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CNGB1 Rabbit pAb

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Catalog # AP54724

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q14028
Predicted	Rat, Pig, Human, Mouse, Rabbit, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	139678
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human CNGB1
Epitope Specificity	856-960/1251
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	Membrane; Multi-pass membrane protein.
DISEASE	Defects in CNGB1 are the cause of retinitis pigmentosa type 45 (RP45) [MIM:613767]. RP leads to degeneration of retinal photoreceptor cells. Patients typically have night vision blindness and loss of midperipheral visual field. As their condition progresses, they lose their far peripheral visual field and eventually central vision as well.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	bs-11332P is one synthetic peptide derived from human truncated GARP. Glutamic acid rich protein (GARP) is a soluble protein localized to the outer segments of the rod photoreceptor. It forms a subunit of cyclic nucleotide-gated (CNG) channels, nonselective cation channels, which play important roles in both visual and olfactory signal transduction. When associated with CNGA1, it is involved in the regulation of ion flow into the rod photoreceptor outer segment (ROS), in response to light-induced alteration of the levels of intracellular cGMP. There are 3 isoforms produced by alternative splicing. Isoform GARP2 is a high affinity rod photoreceptor phosphodiesterase (PDE6)-binding protein that modulates its catalytic properties; it is a regulator of spontaneous activation of rod PDE6, thereby serving to lower rod photoreceptor 'dark noise' and allowing these sensory cells to operate at the single photon detection limit. Defects in GARP are the cause of retinitis pigmentosa type 25 (RP25). RP leads to degeneration of retinal photoreceptor cells. Patients typically have night vision blindness and loss of midperipheral visual field. As their condition progresses, they lose their far peripheral visual field and eventually central vision as well.

Additional Information

Gene ID	1258

Other Names	Cyclic nucleotide-gated channel beta-1, CNG channel beta-1, Cyclic nucleotide-gated cation channel 4, CNG channel 4, CNG-4, CNG4, Cyclic nucleotide-gated cation channel gamma, Cyclic nucleotide-gated cation channel modulatory subunit, Glutamic acid-rich protein, GARP, CNGB1 {ECO:0000303|PubMed:34699778}
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	CNGB1 {ECO:0000303|PubMed:34699778}
Function	Pore-forming subunit of the rod cyclic nucleotide-gated channel. Mediates rod photoresponses at dim light converting transient changes in intracellular cGMP levels into electrical signals. In the dark, cGMP levels are high and keep the channel open enabling a steady inward current carried by Na(+) and Ca(2+) ions that leads to membrane depolarization and neurotransmitter release from synaptic terminals. Upon photon absorption cGMP levels decline leading to channel closure and membrane hyperpolarization that ultimately slows neurotransmitter release and signals the presence of light, the end point of the phototransduction cascade (By similarity) (PubMed:34699778). Pore- forming subunit of the olfactory cyclic nucleotide-gated channel. Operates in the cilia of olfactory sensory neurons where chemical stimulation of the odorant is converted to an electrical signal. Mediates odorant-induced cAMP-dependent Ca(2+) influx triggering neuron depolarization. The rise of intracellular Ca(2+) levels potentiates the olfactory response by activating Ca(2+)-dependent Cl(-) channels, but it also serves as a negative feedback signal to desensitize the channel for rapid adaptation to odorants (By similarity). Conducts cGMP- and cAMP-gated ion currents, with permeability for monovalent and divalent cations. The selectivity for Ca(2+) over Na(+) increases with cGMP concentrations, whereas the selectivity among monovalent ions is independent of the cGMP levels (By similarity) (PubMed:34699778).
Cellular Location	Photoreceptor outer segment membrane {ECO:0000250|UniProtKB:E1AZ71}; Multi-pass membrane protein. Cell projection, cilium membrane {ECO:0000250|UniProtKB:A0A8I5ZN27, ECO:0000250|UniProtKB:E1AZ71}; Multi-pass membrane protein. Note=Localized in rod outer segment membranes. {ECO:0000250|UniProtKB:E1AZ71}

Background

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