

Recombinant Human MRGX2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50682

Size: 10ug, 100ug

Protein Name: Mas-related G protein-coupled receptor member X2

Synonym: MRGPRX2, MRGX2

UniProt ID: Q96LB1

UniProt Link: www.uniprot.org/uniprotkb/Q96LB1/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 330 AA

Molecular Weight: 37 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDPTTPAWGTESTTVNGNDQALLLLCGKETLIPVFLILFIALVGLVGNGFVLWLLGFRMRRNAFSVYV
LSLAGADFLFLCFQIINCLVYLSNFFCSISINFPSFFTTVMTCAYLAGLSMLSTVSTERCLSVLWPIWYR
CRRPRHLSAVVCVLLWALSLLLLSILEGKFCGFLFSDGDSGWCQTFDFITAAWLIFLFMVLCGSSLALL
VRILCGSRGLPLTRLYLTILLTVLVFLLCGLPFGIQWFLILWIWKDSDVLFCHIHVPVSVLSSLNSSANPII
YFFVGSFRKQWRLQQPILKLALQRALQDIAEVDHSEGCFRQGTPEMSRSSLV

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 Mas-related G protein-coupled receptor member X2 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: Mast cell-specific G protein-coupled receptor for basic secretagogues, which regulates mast cell degranulation and itch-related hypersensitivity reactions (PubMed:22069323, PubMed:25517090, PubMed:28288109, PubMed:34789874, PubMed:34789875). A secretagogue is an agent that promotes the secretion of hormones, neurohormones, chemical neurotransmitters or other compounds synthesized and secreted by cells (PubMed:25517090). Basic secretagogues comprise a set of cationic amphiphilic drugs, as well as endo- or exogenous peptides, consisting of a basic head group and a hydrophobic core (PubMed:25517090). Ligand binding causes a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates the activity of downstream effectors, such as adenylate cyclase (PubMed:28288109, PubMed:34789874, PubMed:34789875). MRGPRX2 is both coupled to G(q) and G(i) G proteins: G(q) coupling activates phospholipase C-beta, releasing diacylglycerol (DAG) and inositol 1,4,5-trisphosphate (IP3) second messengers, while G(i) coupling mediates inhibition of adenylate cyclase activity (PubMed:28288109, PubMed:34789874, PubMed:34789875). Recognizes and binds small molecules containing a cyclized tetrahydroisoquinoline (THIQ), such as non-steroidal neuromuscular blocking drugs (NMBDs), including tubocurarine and atracurium (By similarity). In response to these compounds, mediates pseudo-allergic reactions characterized by histamine release, inflammation and airway contraction (By similarity). Acts as a receptor for substance P, a basic secretagogue neuropeptide released from the terminals of specific sensory nerves, initiating a signaling that mediates neurogenic inflammation and pain (PubMed:30686732, PubMed:34789875). Neurogenic inflammation includes mast cell activation, recruitment of immune cells and release of inflammatory mediators, such as cytokines and chemokines (By similarity). The inflammatory response can then activate or sensitize nociceptors, promoting pain (By similarity). Acts as a receptor for a number of other ligands, including peptides and alkaloids, such as cortistatin-14, proadrenomedullin peptides PAMP-12 and, at lower extent, PAMP-20, antibacterial protein LL-37, PMX-53 peptide, beta-defensins, complanadine A and CXCL17 (PubMed:12915402, PubMed:15823563, PubMed:21441599, PubMed:22069323, PubMed:23698749, PubMed:24930830, PubMed:34789874, PubMed:34789875). Also acts as a receptor for opioids, such as (-)- and (+)-morphine, hydrocodone, sinomenine, dextromethorphan, dynorphin A, dynorphin B, and alpha- and beta-neoendorphin, promoting mast cell degranulation (PubMed:28288109).

Subcellular Localization: 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.