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TRPV4 Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP18990a

Product Information

Application	WB, E
Primary Accession	Q9HBA0
Other Accession	Q9ERZ8, Q9EPK8, NP_067638.3
Reactivity	Human
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB39228
Calculated MW	98281
Antigen Region	160-189

Additional Information

Gene ID	59341
Other Names	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, TRPV4, VRL2, VROAC
Target/Specificity	This TRPV4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 160-189 amino acids from the N-terminal region of human TRPV4.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	TRPV4 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

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)

Background

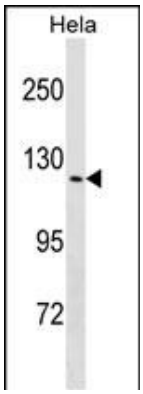
This gene encodes a member of the OSM9-like transient receptor potential channel (OTRPC) subfamily in the transient receptor potential (TRP) superfamily of ion channels. The encoded protein is a Ca2+-permeable, nonselective cation channel that is thought to be involved in the regulation of systemic osmotic pressure. Mutations in this gene are the cause of spondylometaphyseal and metatropic dysplasia and hereditary motor and sensory neuropathy type IIC. Multiple transcript variants encoding different isoforms have been found for this gene.

References

Shukla, A.K., et al. J. Biol. Chem. 285(39):30115-30125(2010)

Cantero-Recasens, G., et al. J. Biol. Chem. 285(36):27532-27535(2010)
Loukin, S., et al. J. Biol. Chem. 285(35):27176-27181(2010)
Nishimura, G., et al. Am. J. Med. Genet. A 152A (6), 1443-1449 (2010) :
Zimon, M., et al. Brain 133 (PT 6), 1798-1809 (2010) :

Images



TRPV4 Antibody (N-term) (Cat. #AP18990a) western blot analysis in Hela cell line lysates (35ug/lane).This demonstrates the TRPV4 antibody detected the TRPV4 protein (arrow).

Citations

- Pharmacological inhibition of TRPV4 channels protects against ischemia-reperfusion-induced renal insufficiency in neonatal pigs.