

Recombinant Human TRPM2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51022

Size: 10ug, 100ug

Protein Name: Transient receptor potential cation channel subfamily M member 2 (Estrogen-responsive element-associated gene 1 protein) (Long transient receptor potential channel 2) (LTrpC-2) (LTrpC2) (Transient receptor potential channel 7) (TrpC7) (Transient receptor potential melastatin 2)

Synonym: TRPM2, EREG1, KNP3, LTRPC2, TRPC7

UniProt ID: O94759

UniProt Link: www.uniprot.org/uniprotkb/O94759/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1503 AA

Molecular Weight: 171 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MEPSALRKAGSEQEEGFEGLP RRVTDLGMVSNLRRSNSSLFKSWRLQCPFGNNDKQESLSSWIPE
NIKKKECVYFVSSKLS DAGKVVCQCGYTHEQHLEEATKPHTFQGTQWDPKKHVQEMPTDAFGDIV
FTGLSQKVKKYVRVSQDTPSSVIYHLM TQHWGLDVPNLLISVTGGAKNFMKPRLKSIFRRGLVKVA
QTTGAWIITGGSHTGVMKQVGEAVRDFSLSSSYKEGELITIGVATWGTVHRREGLIHPTGSFPAEYIL
DEDGQGNLTCLDSNHSHFILVDDGTHGQYGVEIPLRTRLEKFISEQTKERGGVAIKIPIVCVVLEGGP
GTLHTIDNATTNGTPCVVVEGSGRVADVIAQVANLPVSDITISLIQQKLSVFFQEMFETFTESRIVEWT
KKIQDIVRRRQLLTVFREGKDGQQDQDVAILQALLKASRSQDHFHGHENWDHQLKLAVAWN RVDIAR
SEIFMDEWQWKPSDLHPTMTAALISNKPEFVKLFLENGVQLKEFVTWDTLLYLYENLDPSCLFH SKL
QKVLVEDPERPACAPAAPRLQMHHVAQVLRLLGDFTQPLYP RPRHNDRLRLLLPVPHVKLVN VQGV
SLRSLYKRSSGHVFTTMDPIRDLLIWAIVQNRREL AGIWAQSQDCIAAALACSKILKELSKEEEDTDS
SEEMPLALAE EYEHRAIGVFTECYRKDEERAQKLLTRVSEAWGKTTCLQLALEAKDMKFVSHGGI QAF
LTKVWWGQLSVDNGLWRVTL CMLAFPLLLTGLISFREKRLQDVGTPAARARAFFTAPVVVFHLN ILS
YFAFLCLFAYVLMVDFQPVPSWCECAIYLWLFSLVCEEMRQLFYDPDECGLMKKAALYFSDFWNKL
DVGAILLFVAGLTCRLIPATLYPGRVILSLDFILFCLRLMHIFTISKTLGPKIIIVKRMMKDVFFFLFLLAVW
VVSFGVAKQAILIHNERRVDWLF RGAVYHSYLTIFGQIPGYIDGVNFNPEHCSPNGTDPYKPKCPESD
ATQQRPAFPEWLTVLLLCLYLLFTNILLNLLIAMFN YTFQQVQEHTDQIWKFQRHDLIEEYHGRPAAP



PPFILLSHLQLFIKRVVLKTPAKRHKQLKNKLEKNEEAALLSWEIYLKENYLQNRQFQQKQRPEQKIED
ISNKVDAMVDLLDLPLKRSGSMEQRLASLEEQAQTAQALHWIVRTLRSAGFSSEADVPTLASQKA
AEEPDAEPGGRRKTEEPGDSYHVNARHLLYPNCPVTRFPVPNEKVPWETEFLLYDPPFYTAERKDA
AAMDPMGDTLEPLSTIQYNVVDGLRDRRSFHGPYTVQAGLPLNPMGRTGLRGRGSLSCFGPNHTL
YPMVTRWRRNEDGAICRKSIIKMLEVLVVKLPLSEHWALPGGSREPGEMLPRLKLRILRQEHWPSF
ENLLKCGMEVYKGYMDDPRNTDPAWIETVAVSVHFQDQNDVELNRLNSNLHACDSGASIRWQVVD
RRIPLYANHKTLLQKAAAEFGAHY

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 2 (Estrogen-responsive element-associated gene 1 protein) (Long transient receptor potential channel 2) (LTrpC-2) (LTrpC2) (Transient receptor potential channel 7) (TrpC7) (Transient receptor potential melastatin 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: [Isoform 1]: Nonselective, voltage-independent cation channel that mediates Na⁽⁺⁾ and Ca⁽²⁺⁾ influx, leading to increased cytoplasmic Ca⁽²⁺⁾ levels (PubMed:11385575, PubMed:11509734, PubMed:11804595, PubMed:12594222, PubMed:15561722, PubMed:16601673, PubMed:19171771, PubMed:20660597, PubMed:25620041, PubMed:27068538, PubMed:27383051, PubMed:28775320, PubMed:29745897, PubMed:30467180, PubMed:31513012, PubMed:34788616). Functions as a ligand-gated ion channel, gated by intracellular adenosine diphosphate ribose (ADP-ribose), Ca⁽²⁺⁾, warm temperature, and oxidative stress (PubMed:19171771, PubMed:25620041, PubMed:28775320, PubMed:30467180). The precise physiological activators are under debate; the true, physiological activators may be ADP-ribose and ADP-ribose-2'-phosphate (PubMed:20650899, PubMed:25918360). Binding of ADP-ribose to the cytoplasmic Nudix domain causes a conformation change; the channel is primed but still requires Ca⁽²⁺⁾ binding to trigger channel opening (PubMed:19171771, PubMed:25620041, PubMed:28775320, PubMed:29745897, PubMed:30467180). Extracellular Ca⁽²⁺⁾ passes through the channel and increases channel activity (PubMed:19171771). Contributes to Ca⁽²⁺⁾ release from intracellular stores in response to ADP-ribose (PubMed:19454650). Plays a role in numerous processes that involve signaling via intracellular Ca⁽²⁺⁾ levels (Probable). Besides, mediates the release of lysosomal Zn⁽²⁺⁾ stores in response to reactive oxygen species, leading to increased cytosolic Zn⁽²⁺⁾ levels (PubMed:25562606, PubMed:27068538). Plays a role in mediating behavioral and physiological responses to moderate heat and thereby contributes to body temperature homeostasis. Plays a role in insulin secretion, a process that requires increased cytoplasmic Ca⁽²⁺⁾ levels (By similarity). Required for normal IFNG and cytokine secretion and normal innate immune immunity in response to bacterial infection. Required for normal phagocytosis and cytokine release by macrophages exposed to zymosan (in vitro) (PubMed:22493272). Plays a role in dendritic cell differentiation and maturation,

and in dendritic cell chemotaxis via its role in regulating cytoplasmic $\text{Ca}(2+)$ levels (By similarity). Plays a role in the regulation of the reorganization of the actin cytoskeleton and filopodia formation in response to reactive oxygen species via its role in increasing cytoplasmic $\text{Ca}(2+)$ and $\text{Zn}(2+)$ levels (PubMed:27068538). Confers susceptibility to cell death following oxidative stress (PubMed:12594222, PubMed:25562606).; [Isoform 2]: Lacks cation channel activity. Does not mediate cation transport in response to oxidative stress or ADP-ribose.; [Isoform 3]: Lacks cation channel activity and negatively regulates the channel activity of isoform 1. Negatively regulates susceptibility to cell death in response to oxidative stress.

Subcellular Localization: Cell membrane ; Multi-pass membrane protein . Perikaryon . Cell projection . Cytoplasmic vesicle . Lysosome . Note=Detected at the cell membrane and in intracellular vesicles in cortical neurons. Detected on neuronal cell bodies and neurites (By similarity). Detected on the cell membrane in polymorphonuclear neutrophils. Detected on cytoplasmic vesicles and lysosomes in immature bone marrow dendritic cells (By similarity).; [Isoform 1]: Cell membrane ; Multi-pass membrane protein .; [Isoform 2]: Cell membrane ; Multi-pass membrane protein .; [Isoform 3]: Cell membrane ; Multi-pass membrane protein .

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.