

# Product Information

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103 USA

Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757

email: techservice@sial.com sigma-aldrich.com

## Monoclonal Anti-Rhodopsin Clone 1D4

produced in mouse, purified immunoglobulin

Catalog Number **R5403**

### Product Description

Monoclonal Anti-Rhodopsin is produced in mouse using as immunogen the C-terminal nine amino acids of bovine rhodopsin known as the 1D4 epitope. The antibody recognizes rhodopsin from human, bovine, and rat. The antibody was protein G purified.

Monoclonal Anti-Rhodopsin has been successfully used in Western blot, immunocytochemistry, and immunoprecipitation. By Western blot, this antibody detects an ~40 kDa protein representing rhodopsin from Sf9 cells expressing the bovine gene. Immunocytochemical staining of rhodopsin in human retinal samples results in staining of both rod and cone outer segments.

Vision involves the conversion of light into electrochemical signals that are processed by the retina and subsequently sent to and interpreted by the brain. The process of converting light to an electrochemical signal begins when the membrane-bound protein, rhodopsin, absorbs light within the retina. Photoexcitation of rhodopsin causes the cytoplasmic surface of the protein to become catalytically active. In the active state, rhodopsin activates transducin, a GTP binding protein. Once activated, transducin promotes the hydrolysis of cGMP by phosphodiesterase (PDE). The decrease of intracellular cGMP concentrations causes the ion channels within the outer segment of the rod or cone to close, thus causing membrane hyperpolarization and, eventually, signal transmission. Rhodopsin's activity is believed to be shut off by its phosphorylation followed by binding of the soluble protein arrestin.<sup>1,2</sup>

### Reagent

Supplied in 100 µL of phosphate buffered saline containing 1.0 mg/ml bovine serum albumin and 0.05 % sodium azide as preservative.

Antibody concentration: ~1 mg/ml.

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

### Storage/Stability

Store at -20 °C. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

### Product Profile

Immunoblotting: a recommended working dilution of 1:1000 was determined using Sf9 cells expressing the bovine gene

Immunocytochemistry: a recommended working dilution of 1:1000 was determined using human retinal samples

**Note:** In order to obtain best results and assay sensitivities of different techniques and preparations, determination of optimal working dilutions by titration test is recommended.

### References

1. Yarfitz, S., and Hurley, J.B., *J. Biol. Chem.*, **20**, 14329-14332 (1994).
2. Arshavsky, V.Y., *Trends Neurosci.*, **25**, 124-126 (2002).

AH,PHC 12/07-1

Sigma brand products are sold through Sigma-Aldrich, Inc. Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.

**SIGMA-ALDRICH™**