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

MRGX1 Rabbit pAb

MRGX1 Rabbit pAb
Catalog # AP58478

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	Q96LB2
Predicted	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	36250
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human MRGX1
Epitope Specificity	21-120/322
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.
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 function of nociceptive neurons. This integral membrane protein may also regulate nociceptor development and/or the sensation or modulation of pain. There are four members (MRGX1-4) in the human MRGX familly. MRGX1 and MRGX2 receptors stimulate both G Alpha q- and G Alpha i -regulated pathways, while MRGX3 and MRGX4 receptors mainly activate G Alpha q-regulated pathways. G Alpha q proteins are involved in the calcium-signaling pathway downstream of the MRGX receptors. MRGX receptors are unique in that they are expressed in a subset of small dorsal root and trigeminal sensory neurons.

Additional Information

Gene ID	259249
Other Names	Mas-related G-protein coupled receptor member X1, Sensory neuron-specific G-protein coupled receptor 3/4, MRGPRX1 {ECO:0000303|PubMed:11551509, ECO:0000312|HGNC:HGNC:17962}
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	MRGPRX1 {ECO:0000303|PubMed:11551509, ECO:0000312|HGNC:HGNC:17962}
Function	G protein-coupled receptor specifically expressed in sensory neurons of dorsal root ganglion, and which is involved in itch perception and pain transmission (PubMed:11850634, PubMed:20004959, PubMed:26582731, PubMed:33358893, PubMed:36302898, PubMed:37347749, PubMed:37591889, PubMed:39725036). Specifically activated by a variety of enkephalin (PENK) neuropeptides, such as BAM22 and BAM8-22, which induce itch in a histamine-independent manner (PubMed:11850634, PubMed:36302898, PubMed:37591889, PubMed:39725036). Activated by some tick defensins, such as I.persulcatus Def1 and I.ricinus Def2, evoking itch (PubMed:33358893). Also activated by conotoxin CNF-Tx2, inducing itch sensation (PubMed:30243794, PubMed:37591889). Activated by the antimalarial drug chloroquine; however, activation requires concentrations that exceed the chloroquine concentrations observed in plasma of patients undergoing chloroquine treatment (PubMed:20004959). Also activated following cleavage by the dust mite cysteine protease Der p1 (PubMed:28768771). 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:36302898, PubMed:37591889). MRGPRX1 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, leading to sensitize TRPV1 in pruriceptors, while G(i) coupling mediates inhibition of adenylate cyclase activity (PubMed:23074220, PubMed:36302898, PubMed:37347749, PubMed:37591889). Activation of MRGPRX1 in the peripheral nervous system elicits itch, evoking scratching (PubMed:28223516). MRGPRX1 activation in sensory neurons of the nasal mucosa mediates sneezing responses to irritants or influenza-virus (By similarity). Activation in the central nervous system dampens chronic pain: BAM8-22-binding at the central terminals prevents pain signals passing to spinal cord neurons, attenuating spinal nociceptive transmission (PubMed:28223516). Activation by CXCL17 induces chemotactic movement (PubMed:41167449).
Cellular Location	Cell membrane; Multi-pass membrane protein
Tissue Location	Specifically expressed in small-diameter sensory neurons of dorsal root ganglion and trigeminal sensory neurons

Background

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.