

Recombinant Rat TRPM4 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52575

Size: 10ug, 100ug

Protein Name: Transient receptor potential cation channel subfamily M member 4 (Calcium-activated non-selective cation channel 1) (Long transient receptor potential channel 4) (LTrpC-4) (LTrpC4) (MLS2s) (Melastatin-like 2)

Synonym: Trpm4, Ltrpc4

UniProt ID: Q9ESQ5

UniProt Link: www.uniprot.org/uniprotkb/Q9ESQ5/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1208 AA

Molecular Weight: 135 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MVGQEKEQSWIPKIFRKKVCTTFIVDLHDDAGGTLCCGQPRDAHPSVAVEDAFGAADVTEWNSDE
HTTEKPTDAYGDLDFYSGRKSSNFLRLSDRTDPATVYSLVTRSWGFRAPNLVSVLGGSEGPVLQ
TWLQDLLRRGLVRAAQSTGAWIVTGGLHTGIGRHVGVAVRDHQTASTGGSKVVAMGVAPWGVVR
NRDMLINPKGSFPARYRWRGDPEDGVEFPLDYNYSAFFLVDDGTYGRMGGENRFRLRFESYVAQQ
KTGVGGTGIDIPVLLLLIEGDEKMLKRIEDATQAQLPCLLVAGSGGAADCLVETLEDTLAPGSGGLRR
GEARDRIRRYFPKGDPEVLQAQVERIMTRKELLTVYSSSEDGSEEFETIVLRALVKACGSSEASAYLDE
LRLAVAWNVRVDIAQSELFRGDIQWRSFHLEASLMDALLNDRPEFVRLISHGLSLGHFLTPVRLAQLY
SAVSPNSLIRNLLDQASHASSSKSPANGAAELRPPNVGQVLRITLLGETCAPRYPARNTRHSLGQD
HRENDSELLMDWANMQQDASFEQAPWSDLLIWALLLNRAQMAIYFWEKGSNSVASALGACLLLRVM
ARLEWEAEEAARRKDAAKFESMSVDLFGECYHNSEYRAARLLLRCPWGEATCLQLAMQADAR
AFFAQDGVQSLLTQKWWGEMDSTNPIWALLTFFCPPLIYTNLILFRKSEEEPTQKDLDFFDMDSSMN
GAGPLGPAEPSAKVALERRRRRRPGHTLCCGGCSKRWSYFWGAPVTAFLGNVVSYLLFLLFAHVL
LVDFQPTKPGVFELLYFWAFTLLCEELRQGLGGGWGTLANGGPGPGKAPLRHRLHLYLLDTWNQ
CDLLALTCFLGVCRLTPGLFDLGRVLCCLDFMIFTLRLLHIFTVNKQLGPKIVIVSKMMKDVFFFLFF
LCVWLVAVGVALEGILRPQDRSLPSILRRVFYRPLYQIFGQIPQEEMDVALMNPSNCSAERGSWAHP
EGPVAGSCVSQYANWLVLVLLIVFLLVANILLNLLIAMFSYTFNKVHGNSDLYWKAQRYSLIREFHSR
PALAPPLIIISHLRLLFKWLRRCHRTNLPASPVFEHFRVCLSKEAERTLLTWESVHKENFLLAQARDKR



DSDSERLKRTSQKVDLTALKQLGQIREYDRRLRGLEREVQHCSRVLTWMAEALSHSALLPPGGPPPP
SPTGSKD

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Transient receptor potential cation channel subfamily M member 4 (Calcium-activated non-selective cation channel 1) (Long transient receptor potential channel 4) (LTrpC-4) (LTrpC4) (MLS2s) (Melastatin-like 2) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Calcium-activated selective cation channel that mediates membrane depolarization. While it is activated by increase in intracellular Ca^{2+} , it is impermeable to it. Mediates transport of monovalent cations ($\text{Na}^{+} > \text{K}^{+} > \text{Cs}^{+} > \text{Li}^{+}$), leading to depolarize the membrane (PubMed:16966582, PubMed:19945433). It thereby plays a central role in cardiomyocytes, neurons from entorhinal cortex, dorsal root and vomeronasal neurons, endocrine pancreas cells, kidney epithelial cells, cochlea hair cells etc. Participates in T-cell activation by modulating Ca^{2+} oscillations after T lymphocyte activation, which is required for NFAT-dependent IL2 production. Involved in myogenic constriction of cerebral arteries. Controls insulin secretion in pancreatic beta-cells. May also be involved in pacemaking or could cause irregular electrical activity under conditions of Ca^{2+} overload. Affects T-helper 1 (Th1) and T-helper 2 (Th2) cell motility and cytokine production through differential regulation of calcium signaling and NFATC1 localization. Enhances cell proliferation through up-regulation of the beta-catenin signaling pathway. Plays a role in keratinocyte differentiation (By similarity).; [Isoform 2]: Lacks channel activity.

Subcellular Localization: [Isoform 1]: Cell membrane ; Multi-pass membrane protein . Endoplasmic reticulum . Golgi apparatus .; [Isoform 2]: Cell membrane ; Multi-pass membrane protein . Endoplasmic reticulum . Golgi apparatus . Note=Mainly integrated into the ER/Golgi complex and is rarely found in the plasma membrane.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.