

Melanopsin Polyclonal Antibody

Catalog # AP70912

Product Information

Application	WB, E, IHC-P
Primary Accession	Q9UHM6
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	52635

Additional Information

Gene ID	94233
Other Names	OPN4; MOP; Melanopsin; Opsin-4
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunofluorescence: 1/200 - 1/1000. ELISA: 1/5000. Not yet tested in other applications. E~~N/A IHC-P~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

Protein Information

Name	OPN4 (HGNC:14449)
Synonyms	MOP
Function	G protein-coupled photoreceptor that signals through the G(q/11) family of G proteins in response to light in intrinsically photosensitive retinal ganglion cells (ipRGCs) (By similarity). Can also activate other G proteins, including G(i/o) and G(s), depending on the cell type, leading to either activation or inhibition of adenylate cyclase and cAMP-dependent signaling (PubMed:35274137). Activation occurs when opsin-bound cis-retinal chromophore absorbs a photon and isomerizes to all-trans-retinal, inducing a conformational change in the opsin that triggers a G protein-mediated phototransduction cascade (PubMed:15674244). Acts as a bistable protein, allowing photoreversible regeneration of the cis-retinal chromophore after stimulation (PubMed:15674244). Contributes to non-image-forming visual response to light in ipRGCs, including the pupillary light reflex and the regulation of circadian rhythms (By similarity). In M1 ipRGCs (non- image forming) subtypes, activates a G(q)-phospholipase C (PLC) signaling cascade leading to depolarization through opening of TRPC6/7 channels and decreased intrinsic excitability (By similarity). Mediates phototransduction in

M4 ipRGCs (image forming) subtypes across dim to bright light conditions via G(q)-PLC signaling, resulting in increased intrinsic excitability through closure of potassium leak channels (most likely TASK channels), thereby enhancing contrast sensitivity (By similarity). At bright light intensities, further enhances depolarization in M4 ipRGCs via activation of TRPC channels (By similarity). May be involved in the optokinetic visual tracking response. May also play a role in regulating retinal hyaloid vessel growth and regression (By similarity).

Cellular Location

Cell membrane; Multi-pass membrane protein. Cell projection, axon {ECO:0000250|UniProtKB:Q9QXZ9}. Cell projection, dendrite {ECO:0000250|UniProtKB:Q9QXZ9}. Perikaryon {ECO:0000250|UniProtKB:Q9QXZ9}

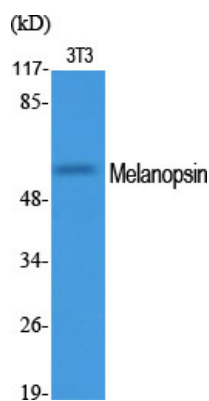
Tissue Location

Expressed in the retina.

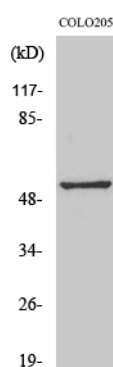
Background

Photoreceptor required for regulation of circadian rhythm. Contributes to pupillar reflex and other non-image forming responses to light. May be able to isomerize covalently bound all- trans retinal back to 11-cis retinal (By similarity).

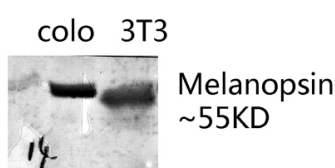
Images



Western Blot analysis of various cells using Melanopsin Polyclonal Antibody



Western Blot analysis of COLO205 cells using Melanopsin Polyclonal Antibody



Western blot analysis of various lysis using Melanopsin Polyclonal Antibody. Secondary antibody was diluted at 1:20000

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