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Product datasheet for TA328756

Tpcn2 Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	IF, IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide KKTLKSIRW(S)LPE(C) , corresponding to amino acid residues 187-199 of mouse Two pore calcium channel protein 2 with replacement of amino acid 192 with serine (S).
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN3.
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	two pore segment channel 2
Database Link:	NP_666318 Entrez Gene 219931 HumanEntrez Gene 309139 RatEntrez Gene 233979 Mouse Q8BWC0

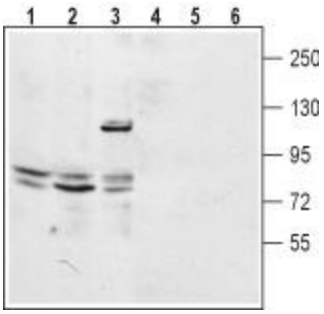
View online »

Background: Among various vertebrate species, three genes are known to encode two-pore segment channels (TPCs) termed TPC1-3. Interestingly TPC3 seems to be absent from the genomes of primates and rodents. The primary sequence of these channels indicates the presence of two putative pore-forming repeats. Each repeat contains six transmembrane domains and a pore loop, a structure strikingly reminiscent of many voltage-gated Na+ (Nav) and Ca2+ (Cav) channels. These twelve transmembrane structures are further thought to form functional dimers. Both TPC1 and TPC2 show ubiquitous expression, while that of TPC1 is exceptionally high in spleen, lung, liver, and kidney. Ca2+-mobilizing messengers such as inositol triphosphate, cyclic ADP ribose and nicotinic acid adenosine dinucleotide phosphate (NAADP) are responsible for the intracellular changes in Ca2+ ion concentration. In contrast to the other Ca2+-mobilizing agents, NAADP, the most potent of these Ca2+ releasing molecules increases the cytosolic Ca2+ concentration via Ca2+ channels located on acidic vesicles (endolysosomes). Only quite recently, after almost a decade of being cloned, TPC1 and TPC2 were both found to be responsible for the NAADP-induced release of Ca2+ . Evidence that these two channels are indeed responsible for the release of Ca2+ is quite compelling since overexpression of TPC1 and its knockdown or point mutation of a critical residue increase and exacerbate Ca2+ release respectively. In addition, b-cells from TPC2 knockout mice exhibited no Ca2+ release from endolysosomes upon NAADP stimulation. Finally, in a study using immunopurified channels, it was demonstrated that TPC1 and TPC2 both respond to very low concentrations of NAADP and are unequivocally responsible for the release of Ca2+, whereas TPC3 may negatively regulate the release of Ca2+ . As these channels have only recently been discovered, very little is known about their physiology and gating mechanisms. Their probable involvement in a number of diseases such as lysosomal storage disease (LSDs), caused by the dysfunction of lysosomal associated proteins, has yet to be deciphered.

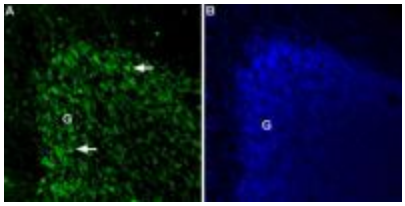
Synonyms: FLJ41094; SHEP10; TPC2

Note: This antibody was tested in live cell imaging. Please see IF/ICC data for detail.

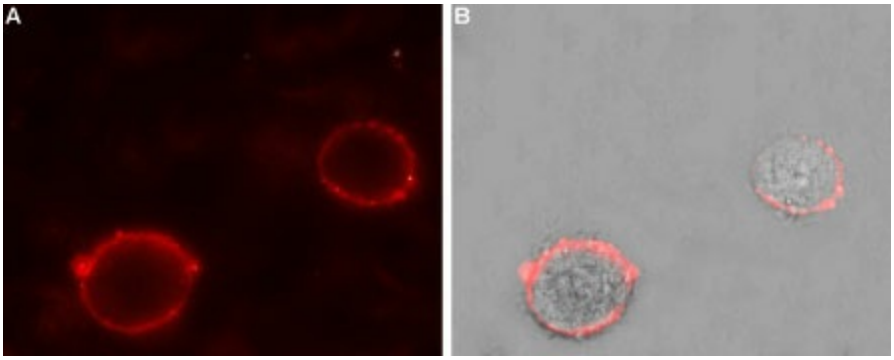
Product images:



Western blot analysis of mouse kidney lysate (lanes 1 and 4), rat lung membrane (lanes 2 and 5) and human embryonic Kidney 293 cell lysate (lanes 3 and 6): 1-3. Anti-Two Pore Calcium Channel Protein 2 (extracellular) antibody, (1:200). 4-6. Anti-Two Pore Calcium Channel Protein 2 (extracellular) antibody, preincubated with the control peptide antigen.



Expression of Two pore calcium channel 2 in rat cerebellum. Immunohistochemical staining of Two pore calcium channel 2 in rat cerebellum using Anti-Two pore calcium channel 2 (extracellular) antibody. A. TPC2 positive cells (green) appear in the granule cell layer (G) of the cerebellum (arrows). B. The extent of the granule layer is demonstrated with the counterstain DAPI (blue).



Expression of Two Pore Calcium Channel Protein 2 in rat PC12 cells. Immunocytochemical staining of intact living rat pheochromocytoma (PC12) cells. A. Extracellular staining of cells using Anti-Two Pore Calcium Channel Protein 2 (extracellular) antibody, (1:50), (red). B. Merge of A with the live view of the cell.