SANTA CRUZ BIOTECHNOLOGY, INC.

rhodopsin (I-17): sc-31629

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.

REFERENCES

1. Fung, B.K., et al. 1980. Flow of information in the light-triggered cyclic nucleotide cascade of vision. Proc. Natl. Acad. Sci. USA 78: 152-156.
2. Hargrave, P.A., et al. 1983. The structure of bovine rhodopsin. Biophys. Struct. Mech. 9: 235-244.
3. Wang, S.Z., et al. 1992. A visual pigment from chicken that resembles rhodopsin: amino acid sequence, gene structure, and functional expression. Biochemistry 13: 3309-3315.
4. al-Maghtheh, M., et al. 1993. Rhodopsin mutations in autosomal dominant retinitis pigmentosa. Hum. Mutat. 2: 249-255.
5. Iiri, T., et al. 1998. G protein diseases furnish a model for the turn-on switch. Nature 394: 35-38.
6. Lindsay, S.M., et al. 1999. Spectral sensitivity of vision and bioluminescence in the midwater shrimp. Biol. Bull. 197: 348-360.
7. Palczewski, K., et al. 2000. Crystal structure of rhodopsin: a G protein-coupled receptor. Science 289: 739-745.

CHROMOSOMAL LOCATION

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

SOURCE

rhodopsin (I-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of rhodopsin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31629 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

rhodopsin (I-17) 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), 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).

rhodopsin (I-17) is also recommended for detection of rhodopsin in additional species, including equine, canine, porcine and avian.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.