

# Rhodopsin Monoclonal Antibody (1D4)

Product Details	
Size	100 µL
Species Reactivity	Bovine, Human, Mouse, Rat
Published Species	Rat, Non-human primate, Bovine, Human, Mouse
Host/Isotope	Mouse / IgG1
Class	Monoclonal
Type	Antibody
Clone	1D4
Conjugate	Unconjugated
Immunogen	Bovine rhodopsin.
Form	Liquid
Concentration	1 mg/mL
Purification	Protein G
Storage buffer	PBS with 1mg/mL BSA
Contains	0.05% sodium azide
Storage Conditions	-20° C, Avoid Freeze/Thaw Cycles
RRID	AB_325050

Applications	Tested	Dilution	Published
Western Blot (WB)	✓	1:100-1:1000	8 Publications
Immunocytochemistry (ICC)	✓	1:1,000	3 Publications
Dot blot (DB)	-		1 Publication
Affinity Purification (AP)	-		1 Publication
Immunoprecipitation (IP)	✓	Assay dependent	1 Publication
ELISA (ELISA)	-		1 Publication
Immunofluorescence (IF)	✓	1:10-1:100	
Immunohistochemistry (Paraffin) (IHC (P))	✓	1:100-1:1000	

## Product Specific Information

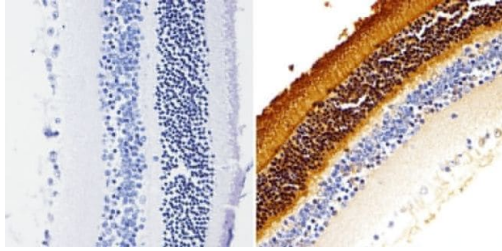
MA1-722 detects rhodopsin from human, mouse and bovine retinal samples. Clone 1D4 has also been used successfully in Zebrafish. It does not recognize rhodopsin in zebrafish rods, but instead labels long double cone outer segments that express red opsin (Yin, J. et al, 2012).

MA1-722 has been successfully used in Western blot, IHC (P), immunocytochemistry and immunoprecipitation procedures. 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.

The MA1-722 immunogen is bovine rhodopsin. The epitope for this antibody has been localized to the C-terminal nine amino acids of bovine rhodopsin known as the 1D4 epitope.

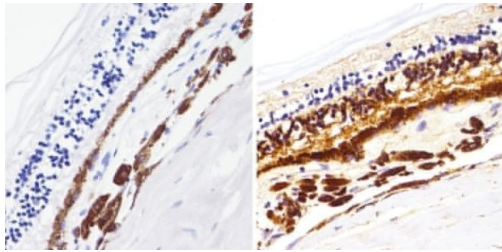
## Product Images For Rhodopsin Monoclonal Antibody (1D4)

### Rhodopsin Antibody (MA1-722) in IHC (P)



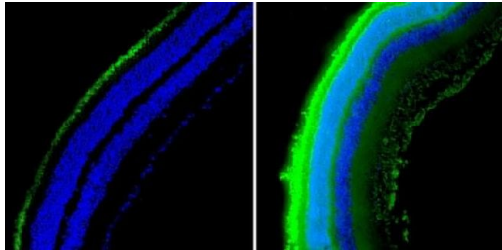
Immunohistochemistry analysis of Rhodopsin showing staining in the nucleus of paraffin-embedded mouse retinal tissue (right) compared to a negative control without primary antibody (left). To expose target proteins, antigen retrieval was performed using 10mM sodium citrate (pH 6.0), microwaved for 8-15 min. Following antigen retrieval, tissues were blocked in 3% H<sub>2</sub>O<sub>2</sub>-methanol for 15 min at room temperature, washed with ddH<sub>2</sub>O and PBS, and then probed with a Rhodopsin monoclonal antibody (Product # MA1-722) diluted in 3% BSA-PBS at a dilution of 1:1000 overnight at 4°C in a humidified chamber. Tissues were washed extensively in PBST and detection was performed using an HRP-conjugated secondary antibody followed by colorimetric detection using a DAB kit. Tissues were counterstained with hematoxylin and dehydrated with ethanol and xylene to prep for mounting.

### Rhodopsin Antibody (MA1-722) in IHC (P)



Immunohistochemistry analysis of Rhodopsin showing staining in the nucleus of paraffin-embedded human retinal tissue (right) compared to a negative control without primary antibody (left). To expose target proteins, antigen retrieval was performed using 10mM sodium citrate (pH 6.0), microwaved for 8-15 min. Following antigen retrieval, tissues were blocked in 3% H<sub>2</sub>O<sub>2</sub>-methanol for 15 min at room temperature, washed with ddH<sub>2</sub>O and PBS, and then probed with a Rhodopsin monoclonal antibody (Product # MA1-722) diluted in 3% BSA-PBS at a dilution of 1:200 overnight at 4°C in a humidified chamber. Tissues were washed extensively in PBST and detection was performed using an HRP-conjugated secondary antibody followed by colorimetric detection using a DAB kit. Tissues were counterstained with hematoxylin and dehydrated with ethanol and xylene to prep for mounting.

### Rhodopsin Antibody (MA1-722) in IHC (P)



Immunofluorescent analysis of Rhodopsin (green) showing staining in mouse retinal tissue (right) compared to a negative control without primary antibody (left). Formalin-fixed tissue was permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Tissue was probed with a Rhodopsin monoclonal antibody (Product # MA1-722) in 3% BSA-PBS at a dilution of 1:50 and incubated overnight at 4°C in a humidified chamber. Tissue was washed with PBST and incubated with a DyLight-488 conjugated secondary antibody in PBS at room temperature in the dark. Nuclei were stained with DAPI (blue) and images were taken at a magnification of 20x.

[View more figures on thermofisher.com](https://www.thermofisher.com)

## 15 References

### Western Blot (8)

#### Biochemistry

#### A G Protein-Coupled Receptor Dimerization Interface in Human Cone Opsins.

"MA1722 was used in western blot to study the dimerization affinity and binding interface of human cone opsins"

Authors: Jastrzebska B,Comar WD,Kaliszewski MJ,Skinner KC,Torcasio MH,Esway AS,Jin H,Palczewski K,Smith AW

**Species**  
Human

**Dilution**  
Not Cited

**Year**  
2017

#### Methods in molecular biology (Clifton, N.J.)

#### 1D4: a versatile epitope tag for the purification and characterization of expressed membrane and soluble proteins.

"MA1-722 was used in immunocytochemistry and western blot to describe various immunochemical procedures used for the detection, purification, and localization of 1D4-tagged proteins"

Authors: Molday LL,Molday RS

**Species**  
Human

**Dilution**  
1:5000

**Year**  
2015

[View more WB references on thermofisher.com](#)

### Immunocytochemistry (3)

#### Nature

#### Frizzled proteins are colonic epithelial receptors for C. difficile toxin B.

"MA1722 was used in immunocytochemistry to report that frizzled family proteins are receptors for Clostridium difficile toxin B"

Authors: Tao L,Zhang J,Meraner P,Tovaglieri A,Wu X,Gerhard R,Zhang X,Stallcup WB,Miao J,He X,Hurdle JG,Breault DT,Brass AL,Dong M

**Species**  
Human

**Dilution**  
Not Cited

**Year**  
2016

#### PLoS one

#### Reproducible and sustained regulation of Gs signalling using a metazoan opsin as an optogenetic tool.

"MA1-722 was used in immunocytochemistry to evaluate a novel optogenetic tool for the study of G protein-coupled receptor signalling"

Authors: Bailes HJ,Zhuang LY,Lucas RJ

**Species**  
Human

**Dilution**  
1:1000

**Year**  
2012

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