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

Anti-MRGX1 Antibody

Catalog # AP53995

Product Information

Application	WB, IF/IC
Primary Accession	Q96LB2
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	36250

Additional Information

Gene ID	259249
Other Names	MRGX1; SNSR3; SNSR4; Mas-related G-protein coupled receptor member X1; Sensory neuron-specific G-protein coupled receptor 3/4
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human MRGX1. The exact sequence is proprietary.
Dilution	WB~~1/500 - 1/1000 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

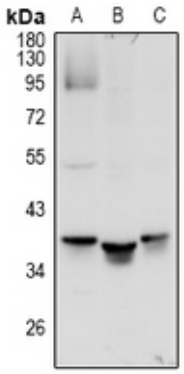
Name	MRGPRX1 {ECO:0000303|PubMed:11551509, ECO:0000312|HGNC:HGNC:17962}
Function	G protein-coupled receptor specifically expressed in sensory neurons of dorsal root ganglion, and which is involved in itch perception and pain transmission (PubMed:11850634, PubMed:20004959, PubMed:26582731, PubMed:33358893, 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).

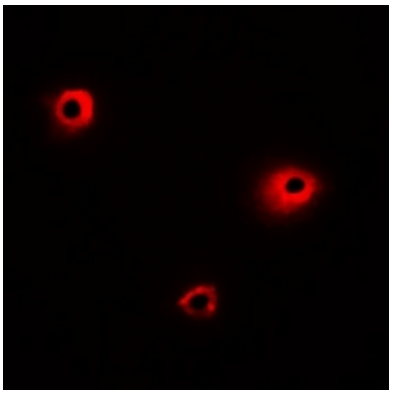
Cellular Location Cell membrane; Multi-pass membrane protein

Tissue Location Specifically expressed in small-diameter sensory neurons of dorsal root ganglion and trigeminal sensory neurons

Images



Western blot analysis of MRGX1 expression in U87MG (A) whole cell lysates. (Predicted band size: 36 kD; Observed band size: 36 kD)



Immunofluorescent analysis of MRGX1 staining in HepG2 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with Alexa Fluor 647-conjugated secondary antibody (red) in PBS at room temperature in the dark.

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