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MRGPRX2 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP16522b

Product Information

Application	WB, E
Primary Accession	Q96LB1
Other Accession	NP_473371.1
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB36019
Calculated MW	37099
Antigen Region	287-315

Additional Information

Gene ID	117194
Other Names	Mas-related G-protein coupled receptor member X2, MRGPRX2, MRGX2
Target/Specificity	This MRGPRX2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 287-315 amino acids from the C-terminal region of human MRGPRX2.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MRGPRX2 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

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

MRGPRX2 is the orphan receptor. Probably involved in the function of nociceptive neurons. May regulate nociceptor function and/or development, including the sensation or modulation of pain. Cortistatin-14 seems to be a high potency ligand at this receptor. Cortistatin has several biological functions including roles in sleep regulation locomotor activity, and cortical function. In receptor-expressing cells, cortistatin-stimulated increases in intracellular Ca(2+) but had no effect on basal or forskolin-stimulated cAMP levels, suggesting that this receptor is G(q)-coupled.

References

Gembardt, F., et al. Mol. Cell. Biochem. 319 (1-2), 115-123 (2008) :
Yang, S., et al. Gene 352, 30-35 (2005) :
Robas, N., et al. J. Biol. Chem. 278(45):44400-44404(2003)
Takeda, S., et al. FEBS Lett. 520 (1-3), 97-101 (2002) :

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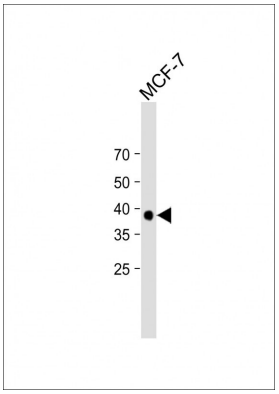
Images



All lanes: Anti-MRGPRX2 Antibody (C-term) at 1:2000 dilution + MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 38 KDa Blocking/Dilution buffer: 5% NFDM/TBST.