

## Product datasheet

# Anti-Rhodopsin antibody [EPR21876] ab221664

Recombinant RabMAb

★★★★★ [1 Abreviews](#) [4 References](#) [9 Images](#)

### Overview

<b>Product name</b>	Anti-Rhodopsin antibody [EPR21876]
<b>Description</b>	Rabbit monoclonal [EPR21876] to Rhodopsin
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> WB, IHC-P, IHC-Fr, IP, mIHC
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
<b>Positive control</b>	WB: Human, mouse and rat eye tissue lysates; Rat retina lysate. IHC-P: Human, mouse and rat retina tissues. IHC-Fr: Mouse and rat retina. IP: Rat eye tissue lysate. mIHC: Human retina tissue.
<b>General notes</b>	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"><li>- High batch-to-batch consistency and reproducibility</li><li>- Improved sensitivity and specificity</li><li>- Long-term security of supply</li><li>- Animal-free production</li></ul> <p>For more information <a href="#">see here</a>.</p> <p>Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAb<sup>®</sup> patents</a>.</p>

### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
<b>Storage buffer</b>	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EPR21876
<b>Isotype</b>	IgG

## Applications

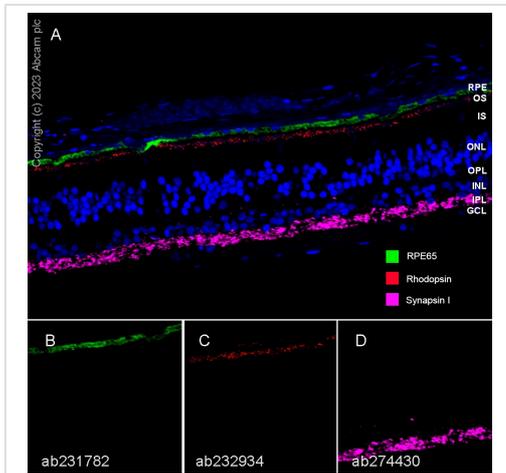
**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab221664 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Detects a band of approximately 35-150 kDa (predicted molecular weight: 38 kDa).
IHC-P	★★★★★ (1)	1/32000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. (mouse and rat). 1/4000 (human).
IHC-Fr		1/500. Antigen retrieval is not needed.
IP		1/30.
mlHC		Use at an assay dependent concentration.

## Target

<b>Function</b>	Photoreceptor required for image-forming vision at low light intensity. Required for photoreceptor cell viability after birth. Light-induced isomerization of 11-cis to all-trans retinal triggers a conformational change leading to G-protein activation and release of all-trans retinal.
<b>Tissue specificity</b>	Rod shaped photoreceptor cells which mediates vision in dim light.
<b>Involvement in disease</b>	Retinitis pigmentosa 4 Night blindness, congenital stationary, autosomal dominant 1
<b>Sequence similarities</b>	Belongs to the G-protein coupled receptor 1 family. Opsin subfamily.
<b>Post-translational modifications</b>	Phosphorylated on some or all of the serine and threonine residues present in the C-terminal region. Contains one covalently linked retinal chromophore.
<b>Cellular localization</b>	Membrane. Synthesized in the inner segment (IS) of rod photoreceptor cells before vectorial transport to the rod outer segment (OS) photosensory cilia.

## Images



Multiplex immunohistochemistry - Anti-Rhodopsin antibody [EPR21876] (ab221664)

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded Human retina tissue labeling RPE65, Rhodopsin and Synapsin I with **ab231782** at 1/8000 dilution, **ab232934** at 1/8000 dilution and **ab274430** at 1/1500 dilution followed by a ready to use Opal Polymer HRP Ms + Rb secondary antibody. Nuclear counter stain used was DAPI.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

Panel A: merged staining of anti-Synapsin I (magenta; Opal™690), anti-RPE65 (green; Opal™520) and anti-Rhodopsin (red; Opal™570) on human retina.

Panel B: anti-RPE65 stained on pigmented layer.

Panel C: anti-Rhodopsin stained on rod photoreceptor cells.

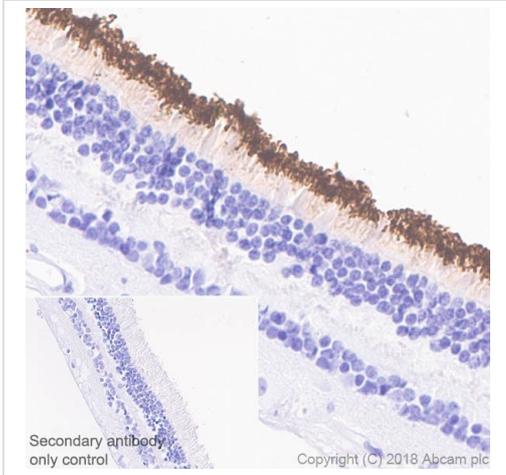
Panel D: anti-Synapsin I stained on inner plexiform layer.

The section was incubated in three rounds of staining: in the order of **ab274430**, **ab231782**, and **ab232934** for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

The section was incubated in three rounds of staining: in the order of **ab312840**, **ab16669**, and **ab236434** for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

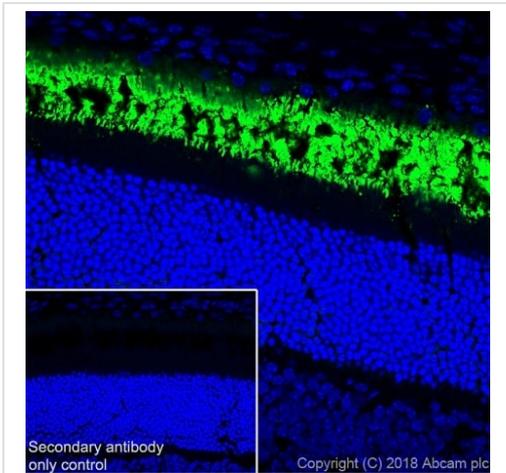


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rhodopsin antibody [EPR21876] (ab221664)

Immunohistochemical analysis of paraffin-embedded human retina tissue labeling Rhodopsin with ab221664 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining in outer segment of human retina is observed (PMID: 23223288). Counter stained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

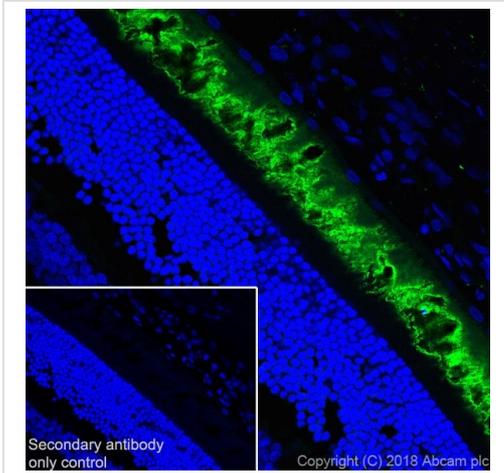


Immunohistochemistry (Frozen sections) - Anti-Rhodopsin antibody [EPR21876] (ab221664)

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen mouse retina tissue labeling Rhodopsin with ab221664 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor<sup>®</sup> 488) (**ab150077**) secondary antibody at 1/1000 dilution (green). Positive staining in the outer segment of mouse retina is observed (PMID: 21938483).

The nuclear counter stain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor<sup>®</sup> 488) (**ab150077**) secondary antibody at 1/1000 dilution.

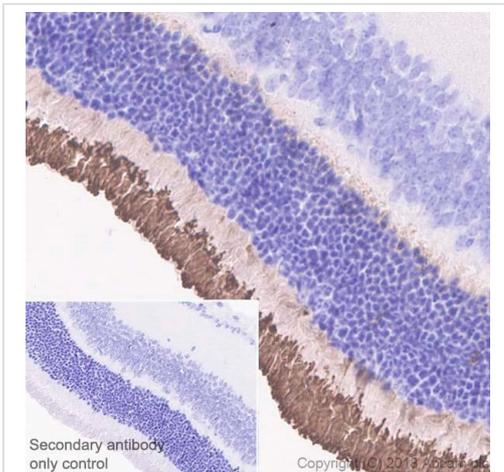


Immunohistochemistry (Frozen sections) - Anti-Rhodopsin antibody [EPR21876] (ab221664)

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen rat retina tissue labeling Rhodopsin with ab221664 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (**ab150077**) secondary antibody at 1/1000 dilution (green). Positive staining in the outer segment of rat retina is observed (PMID: 21938483).

The nuclear counter stain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (**ab150077**) secondary antibody at 1/1000 dilution.

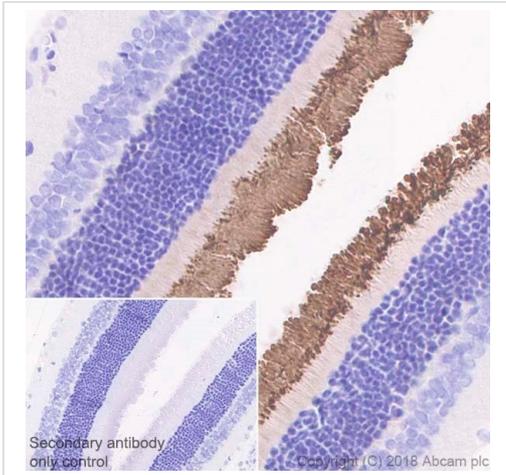


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rhodopsin antibody [EPR21876] (ab221664)

Immunohistochemical analysis of paraffin-embedded mouse retina tissue labeling Rhodopsin with ab221664 at 1/32000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining in outer segment of mouse retina is observed (PMID: 23223288). Counter stained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

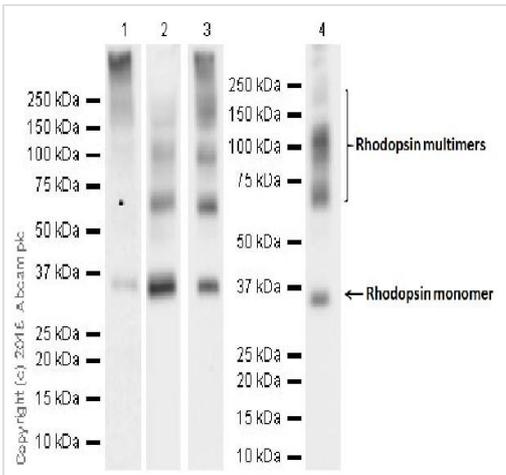


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Rhodopsin antibody [EPR21876] (ab221664)

Immunohistochemical analysis of paraffin-embedded rat retina tissue labeling Rhodopsin with ab221664 at 1/32000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Cytoplasmic staining in outer segment of rat retina is observed (PMID: 23223288). Counter stained with hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-Rhodopsin antibody [EPR21876] (ab221664)

**Lanes 1-3** : Anti-Rhodopsin antibody [EPR21876] (ab221664) at 1/1000 dilution

**Lane 4** : Anti-Rhodopsin antibody [EPR21876] (ab221664) at 1/5000 dilution

**Lane 1** : Human eye tissue at 20 µg

**Lane 2** : Mouse eye tissue at 20 µg

**Lane 3** : Rat retina tissue lysate at 20 µg

**Lane 4** : Rat eye tissue lysate at 10 µg

**Secondary**

**All lanes** : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

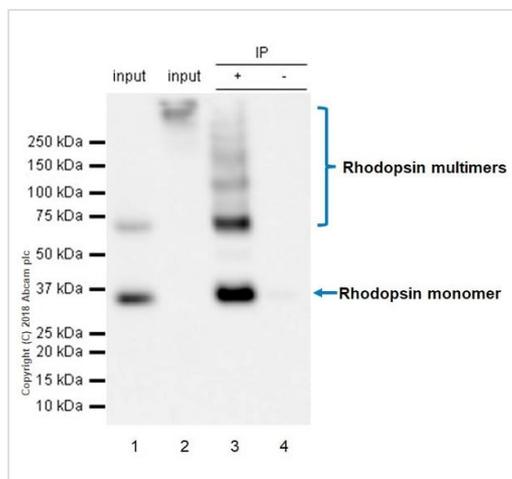
**Predicted band size:** 38 kDa

**Observed band size:** 35-150 kDa

**Exposure Time:** Lane 1: 3 minutes; Lane 2: 3 seconds; Lane 3: 58 seconds; Lane 4: 26 seconds.

Blocking/Dilution buffer: 5% NFD/MBST.

The multiple bands (>60 kDa) correspond to dimers and multimers of rhodopsin, consistent with the literature (PMID: 25270370; PMID: 22219383).



Immunoprecipitation - Anti-Rhodopsin antibody [EPR21876] (ab221664)

Rhodopsin was immunoprecipitated from 0.35 mg rat eye tissue lysate with ab221664 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab221664 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used for detection at 1/5000 dilution.

Lane 1: Rat eye tissue lysate 10 µg (input).

Lane 2: Rat eye tissue lysate (boiled) 10 µg (input).

Lane 3: ab221664 IP in Rat eye tissue lysate.

Lane 4: Rabbit monoclonal IgG (ab172730) instead of ab221664 in rat eye tissue lysate.

Exposure time: 15 seconds

The multiple bands (>60 kDa) correspond to dimers and multimers of rhodopsin, consistent with the literature (PMID: 25270370; PMID: 22219383).

We do not recommend boiling samples in loading buffer as this may cause protein aggregation (lane 2).

Why choose a recombinant antibody?

- Research with confidence**  
Consistent and reproducible results
- Long-term and scalable supply**  
Recombinant technology
- Success from the first experiment**  
Confirmed specificity
- Ethical standards compliant**  
Animal-free production

Anti-Rhodopsin antibody [EPR21876] (ab221664)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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