Store at -20°C

TRPV4 Antibody

#65893

Cell Signaling TECHNOLOGY®

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New 06/19

Entrez-Gene ID #59341
UniProt ID #Q9HBA0

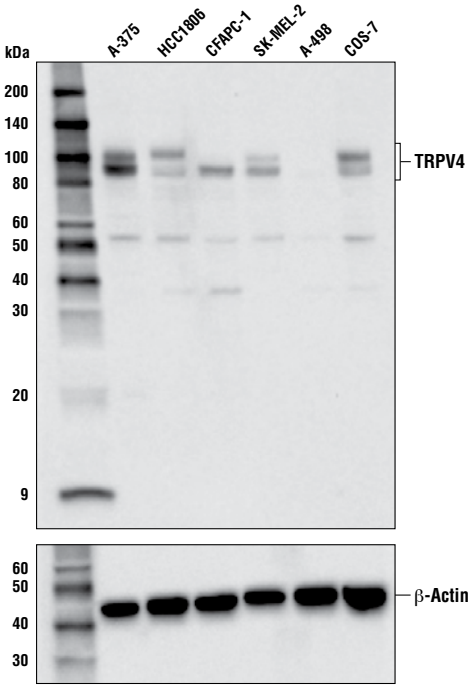
For Research Use Only. Not For Use In Diagnostic Procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP Endogenous	H, Mk	95-102 kDa	Rabbit**

Background: TRPV4 is a member of the transient receptor potential vanilloid (TRPV) family of ion channels, and functions as a Ca^{2+}-permeant non-selective cation channel. TRPV4 channels are expressed in many cell types, with particular abundance in sensory and spinal neurons (1). TRPV4 channels play a role in maintaining cellular homeostasis, by facilitating transmembrane Ca^{2+} transport in response to various stimuli, including thermal stress, fatty acid metabolites, and hypotonicity (2). Mutations in the *TRPV4* gene have consequently been attributed to a variety of pathological conditions. For example, constitutively active TRPV4 mutants can lead to excess Ca^{2+} influx, resulting in toxicity and degeneration of peripheral nerves (3). TRPV4-dependent Ca^{2+} influx was also shown to mediate strain-induced and TGFβ1-induced epithelial-mesenchymal transition (EMT), suggesting a mechanistic role for TRPV4-mediated Ca^{2+} transport in fibrosis and oncogenesis (4). Consistent with this, studies in capillary endothelial cells showed that mechanical strain-induced Ca^{2+} influx through TRPV4 promote focal adhesion and stress fiber remodeling, mediated specifically through integrins, PI3K, and downstream kinases including Rho and ROCK (5).

Specificity/Sensitivity: TRPV4 Antibody recognizes endogenous levels of total TRPV4 protein. The antibody is predicted to detect all isoforms of TRPV4 reported in Uniprot, with the exception of TRPV4-SV (Isoform 3).

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human TRPV4 protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from various cell lines using TRPV4 Antibody (upper) and β-Actin (D6A8) Rabbit mAb #8457 (lower). Expression levels of TRPV4 among cell lines are consistent with expectations based on publicly available bioinformatic databases.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

Background References:

(1) Everaerts, W. et al. (2010) *Prog Biophys Mol Biol* 103, 2-17.

(2) Vriens, J. et al. (2004) *Proc Natl Acad Sci U S A* 101, 396-401.

(3) Fecto, F. et al. (2011) *J Biol Chem* 286, 17281-91.

(4) Sharma, S. et al. (2019) *J Cell Mol Med* 23, 761-74.

(5) Thodeti, C.K. et al. (2009) *Circ Res* 104, 1123-30.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

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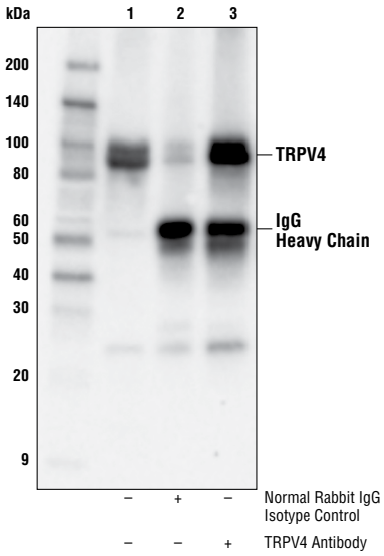
Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



Immunoprecipitation of TRPV4 from A-375 cell extracts. Lane 1 is 10% input, lane 2 is Normal Rabbit IgG #2729, and lane 3 is TRPV4 Antibody. Western blot analysis was performed using TRPV4 Antibody. Anti-Rabbit IgG, HRP-linked Antibody #7074 was used as the secondary antibody.