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GCAP1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1567b

Product Information

Application	WB, IHC-P, E
Primary Accession	P43080
Other Accession	P46065
Reactivity	Human
Predicted	Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB0515
Calculated MW	22920
Antigen Region	160-191

Additional Information

Gene ID	118142757;2978
Other Names	Guanylyl cyclase-activating protein 1, GCAP 1, Guanylate cyclase activator 1A, GUCA1A, C6orf131, GCAP, GCAP1, GUCA1
Target/Specificity	This GCAP1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 160-191 amino acids from the C-terminal region of human GCAP1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	GCAP1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GUCA1A
Synonyms	C6orf131, GCAP, GCAP1, GUCA1

Function	Stimulates retinal guanylyl cyclase when free calcium ions concentration is low and inhibits guanylyl cyclase when free calcium ions concentration is elevated (PubMed:18706439, PubMed:19459154, PubMed:30184081, PubMed:30622141). This Ca(2+)-sensitive regulation of retinal guanylyl cyclase is a key event in recovery of the dark state of rod photoreceptors following light exposure (By similarity). May be involved in cone photoreceptor light response and recovery of response in bright light (By similarity).
Cellular Location	Membrane; Lipid-anchor {ECO:0000250|UniProtKB:P46065}. Photoreceptor inner segment. Cell projection, cilium, photoreceptor outer segment. Note=Present at higher levels in cone than in rod outer segments (PubMed:9620085). Subcellular location is not affected by light or dark conditions
Tissue Location	In the retina, it is expressed in rod and cone photoreceptors.

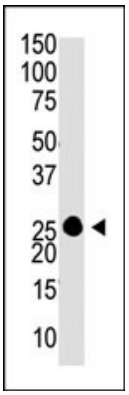
Background

Guanylate cyclase-activating protein is a l Ca(2+)-binding protein that upregulates synthesis of cGMP in photoreceptors. The known mammalian GCAPs are more than 90% similar, consisting of 201 to 205 amino acids, and containing 3 identically conserved Ca(2+)-binding sites. The GUCA1A gene, also termed GCAP1, is transcribed into a single 1.7-kb mRNA species detectable only in the retina. In a 4-generation British family with typical clinical features of autosomal dominant cone dystrophy a tyr99-to-cys mutation) in the GUCA1A gene has been identified. Another family with a pro50-to-leu mutation in GUCA1A demonstrated phenotypic variability ranging from mild photophobia to rod-cone dystrophy. The mutant protein could activate guanylate cyclase 1 (GUCY2D) and displayed similar calcium sensitivity to wildtype protein. However, there was a marked increase in the susceptibility to protease degradation and a reduction in the thermal stability of the pro50-to-leu mutation, which may depress cellular concentration and thereby contribute to retinal cell mortality.

References

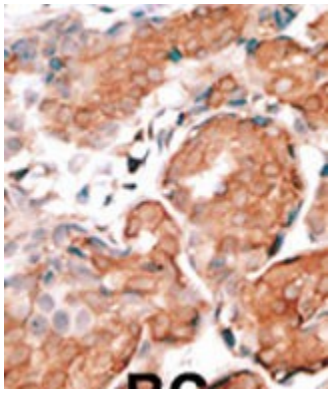
Pennesi, M.E., et al., Proc. Natl. Acad. Sci. U.S.A. 100(11):6783-6788 (2003).
Payne, A.M., et al., Hum. Mol. Genet. 7(2):273-277 (1998).
Subbaraya, I., et al., J. Biol. Chem. 269(49):31080-31089 (1994).

Images



The anti-GCAP1 C-term Pab (Cat. #AP1567b) is used in Western blot to detect GCAP1 in Y79 cell lysate.

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical



relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.