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Anti-TRPV4 Antibody

Catalog # AP51589

Product Information

Application	WB, IF/IC
Primary Accession	Q9HBA0
Reactivity	Human, Mouse, Rat, Pig, Chicken, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	98281

Additional Information

Gene ID	59341
Other Names	VRL2; VROAC; Transient receptor potential cation channel subfamily V member 4; TrpV4; Osm-9-like TRP channel 4; OTRPC4; Transient receptor potential protein 12; TRP12; Vanilloid receptor-like channel 2; Vanilloid receptor-like protein 2; VRL-2; Vanilloid receptor-related osmotically-activated channel; VR-OAC
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human TRPV4. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

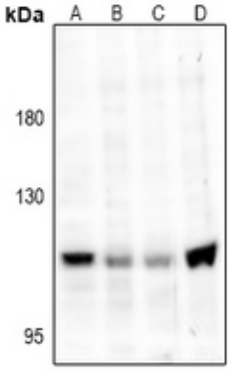
Name	TRPV4
Synonyms	VRL2, VROAC
Function	Non-selective calcium permeant cation channel involved in osmotic sensitivity and mechanosensitivity (PubMed:16293632, PubMed:18695040, PubMed:18826956, PubMed:22526352, PubMed:23136043, PubMed:29899501). Activation by exposure to hypotonicity within the physiological range exhibits an outward rectification (PubMed:18695040, PubMed:18826956, PubMed:29899501). Also activated by heat, low pH, citrate and phorbol esters (PubMed:16293632, PubMed:18695040, PubMed:18826956, PubMed:20037586, PubMed:21964574, PubMed:25256292). Increase of intracellular Ca(2+) potentiates currents. Channel activity seems to be regulated by a calmodulin-dependent

	mechanism with a negative feedback mechanism (PubMed:12724311, PubMed:18826956). Promotes cell-cell junction formation in skin keratinocytes and plays an important role in the formation and/or maintenance of functional intercellular barriers (By similarity). Acts as a regulator of intracellular Ca(2+) in synoviocytes (PubMed:19759329). 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 (PubMed:19759329). Together with PKD2, forms mechano- and thermosensitive channels in cilium (PubMed:18695040). Negatively regulates expression of PPARGC1A, UCP1, oxidative metabolism and respiration in adipocytes (By similarity). Regulates expression of chemokines and cytokines related to pro-inflammatory pathway in adipocytes (By similarity). Together with AQP5, controls regulatory volume decrease in salivary epithelial cells (By similarity). Required for normal development and maintenance of bone and cartilage (PubMed:26249260). In its inactive state, may sequester DDX3X at the plasma membrane. When activated, the interaction between both proteins is affected and DDX3X relocalizes to the nucleus (PubMed:29899501). In neurons of the central nervous system, could play a role in triggering voluntary water intake in response to increased sodium concentration in body fluid (By similarity).
Cellular Location	Cell membrane. Apical cell membrane; Multi-pass membrane protein. Cell junction, adherens junction {ECO:0000250|UniProtKB:Q9EPK8}. Cell projection, cilium. Note=Assembly of the putative homotetramer occurs primarily in the endoplasmic reticulum (PubMed:16293632, PubMed:20037587, PubMed:20037588). Localization to the cell membrane is inhibited by WNK kinases (WNK1, WNK2, WNK3 or WNK4) in a kinase-independent mechanism (PubMed:16403833) [Isoform 5]: Cell membrane [Isoform 4]: Endoplasmic reticulum
Tissue Location	Found in the synoviocytes from patients with (RA) and without (CTR) rheumatoid arthritis (at protein level)

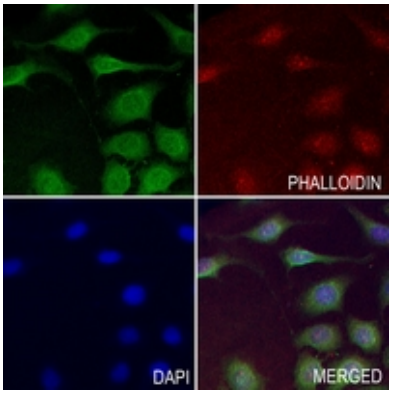
References

Liedtke W.B.,et al.Cell 103:525-535(2000).
Strotmann R.,et al.Nat. Cell Biol. 2:695-702(2000).
Suzuki M.,et al.J. Biol. Chem. 278:22664-22668(2003).
Ishibashi K.,et al.Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
Kelsell R.E.,et al.Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.

Images



Western blot analysis of TRPV4 expression in A375 (A), PC3 (B), 3T3L1 (C), H9C2 (D) whole cell lysates. (Predicted band size: 98 kD; Observed band size: 110 kD)



Immunofluorescent analysis of TRPV4 staining in A549 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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