SANTA CRUZ BIOTECHNOLOGY, INC.

OPN1SW (N-20): sc-14363

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

G protein-coupled receptors (GPCRs), which are characterized by containing seven transmembrane α helices, elicit G protein-mediated signaling cascades in response to a variety of stimuli. The opsin subfamily, which represents approximately 90 percent of all GPCRs, is comprised of photoreceptors that are activated by light. It includes the red, green and blue-sensitive opsins and rhodopsin. The opsin subfamily consists of an apoprotein covalently linked to 11-*cis*-retinal, which undergoes isomerization upon the absorption of photons. This isomerization leads to a conformational change of the protein, which results in the activation of hundreds of G proteins. Color is perceived in humans by three pigments, which localize to retinal cone photoreceptor cells. They are the blue-, green- and red-sensitive opsins, which are encoded by OPN1SW, OPN1MW and OPN1LW, respectively. Mutations in the OPN1MW and OPN1LW encoded opsins lead to the X-linked disorders protanopia and deuteranopia, respectively. Mutations in the OPN1SW encoded opsin leads to tritanopia, an autosomal dominant disorder, which is characterized by decreased sensitivity to blue light.

CHROMOSOMAL LOCATION

Genetic locus: OPN1SW (human) mapping to 7q32.1; Opn1sw (mouse) mapping to 6 A3.3.

SOURCE

OPN1SW (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of the opsin protein encoded by OPN1SW of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14363 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

OPN1SW (N-20) is recommended for detection of the opsin protein encoded by OPN1SW of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

OPN1SW (N-20) is also recommended for detection of the opsin protein encoded by OPN1SW in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for OPN1SW siRNA (h): sc-40142, OPN1SW siRNA (m): sc-40143, OPN1SW shRNA Plasmid (h): sc-40142-SH, OPN1SW shRNA Plasmid (m): sc-40143-SH, OPN1SW shRNA (h) Lentiviral Particles: sc-40142-V and OPN1SW shRNA (m) Lentiviral Particles: sc-40143-V.

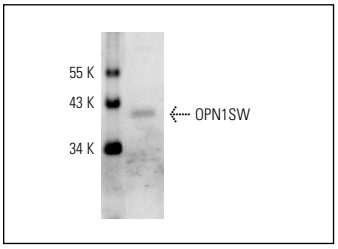
Molecular Weight of OPN1SW: 40 kDa.

Positive Controls: mouse eye extract: sc-364241.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



OPN1SW (N-20): sc-14363. Western blot analysis of OPN1SW expression in mouse eye tissue extract.

SELECT PRODUCT CITATIONS

1. Gandorfer, A., et al. 2004. Posterior vitreous detachment induced by microplasmin. Invest. Ophthalmol. Vis. Sci. 45: 641-647.
2. Schleich, C.E., et al. 2010. Retinal photoreceptors of two subterranean tuco-tuco species *(Rodentia, Ctenomys):* morphology, topography, and spectral sensitivity. J. Comp. Neurol. 518: 4001-4015.
3. Sato, K., et al. 2010. S-opsin protein is incompletely modified during N-glycan processing in Rpe65$^{-/-}$ mice. Exp. Eye Res. 91: 54-62.
4. Ray, A., et al. 2010. Morphological alterations in retinal neurons in the S334ter-line3 transgenic rat. Cell Tissue Res. 339: 481-491.
5. Huber, G., et al. 2010. Novel rodent models for macular research. PLoS ONE 5: e13403.
6. Puller, C. and Haverkamp, S. 2011. Cell-type-specific localization of protocadherin β16 at AMPA and AMPA/Kainate receptor-containing synapses in the primate retina. J. Comp. Neurol. 519: 467-479.
7. Niessner, C., et al. 2011. Avian ultraviolet/violet cones identified as probable magnetoreceptors. PLoS ONE 6: e20091.
8. Novales Flamarique, I. 2011. Unique photoreceptor arrangements in a fish with polarized light discrimination. J. Comp. Neurol. 519: 714-737.
9. de Melo, J., et al. 2011. The Spalt family transcription factor Sall3 regulates the development of cone photoreceptors and retinal horizontal interneurons. Development 138: 2325-2336.
10. Jelcick, A.S., et al. 2011. Genetic variations strongly influence phenotypic outcome in the mouse retina. PLoS ONE 6: e21858.
11. Puller, C., et al. 2011. Bipolar cells of the ground squirrel retina. J. Comp. Neurol. 519: 759-774.

RESEARCH USE

For research use only, not for use in diagnostic procedures.