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CNG3 Rabbit pAb

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Catalog # AP54311

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q16281
Predicted	Rat, Pig, Human, Mouse, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	78838
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human CNG3
Epitope Specificity	601-694/694
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 CNGA3 are the cause of achromatopsia type 2 (ACHM2) [MIM:216900]; also known as total colorblindness or rod monochromacy (RMCH2). ACHM2 is an autosomal recessive condition characterized by day blindness and photophobia. In ACHM2 patients the cones are defective and the subjects see better at night.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Cyclic nucleotide-gated (CNG) cation channels are heteromeric complexes made up of principal alpha and modulatory beta subunits. The alpha subunits consist of CNG1-3 and form functional cation channels by themselves. The beta subunits consist of CNG4-6 and, unlike the alpha subunits, do not form functional channels, but rather modify the properties of channels. CNG channels are essential components of olfactory and visual transduction. In olfactory neurons, CNG2, CNG4.3 and CNG5 form Ca2+ permeable channels, which open and depolarize the cell in response to cAMP. In rod photoreceptors, CNG1 and CNG4.1 combine to form Ca ion permeable channels, which give rise to a current in response to cGMP. CNG3 and CNG6 are expressed in cone receptors and may combine to form a native cGMP-activated channel. CNG channels have been implicated in other areas. CNG1 is also expressed in medium-sized and small-sized arteries, suggesting a role for CNG in the regulation of arterial blood pressure and of blood supply to different regions. CNG1, CNG4.1 and CNG4.2 have been detected in the rat pineal gland. CNG2, CNG4.3 and CNG5 are present in GT1 cell lines and may play a role in the secretion of gonadotropin-releasing hormone.

Additional Information

Gene ID	1261

Other Names	Cyclic nucleotide-gated channel alpha-3, CNG channel alpha-3, CNG-3, CNG3, Cone photoreceptor cGMP-gated channel subunit alpha-3, CNGA3 {ECO:0000303|PubMed:37463923, ECO:0000312|HGNC:HGNC:2150}
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	CNGA3 {ECO:0000303|PubMed:37463923, ECO:0000312|HGNC:HGNC:2150}
Function	Pore-forming subunit of the cone cyclic nucleotide-gated channel. Mediates cone photoresponses at bright 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 (PubMed:10888875, PubMed:12815043, PubMed:34969976, PubMed:37463923). Pore-forming subunit of the gustatory cyclic nucleotide-gated channel. In the taste buds, may sense oral extracellular pH and conduct ion currents that modulate the excitability of taste cells (By similarity). Conducts cGMP- and cAMP-gated ion currents, with permeability for monovalent and divalent cations (By similarity) (PubMed:12815043).
Cellular Location	Photoreceptor outer segment membrane {ECO:0000250|UniProtKB:Q9JJZ8}; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Note=Localized in cone outer segment membranes {ECO:0000250|UniProtKB:Q9JJZ8}
Tissue Location	Prominently expressed in retina.

Background

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