10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GPCR MRGX2 Rabbit pAb

GPCR MRGX2 Rabbit pAb
Catalog # AP55967

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	Q96LB1
Predicted	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	37099
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human GPCR MRGX2
Epitope Specificity	1-100/330
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Cell membrane; Multi-pass membrane protein.
SIMILARITY	Belongs to the G-protein coupled receptor 1 family. Mas subfamily.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Mas-related G protein-coupled receptor member X1 (MRGX) is a sensory neuron-specific G protein-coupled receptor that is involved in the development and function of nociceptive neurons and may also regulate the sensation or modulation of pain. MRGPRX2, is a 330 amino acid multi-pass membrane protein that functions as an orphan receptor and, like MRGX, is thought to be involved in the function of nociceptive neurons. Expressed in the central nervous system with highest expression in dorsal root ganglia, MRGX2 may also be involved in cortistatin function, possibly playing a role in sleep regulation and cortical function.

Additional Information

Gene ID	117194
Other Names	Mas-related G-protein coupled receptor member X2, MRGPRX2, MRGX2
Target/Specificity	Has a limited expression profile, both peripheral and within the central nervous system, with highest levels in dorsal root ganglion.
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	MRGPRX2 {ECO:0000303|Ref.5, ECO:0000312|HGNC:HGNC:17983}
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, and complanadine A (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).
Cellular Location	Cell membrane; Multi-pass membrane protein
Tissue Location	Mainly expressed in mast cells. Has a limited expression profile, both peripheral and within the central nervous system, with highest levels in dorsal root ganglion (PubMed:12915402) Detected in blood vessels, scattered lymphocytes, and gastrointestinal ganglia (at protein level) (PubMed:16161007)

Background

Mas-related G protein-coupled receptor member X1 (MRGX) is a sensory neuron-specific G protein-coupled receptor that is involved in the development and function of nociceptive neurons and may also regulate the sensation or modulation of pain. MRGPRX2, is a 330 amino acid multi-pass membrane protein that functions as an orphan receptor and, like MRGX, is thought to be involved in the function of nociceptive neurons.

Expressed in the central nervous system with highest expression in dorsal root ganglia, MRGX2 may also be involved in cortistatin function, possibly playing a role in sleep regulation and cortical function.