

**Rhodopsin Antibody**  
**Rhodopsin Antibody, Clone 4D2**  
**Catalog # ASM10114****Specification****Rhodopsin Antibody - Product Information**

|                   |                                |
|-------------------|--------------------------------|
| Application       | WB, IHC, ICC, IP, E            |
| Primary Accession | <a href="#">P02699</a>         |
| Other Accession   | <a href="#">NP_001014890.1</a> |
| Host              | Mouse                          |
| Isotype           | IgG1                           |
| Reactivity        | Amphibian, Avian, Fish         |
| Clonality         | Monoclonal                     |
| Format            | APC                            |

**Description**

Mouse Anti-Bovine Rhodopsin Monoclonal IgG1

**Target/Specificity**

Detects ~40kDa. Binds specifically to the N-terminus of Rhodopsin. Does not detect Rhodopsin in invertebrates.

**Other Names**

OPN2 Antibody, opsd Antibody, opsin 2 Antibody, opsin 2 rod pigment Antibody, opsin2 Antibody, RHO Antibody, RP4 Antibody, MGC138309 Antibody, Retinitis Pigmentosa 4 Antibody

**Immunogen**

Bovine Rhodopsin

**Purification**

Protein G Purified

**Storage**

-20°C

**Storage Buffer**

PBS pH7.4, 50% glycerol, 0.09% sodium azide

**Shipping Temperature**

Blue Ice or 4°C

**Certificate of Analysis**

1 µg/ml of SMC-176 was sufficient for detection of rhodopsin in 10 µg of rat eye lysate by colorimetric immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody.

**Cellular Localization**

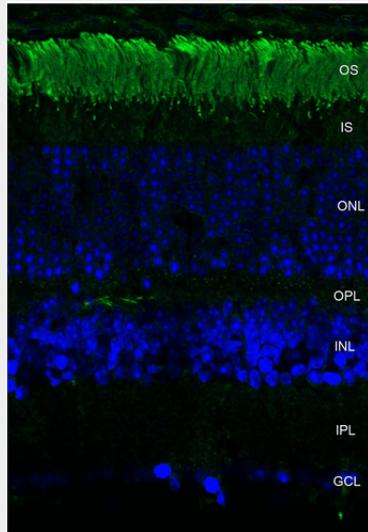
Membrane

**Rhodopsin Antibody - Protocols**

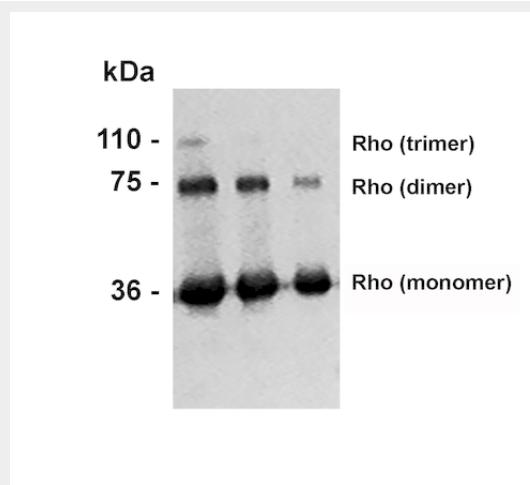
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)

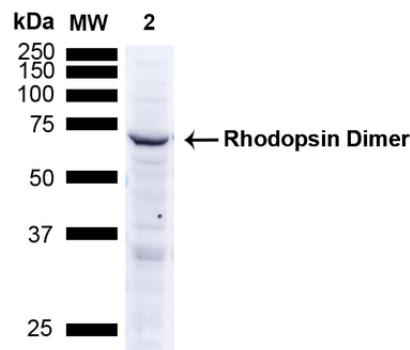
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

**Rhodopsin Antibody - Images**

Immunohistochemistry analysis using Mouse Anti-Rhodopsin Monoclonal Antibody, Clone 4D2 (ASM10114). Tissue: retina. Species: Mouse. Primary Antibody: Mouse Anti-Rhodopsin Monoclonal Antibody (ASM10114) at 1:1000. Secondary Antibody: FITC Goat Anti-Mouse (green). Counterstain: DAPI (blue) nuclear stain. Localization: Staining of photoreceptor outer segment (OS). Other layers of the retina: IS - inner segment; ONL - outer nuclear layer; OPL - outer plexiform layer; INL - inner nuclear layer; IPL - inner plexiform layer; GCL - ganglion cell layer..



Western Blot analysis of Bovine photoreceptor membranes showing detection of Rhodopsin protein using Mouse Anti-Rhodopsin Monoclonal Antibody, Clone 4D2 (ASM10114). Lane 1: MW ladder. Lane 2: 10 ug. Lane 3: 5 ug. Lane 4: 2.5 ug.. Primary Antibody: Mouse Anti-Rhodopsin Monoclonal Antibody (ASM10114) at 1:1000.



Western Blot analysis of Human A549 cells showing detection of ~38.9kDa Rhodopsin protein using Mouse Anti-Rhodopsin Monoclonal Antibody, Clone 4D2 (ASM10114). Lane 1: MW ladder. Lane 2: Human A549 Cells 15 ug). Load: 15 ug. Block: 5% Skim Milk Powder in TBST. Primary Antibody: Mouse Anti-Rhodopsin Monoclonal Antibody (ASM10114) at 1:1000 for 2.5 hours at RT with shaking. Secondary Antibody: Goat anti-mouse IgG:HRP at 1:1000 for 1 hour at RT with shaking. Color Development: Chemiluminescent for HRP (Moss) for 5 min in RT. Predicted/Observed Size: ~38.9kDa. Other Band(s): Band appears at ~75 kDa indicating detection of the Rhodopsin dimer.

### Rhodopsin Antibody - Background

Rhodopsin consists of the protein moiety opsin and a reversibly covalently bound cofactor, retinal. Opsin, a bundle of seven membrane embedded alpha-helices, binds retinal, a photo reactive chromophore, in a central pocket (2, 3). In addition to being the pigment of the retina that is responsible for both the formation of the photoreceptor cells, its function is to specifically convey information stored in the specific geometry of the chromophore to the surface of the molecule upon light absorption (2). In the active state, rhodopsin activates transduction, a GTP binding protein. Once activated, transduction promotes the hydrolysis of cGMP by phosphodiesterase. Rhodopsin's activity is believed to be shut off by its phosphorylation followed by binding of the soluble protein arrestin (4).

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 (5).

### Rhodopsin Antibody - References

1. Molday R.S., Hicks D., and Molday L. (1987) Invest Ophthalmol Vis Sci. 28: 50-61.
2. Ridge K.D., Lee S.S.J., and Abdulaev N.G. (1996) J of Biol Chem. 271: 7860-7867.
3. Matsuyama T., Yamashita T., Imai H. and Shichida Y. (2009) J Biol Chem. Manuscript M109.063875.
4. Feurstein S.E., et al. (2009) Biochemistry. 48(45): 10733-10742.
5. Iannaccone A., et al. (2006) Vision Res. 46(27): 4556-4567.