10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Encephalopsin Polyclonal Antibody

Catalog # AP69737

Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	Q9H1Y3
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	44873

Additional Information

Gene ID	23596
Other Names	OPN3; ECPN; Opsin-3; Encephalopsin; Panopsin
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. Immunofluorescence: 1/200 - 1/1000. ELISA: 1/5000. Not yet tested in other applications. IHC-P~~N/A IF~~1:50~200 ICC~~N/A E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

Protein Information

Name	OPN3 (HGNC:14007)
Synonyms	ECPN
Function	G protein-coupled photoreceptor that selectively activates G(i/o) proteins in response to light, thereby decreasing intracellular cAMP levels (PubMed:28842328, PubMed:30168605, PubMed:31380578, PubMed:36869204). Activation occurs when the 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:36869204). Mediates blue light-induced pigmentation in melanocytes by activating calcium/CAMK2 signaling, followed by phosphorylation of CREB, p38, ERK and MITF. Required for TYR and DCT blue light-induced complex formation in melanocytes (PubMed:28842328). Involved in keratinocyte differentiation in response to blue-light (PubMed:30168605). Plays a role in melanocyte survival through regulation of intracellular calcium levels and subsequent BCL2/RAF1 signaling. Additionally, regulates apoptosis via cytochrome c release and subsequent activation of the caspase cascade (PubMed:31730232). Responsible for ultraviolet A (UVA)-

induced keratinocytes supranuclear melanin cap formation via activating calcium/CAMK2, CREB, and Akt signal transduction, and ultimately increasing DYNC1I1 and DCTN1 expression levels, thereby playing a role in the skin response to UV radiation (PubMed:36869204). Required for the UVA-mediated induction of calcium and MAPK signaling resulting in the expression of MMP1, MMP2, MMP3, MMP9 and TIMP1 in dermal fibroblasts (PubMed:31380578). Also plays a role in light-mediated glucose uptake, mitochondrial respiration and fatty acid metabolism in brown adipocyte tissues. May be involved in photorelaxation of airway smooth muscle cells, via blue light-dependent GPCR signaling pathways (By similarity). Also inhibits melanogenesis in melanocytes by specifically inhibiting MC1R-evoked cAMP signaling in a constitutive, light-independent manner (PubMed:31097585). In the paraventricular nucleus of the hypothalamus, inhibits MC4R-mediated cAMP signaling and activates KCNJ13 channel opening in a constitutive manner, thereby promoting food intake and modulating spontaneous firing of neurons (PubMed:39951488).

Cellular Location

Cell membrane; Multi-pass membrane protein. Cytoplasm. Note=Localized to the membrane and cytoplasm of HaCaT and HEK cells.

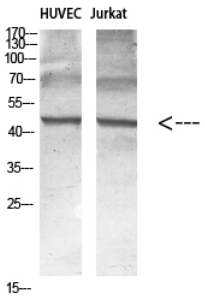
Tissue Location

Expressed throughout the epidermis and dermis, predominantly in the basal layer on the facial and abdominal skin (at protein level) (PubMed:30168605). Expressed in dermal fibroblasts (at protein level) (PubMed:31380578). Expressed in melanocytes (at protein level) (PubMed:28842328, PubMed:31097585, PubMed:31730232). Expressed in keratinocytes (PubMed:28842328). Expressed in the retina (PubMed:30284927). Expressed in tracheal airway smooth muscle (at protein level) (PubMed:30284927).

Background

May play a role in encephalic photoreception.

Images



Western blot analysis of various cell Lysate, antibody was diluted at 1:1000. Secondary antibody was diluted at 1:20000

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