

TRPV4 Antibody



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M Mk	Endogenous	95-102	Rabbit	#Q9HBA0	59341
Product Usage Information	Application					Dilution
	Western Blotting					1:1000
	Immunoprecipitation					1:50
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. <i>Do not aliquot the antibody.</i>					
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.					
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 <i>TRPV4</i> 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).					
Background References	1. Everaerts, W. et al. (2010) <i>Prog Biophys Mol Biol</i> 103, 2-17. 2. Vriens, J. et al. (2004) <i>Proc Natl Acad Sci U S A</i> 101, 396-401. 3. Fecto, F. et al. (2011) <i>J Biol Chem</i> 286, 17281-91. 4. Sharma, S. et al. (2019) <i>J Cell Mol Med</i> 23, 761-74. 5. Thodeti, C.K. et al. (2009) <i>Circ Res</i> 104, 1123-30.					

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Western Blot Buffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	W: Western Blotting IP: Immunoprecipitation
Cross-Reactivity Key	H: Human M: Mouse Mk: Monkey
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