

Scientific background TRPV1 (also named VR1, capsaicin receptor and vanilloid receptor) is a member of the transient receptor potential (TRP) channel family, which includes TRPC, TRPM, TRPA, TRPP, TRPML and the TRPV subfamilies. The TRPV subfamily consists of six members named, TRPV1-6. The TRPV1 channel is a vanilloid gated, nonselective cation channel.

The channel has sequence homology to the TRP family, and shares a similar predicted structure of six transmembrane domain (TM) with a pore loop between TM5 and TM6.¹ TRPV1 is expressed predominantly in nociceptors and in sensory neurons.^{2,3}

TRPV1 has many activators among them heat, protons, vanilloids like capsaicin, resiniferatoxin (RTX), and lipids. This channel is associated with tissue injury and inflammation.^{5,6}

Other members of this family, TRPV2, TRPV3 and TRPV4 also show thermal sensitivity.⁷ Conformational changes in the C-terminus are responsible for many functions such as permeation and gating.

There is also evidence that deletion of the C-terminus causes a loss of sensitivity to any stimuli.⁷ Recent studies demonstrated involvement of TRPV1 in apoptosis where inhibition of the receptor prevented apoptosis.^{8,9}

References

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2. Cesare, P. *et al.* (1999) *Proc. Natl. Acad. Sci. U.S.A.* **96**, 7658.

3. [Kim, J. et al.](#) (2003) *Nature* **424**, 81.
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Product Citation

Publications using this product

1. [Devesa, I. et al.](#) (2014) *Proc. Natl. Acad. Sci. U.S.A.* pii: 201420252.
2. [Isensee, J. et al.](#) (2014) *J. Cell Sci.* **127**, 216.
3. [Kim, H.S. et al.](#) (2014) *Carcinogenesis* **35**, 1652.
4. [Mergler, S. et al.](#) (2014) *Cell. Signal.* **26**, 56.
5. [Cheng, H.T. et al.](#) (2013) *J. Pain.* **14**, 941.
6. [Belghiti, M. et al.](#) (2013) *J. Biol. Chem.* **288**, 9675.
7. [Efendiev, R. et al.](#) (2013) *J. Biol. Chem.* **288**, 3929.
8. [Jankowski, M.P. et al.](#) (2013) *J. Neurophysiol.* **109**, 2374.
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10. [Matsuura, S. et al.](#) (2013) *PLoS ONE* **8**, e52840.
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Last update: 08/06/2015

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