# Product Datasheet

## Anti-Rhodopsin antibody ab3424

<table>
<thead>
<tr>
<th>★★★★★ 2 Abreviews</th>
<th>4 References</th>
<th>1 Image</th>
</tr>
</thead>
</table>

### Overview

**Product name**
Anti-Rhodopsin antibody

**Description**
Rabbit polyclonal to Rhodopsin

**Host species**
Rabbit

**Specificity**
Detects Rhodopsin from bovine retina samples. Data from Yin J et al., 2012 (PMID 22743318) indicates that in Zebrafish ab3424 appears to recognize Red Opsin rather than Rhodopsin.

**Tested applications**
Suitable for: WB, IHC-Fr

**Species reactivity**
Reacts with: Mouse, Cow

**Predicted to work with:** Rat, Rabbit, Cat, Dog, Human, Cynomolgus monkey, Chinese hamster, African bush elephant

**Does not react with:** Sheep

**Immunogen**
Synthetic peptide corresponding to Cow Rhodopsin aa 338-348.

**Sequence:**
SKTETSQVAPA

(Peptide available as ab4967)

**Positive control**
Bovine outer rod segment extracts.

### Properties

**Form**
Liquid

**Storage instructions**
Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.

**Storage buffer**
Constituents: 0.1% BSA, 99% PBS

**Purity**
Immunogen affinity purified

**Primary antibody notes**
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
Rhodopsin activity is believed to be shut off by phosphorylation followed by binding of the soluble proteins arrestin.

**Clonality**
- Polyclonal

**Isotype**
- IgG

**Applications**

Our Abpromise guarantee covers the use of ab3424 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB</td>
<td>Use a concentration of 2 µg/ml. Detects a band of approximately 36 kDa (predicted molecular weight: 38 kDa). Can be blocked with Rhodopsin peptide (ab4967). By Western blot, this antibody detects an ~36 kDa protein representing rhodopsin from bovine outer rod segment extracts.</td>
<td></td>
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<tr>
<td>IHC-Fr</td>
<td>Use at an assay dependent concentration. PubMed: 22743318</td>
<td></td>
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</tbody>
</table>

**Target**

**Function**
- 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.

**Tissue specificity**
- Rod shaped photoreceptor cells which mediates vision in dim light.

**Involvement in disease**
- Retinitis pigmentosa 4
- Night blindness, congenital stationary, autosomal dominant 1

**Sequence similarities**
- Belongs to the G-protein coupled receptor 1 family. Opsin subfamily.

**Post-translational modifications**
- Phosphorylated on some or all of the serine and threonine residues present in the C-terminal region.
- Contains one covalently linked retinal chromophore.

**Cellular localization**
- Membrane. Synthesized in the inner segment (IS) of rod photoreceptor cells before vectorial transport to the rod outer segment (OS) photosensory cilia.

**Images**
Immunohistochemistry (Frozen sections) image of anti-Rhodopsin antibody (ab3424) staining on a Zebrafish eye. This tissue section was stained with anti-Rhodopsin antibody ab3424 (green) and anti-Rhodopsin monoclonal antibody ab5417 (red) for 16 hours at 4°C. Nuclei were stained with DAPI (blue). This image suggests that ab3424 (like ab5417) may detect Red Opsin and not Rhodopsin in the Zebrafish. For more information please see Yin J. et al., 2012.

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