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TMEM16A Antibody

Catalog # ASC10990

Product Information

Application	WB, E
Primary Accession	Q5XXA6
Other Accession	NP_060513, 194306539
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	114078
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TMEM16A antibody can be used for detection of TMEM16A by Western blot at 1 □g/mL.

Additional Information

Gene ID	55107
Other Names	Anoctamin-1, Discovered on gastrointestinal stromal tumors protein 1, Oral cancer overexpressed protein 2, Transmembrane protein 16A, Tumor-amplified and overexpressed sequence 2, ANO1, DOG1, ORAOV2, TAOS2, TMEM16A
Target/Specificity	ANO1;
Reconstitution & Storage	TMEM16A antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	TMEM16A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ANO1
Function	Calcium-activated chloride channel (CaCC) (PubMed: 20056604, PubMed:22178883, PubMed:22946059, PubMed:32487539). Plays a role in transepithelial anion transport and smooth muscle contraction. Required for the normal functioning of the interstitial cells of Cajal (ICCs) which generate electrical pacemaker activity in gastrointestinal smooth muscles. Acts as a major contributor to basal and stimulated chloride conductance in airway epithelial cells and plays an important role in tracheal cartilage development. Required for CFTR activation by enhancing endoplasmic reticulum Ca(2+)

	store release and is also required for CFTR membrane expression (PubMed:28963502). Required for basal and ATP-dependent mucus secretion in airways and intestine, probably by controlling exocytosis of mucus-filled granules by providing Ca(2+) to an apical signaling compartment (By similarity). Contributes to airway mucus expression induced by interleukins IL3 and IL8 and by the asthma-associated protein CLCA1 and is required for expression of mucin MUC5AC (PubMed:33026825). However, was shown in another study not to be required for MUC5AC expression (PubMed:31732694). Plays a role in the propagation of Ca(2+) waves in Kolliker's organ in the cochlea and contributes to the refinement of auditory brainstem circuitries prior to hearing onset (By similarity). In vomeronasal sensory neurons, modulates spontaneous firing patterns in the absence of stimuli as well as the firing pattern of pheromone- evoked activity (By similarity). Responsible for calcium-activated chloride channel activity in type I taste cells of the vallate papillae (By similarity). Acts as a heat sensor in nociceptive neurons (By similarity). In dorsal root ganglion neurons, plays a role in mediating non-histaminergic Mas-related G-protein coupled receptor (MRGPR)- dependent itching, acting as a downstream effector of MRGPRs (By similarity). In the developing brain, required for the Ca(2+)-dependent process extension of radial glial cells (By similarity).
Cellular Location	Apical cell membrane; Multi-pass membrane protein {ECO:0000250|UniProtKB:Q8BHY3}. Presynapse {ECO:0000250|UniProtKB:Q8BHY3}. Note=In differentiating airway epithelial cells, predominantly intracellular at day 0 but is apically localized by day 30. Expressed in the presynapse of retinal neurons (By similarity). {ECO:0000250|UniProtKB:Q8BHY3}
Tissue Location	Expressed in nasal epithelial cells (at protein level) (PubMed:32487539). In the kidney, expressed in the collecting duct (at protein level) (PubMed:24913262). Broadly expressed with higher levels in liver, skeletal muscle and gastrointestinal muscles (PubMed:15215166, PubMed:16906560). Expressed in eccrine sweat glands (PubMed:25220078).

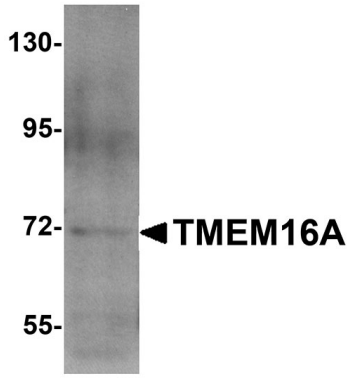
Background

TMEM16A Antibody: Calcium-activated chloride channels (CaCC) are present in many cell types and mediate physiological functions such as epithelial secretion, sensory signal transduction, and smooth muscle contraction. Subunits of these CaCC's include the transmembrane proteins TMEM16A and TMEM16B. TMEM16A is expressed in epithelial cells of the kidney and lung, pancreas, and sensory neurons and its mRNA is seen in foregut, airway epithelia, and tracheal smooth muscle; mice lacking TMEM16A fail to survive past ten days and show aerophagia and little weight gain. TMEM16A is also overexpressed or amplified in multiple cancers associated with poor survival such as oral cancers and gastrointestinal stromal tumors, suggesting the development of CaCC modulators may be a viable therapeutic strategy.

References

Schroeder BC, Cheng T, Jan YN, et al. Expression cloning of TMEM16A as a calcium-activated chloride channel subunit. Cell2008; 134:1019-29.
Rock JR, Futtner CR, and Harfe BD. The transmembrane protein TMEM16A is required for normal development of the murine trachea. Dev. Biol.2008; 214:399-411.
Huang X, Godfrey TE, Gooding WE, et al. Comprehensive genome and transcriptome analysis of the 11q13 amplicon in human oral cancer and synteny to the 7F5 amplicon in murine oral carcinoma. Genes Chromosomes Cancer2006; 45:10458-69.
West RB, Corless CL, Chen X, et al. The novel marker, DOG1, is expressed ubiquitously in gastrointestinal stromal tumors irrespective of KIT or PDGRA mutation status. Am. J. Pathol.2004; 165:107-13.

Images



Western blot analysis of TMEM16A in A549 cell lysate with TMEM16A antibody at 1 µg/mL.