

rhodopsin (RET-P1): sc-57433

BACKGROUND

G protein-coupled receptors (GPCRs), which are characterized as 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, which include 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. Specifically, rhodopsin exhibits a maximal absorption at 495 nm and mediates vision in dim light. Mutations in the rhodopsin gene lead to retinitis pigmentosa, which can be inherited as an autosomal dominant, an autosomal recessive or an X-linked recessive disorder.

CHROMOSOMAL LOCATION

Genetic locus: RHO (human) mapping to 3q22.1; Rho (mouse) mapping to 6 E3.

SOURCE

rhodopsin (RET-P1) is a mouse monoclonal antibody raised against a membrane preparation from adult retina of rat origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

rhodopsin (RET-P1) is available conjugated to Alexa Fluor® 647 (sc-57433 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

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APPLICATIONS

rhodopsin (RET-P1) is recommended for detection of rhodopsin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for rhodopsin siRNA (h): sc-40150, rhodopsin siRNA (m): sc-40151, rhodopsin shRNA Plasmid (h): sc-40150-SH, rhodopsin shRNA Plasmid (m): sc-40151-SH, rhodopsin shRNA (h) Lentiviral Particles: sc-40150-V and rhodopsin shRNA (m) Lentiviral Particles: sc-40151-V.

Molecular Weight of rhodopsin: 40 kDa.

Positive Controls: human eye extract: sc-364223, mouse eye extract: sc-364241 or rat eye extract: sc-364805.

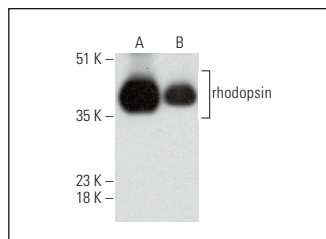
STORAGE

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

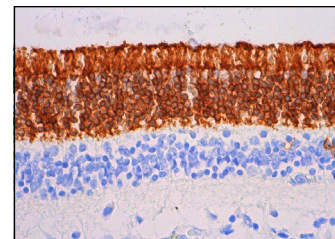
RESEARCH USE

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

DATA



rhodopsin (RET-P1): sc-57433. Western blot analysis of rhodopsin expression in mouse eye (A) and human eye (B) tissue extracts.



rhodopsin (RET-P1): sc-57433. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fetal eye tissue showing cytoplasmic and membrane staining of cells in retina.

SELECT PRODUCT CITATIONS

- Kahle, N.A., et al. 2010. Furin cleavage of bacterial expressed glutathione-S-transferase-pro-transforming growth factor β 1 fusion protein *in vitro*. Protein Pept. Lett. 17: 416-418.
- Ryskamp, D.A., et al. 2011. The polymodal ion channel transient receptor potential vanilloid 4 modulates calcium flux, spiking rate, and apoptosis of mouse retinal ganglion cells. J. Neurosci. 31: 7089-7101.
- Muraoka, Y., et al. 2012. Real-time imaging of rabbit retina with retinal degeneration by using spectral-domain optical coherence tomography. PLoS ONE 7: e36135.
- Zhang, Y., et al. 2014. BBS mutations modify phenotypic expression of CEP290-related ciliopathies. Hum. Mol. Genet. 23: 40-51.
- Ying, M., et al. 2015. Drug-inducible synergistic gene silencing with multiple small hairpin RNA molecules for gene function study in animal model. Transgenic Res. 24: 309-317.
- Wang, Y., et al. 2017. E2f1 mediates high glucose-induced neuronal death in cultured mouse retinal explants. Cell Cycle 16: 1824-1834.
- Zheng, S., et al. 2018. DZNep inhibits H3K27me3 deposition and delays retinal degeneration in the rd1 mice. Cell Death Dis. 9: 310.
- Wei, R., et al. 2019. Rb1/Rbl1/Vhl loss induces mouse subretinal angioma-tous proliferation and hemangioblastoma. JCI Insight 4: e127889.
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See **rhodopsin (1D4): sc-57432** for rhodopsin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.