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Product datasheet for TA328754

TRP 7 (TRPC7) Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	IF, WB
Recommended Dilution:	WB: 1:200-1:2000; FC: 1:50-1:600
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)DQHVQDDTLHNVS, corresponding to amino acid residues 504-516 of human TRPC7. 2nd extracellular loop.
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:	transient receptor potential cation channel subfamily C member 7
Database Link:	NP_065122 Entrez Gene 26946 MouseEntrez Gene 282822 RatEntrez Gene 57113 Human Q9HCX4

View online »

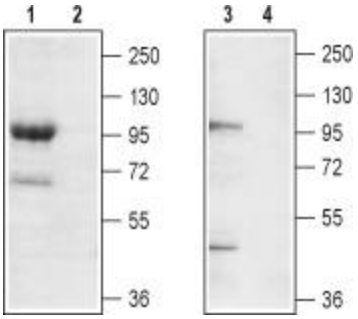
Background: Transient receptor potential (TRP) channels are relatively non-selective ion channels enabling the exchange of cations down their electrochemical gradient. This exchange enables the intracellular rise in Na+ and Ca2+ concentration and ultimately in the cell membrane depolarization, important for action potential propagation and muscle contraction. They are activated by an extremely broad range of stimuli namely, temperature, voltage, pH, endocrine factors as well as signaling molecules. The TRP channel family is composed of 28 members divided in 7 subgroups: TRPV, TRPC, TRPM, TRPA, TRPN, TRPP and TRPML. All members of the TRP family form tetramers and could heterhomultimerize. They have 6 transmembrane (TM) domains, and a pore domain between the fifth (S5) and sixth (S6) transmembrane domains. In general, TRP channels enable the passage of either Na+ or Ca2+ ions with little or no preference. However, some channels do exhibit some selectivity. Also, TRP channels do not display the positive charges in the S4 voltage-sensing domain like most voltage sensitive channels, although they do display voltage dependency. In addition, TRP channels have in the C-terminal intracellular region to the S6 domain a TRP domain comprising 25 amino acids that is more or less conserved among most TRP channels. Within the TRP domain, there is a TRP box composed of six amino acids, and TRP box 2 – a proline rich domain. The TRP domain seems to be responsible for the binding of PIP2, a phospholipid important for the regulation of channel activity. The TRPC subfamily is further divided into the following: TRPC1/4/5, TRPC3/6/7 and TRPC2. Activation of phospholipase C (PLC) ultimately leads to the formation of diacylglycerol (DAG) and inositol 1,4,5-triphosphate (IP3) via hydrolysis of PIP2. The increase in concentration of these intracellular second messengers leads to the activation of non-selective Ca2+ channels and an IP3-induced release of Ca2+ from intracellular stores. The intracellular Ca2+ store depletion in turn activates Ca2+ specific channels to allow replenish intracellular Ca2+ levels. TRPCs are thought to be activated upon intracellular store Ca2+ depletion, and may function in concert along with the recently identified Orai channel. The TRPC3/6/7 class produces similar currents upon activation. TRPC7 is activated by a broad range of hormones and neurotrophins, many of which activate PLC dependent pathways, via G-protein coupled receptors (GPCRs) or receptor tyrosine kinases (RTKs). Its expression is has been detected in dorsal root ganglia (DRGs), heart, uterine myometrium, keratinocytes and leukemic cells. In myocardial cells, TRPC7 has recently been shown to promote apoptosis, thereby becoming a contributing factor in the development of heart disease. Indeed, there is a strong correlation between the high expression level of TRPC7 and apoptosis in hearts from Dahl salt-sensitive rats which have suffered from heart failure.

Synonyms: TRP7

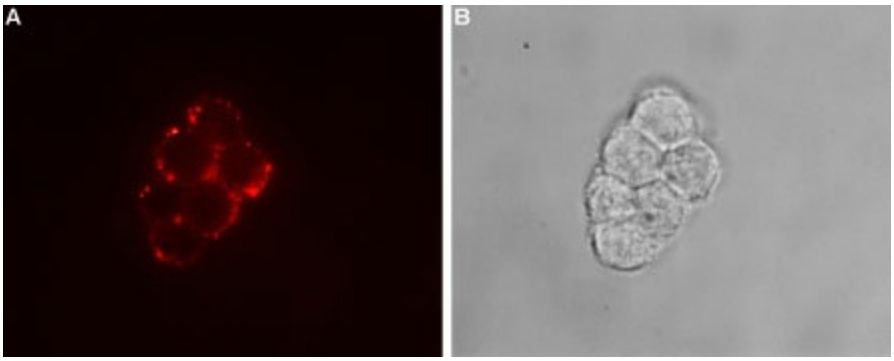
Note: This antibody was tested in live cell imaging. Please see IF/ICC data for detail.

Protein Families: Druggable Genome, Ion Channels: Transient receptor potential, Transmembrane

Product images:



Western blot analysis of mouse brain membrane (lanes 1 and 2) and rat brain lysate (lanes 3 and 4): 1, 3. Anti-TRPC7 (extracellular) antibody, (1:200). 2, 4. Anti-TRPC7 (extracellular) antibody, preincubated with the control peptide antigen.



Expression of TRPC7 in rat PC12 cells. Immunocytochemical staining of intact living rat pheochromocytoma (PC12) cells using. A. Extracellular staining of cells using Anti-TRPC7 (extracellular) antibody, (1:50) followed by goat anti-rabbit-AlexaFluor-594 secondary antibody (red). B. Live view of the cells.