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GPCR TGR7 Rabbit pAb

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Catalog # AP55968

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q8TDS7
Predicted	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	36118
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human GPCR TGR7
Epitope Specificity	101-200/321
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. Note=Localized at the plasma membrane but internalized into the cytoplasm after treatment with beta-alanine.
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 receptors are sensory neuron-specific G protein-coupled receptors that are usually involved in the development and function of nociceptive neurons and may also regulate the sensation or modulation of pain. MRGD (MAS-related GPR, member D), also known as MRGPRD or TGR7, is a 321 amino acid multi-pass membrane protein that belongs to the G-protein coupled receptor 1 family and the Mas subfamily. MRGD is suggested to function specifically as a receptor for beta-alanine, a naturally occurring beta amino acid. Beta-alanine induces Ca2+ influx and decreases forskolin-stimulated cAMP production in cells expressing MRGD. Neurons of outer epidermis that express MRGD act as nociceptors in which they respond indirectly to external stimuli by detecting ATP release in the skin. MRGD is encoded by a gene located on human chromosome 11q13.2.

Additional Information

Gene ID	116512
Other Names	Mas-related G-protein coupled receptor member D, Beta-alanine receptor, G-protein coupled receptor TGR7, MRGPRD {ECO:0000303|PubMed:39580805, ECO:0000312|HGNC:HGNC:29626}
Dilution	WB=1:500-2000,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	MRGPRD {ECO:0000303|PubMed:39580805, ECO:0000312|HGNC:HGNC:29626}
Function	G protein-coupled receptor that acts as a mediator of peripheral pain and itch sensations (PubMed:15037633, PubMed:23091359, PubMed:35840655, PubMed:39580805). Activated by various ligands, such as beta-alanine, beta-aminoisobutyrate, angiotensin 1-7, alamandine and allantoin, causing a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates the activity of downstream effectors (PubMed:15037633, PubMed:23091359, PubMed:35840655, PubMed:39580805). MRGPRD 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:15037633, PubMed:23091359, PubMed:35840655, PubMed:39580805). MRGPRD is specifically expressed in neurons that innervate the epidermis and acts as a key mediator of skin stimuli, such as itch, pain and mechanical stimuli (By similarity). Required to maintain skin homeostasis in response to irritant dermatitis by initiating a signaling that promotes glutamate release, inhibiting mast cell hyperresponsiveness and skin inflammation (By similarity). Required to prevent cardiomyocyte hypertrophy following activation by alamandine, a decarboxylation product of angiotensin 1-7 (By similarity). Acts as a receptor for allantoin in dorsal root ganglion neurons, eliciting chronic itch (pruritus) (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein. Note=Localized at the plasma membrane but internalized into the cytoplasm after treatment with beta-alanine

Background

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