# Overview

**Product name**  
Anti-Vimentin antibody [RV202]  

**Description**  
Mouse monoclonal [RV202] to Vimentin  

**Host species**  
Mouse  

**Specificity**  
This antibody reacts exclusively with vimentin  

**Tested applications**  
Suitable for: Flow Cyt, ICC, IHC-Fr, WB, IHC-FoFr, IP, IHC-P, ICC/IF, IHC (PFA fixed)  

**Species reactivity**  
Reacts with: Mouse, Rat, Goat, Chicken, Hamster, Cow, Dog, Human, Xenopus laevis, Monkey, Zebrafish  

**Immunogen**  
Fusion protein corresponding to Bovine Vimentin. RV202 is a mouse monoclonal IgG1 antibody derived by fusion of SP2/0-Ag14 mouse myeloma cells with spleen cells from a BALB/c mouse immunized with a vimentin extract of bovine lens.  

**Positive control**  
Purchase matching WB positive control: [Recombinant Human Vimentin protein](https://www.abcam.com/recombinant-human-vimentin-protein-p7517)  

IHC-Fr: Tonsilar lymphoma tissue. ICC/IF: Cultured bovine lens epithelial cells and widtype HAP1 cells.  

**General notes**  
Abcam recommended secondaries - Goat Anti-Mouse HRP (ab205719) and Goat Anti-Mouse Alexa Fluor® 488 (ab150113).  

See other anti-mouse secondary antibodies that can be used with this antibody.  

## Properties

**Form**  
Liquid  

**Storage instructions**  

**Storage buffer**  
Preservative: 0.09% Sodium azide  
Constituent: PBS  

**Purity**  
Protein G purified  

**Clonality**  
Monoclonal  

**Clone number**  
RV202
### Myeloma

**Isotype**  
IgG1

### Function

Vimentins are class-III intermediate filaments found in various non-epithelial cells, especially mesenchymal cells. Vimentin is attached to the nucleus, endoplasmic reticulum, and mitochondria, either laterally or terminally.

Involved with LARP6 in the stabilization of type I collagen mRNAs for CO1A1 and CO1A2.

### Tissue specificity

Highly expressed in fibroblasts, some expression in T- and B-lymphocytes, and little or no expression in Burkitt's lymphoma cell lines. Expressed in many hormone-independent mammary carcinoma cell lines.

### Involvement in disease

Cataract 30

### Target

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<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Flow Cyt</td>
<td>1/100 - 1/200.</td>
<td>ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.</td>
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<tr>
<td>ICC</td>
<td>1/20.</td>
<td></td>
</tr>
<tr>
<td>IHC-Fr</td>
<td>Use at an assay dependent concentration. Recommended range is 1/100 - 1/200 for Immunohistochemistry with avidin-biotinylated horseradish peroxidase complex (ABC) as detection. For PFA fixed tissue use at 1/1000.</td>
<td></td>
</tr>
<tr>
<td>WB</td>
<td>1/100 - 1/1000.</td>
<td>Detects a band of approximately 57 kDa.</td>
</tr>
<tr>
<td>IHC-FoFr</td>
<td>1/500.</td>
<td></td>
</tr>
<tr>
<td>IP</td>
<td>Use at an assay dependent concentration.</td>
<td></td>
</tr>
<tr>
<td>IHC-P</td>
<td>Use at an assay dependent concentration.</td>
<td></td>
</tr>
<tr>
<td>ICC/IF</td>
<td>Use a concentration of 1 µg/ml.</td>
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### Application Notes

- **Flow Cyt**: 1/100 - 1/200. 
- **ICC**: 1/20. 
- **IHC-Fr**: Use at an assay dependent concentration. Recommended range is 1/100 - 1/200 for Immunohistochemistry with avidin-biotinylated horseradish peroxidase complex (ABC) as detection. For PFA fixed tissue use at 1/1000. 
- **WB**: 1/100 - 1/1000. Detects a band of approximately 57 kDa. 
- **IHC-FoFr**: 1/500. 
- **IP**: Use at an assay dependent concentration. 
- **IHC-P**: Use at an assay dependent concentration. 
- **ICC/IF**: Use a concentration of 1 µg/ml. 
- **IHC (PFA fixed)**: 1/1000. 

### Applications

Our Abpromise guarantee covers the use of ab8978 in the following tested applications.

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

**Target**

<table>
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<tr>
<th>Domain</th>
<th>The central alpha-helical coiled-coil rod region mediates elementary homodimerization. The [IL]-x-C-x-x-[DE] motif is a proposed target motif for cysteine S-nitrosylation mediated by the iNOS-S100A8/A9 transnitrosylase complex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-translational modifications</td>
<td>Filament disassembly during mitosis is promoted by phosphorylation at Ser-55 as well as by nestin (By similarity). One of the most prominent phosphoproteins in various cells of mesenchymal</td>
</tr>
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</table>
Phosphorylation is enhanced during cell division, at which time vimentin filaments are significantly reorganized. Phosphorylation by PKN1 inhibits the formation of filaments. Phosphorylated at Ser-56 by CDK5 during neutrophil secretion in the cytoplasm. Phosphorylated by STK33. O-glycosylated during cytokinesis at sites identical or close to phosphorylation sites, this interferes with the phosphorylation status. S-nitrosylation is induced by interferon-gamma and oxidatively-modified low-density lipoprotein (LDL(ox)) possibly implicating the iNOS-S100A8/9 transnitrosylase complex.

**Cellular localization**

Cytoplasm.

**Form**

Vimentin is found in connective tissue and in the cytoskeleton.

**Images**

Silencing of Lamin A/C in unmethylated neuroblastoma cells induces changes in different cytoskeletal components

Immunofluorescence staining showing changes in SK-N-SH-lamin-A/C-shRNA compared with SK-N-SH-scramble-shRNA in (A) β-actin filaments, (B) F-actin filaments, (C) vimentin filaments, and (D) α-tubulin. Lamin A/C is shown in green; β-actin, F-actin, vimentin, and α-tubulin are shown in red. DNA is stained in blue (DAPI). Scale bar, 10μM.

Vimentin is detected using ab8978 at 1/100 dilution. Neuroblastoma cells were fixed with 4% paraformaldehyde and permeabilized using 0.5% Triton X-100.

(From Figure 5C of Rauschert et al)

ab8978 staining Vimentin in wild-type HAP1 cells (top panel) and VIM knockout HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab8978 at 1μg/ml and ab202272 (Rabbit monoclonal [EP1332Y] to alpha Tubulin (Alexa Fluor® 594)) at 1/250 dilution overnight at +4°C, followed by a further incubation at room temperature for 1h with ab150117 (Goat secondary antibody to Mouse IgG (Alexa Fluor® 488)) at 2 μg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).
Paraffin-embedded human colon tissue stained for Vimentin using ab8978 at 1/100 dilution in immunohistochemical analysis.

ab8978 staining Vimentin in Human fetal kidney tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with CAS-Block for 1 hour at 25°C; antigen retrieval was by heat mediation using OmniPrep (pH 9). Samples were incubated with primary antibody (1/500) for 1 hour at 25°C. An Alexa Fluor® 555-conjugated Donkey polyclonal (1/200) was used as the secondary antibody.

Overlay histogram showing HeLa cells stained with ab8978 (red line). The cells were fixed with methanol (5 min) and then permeabilized with 0.1% PBS-Triton for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab8978, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This anti-Vimentin antibody gave a positive signal in HeLa cells fixed with 4% paraformaldehyde (10
Immunohistochemistry (Frozen sections) - Anti-Vimentin antibody [RV202] (ab8978)

Immunofluorescence staining images of 9 day old zebrafish embryos. 

**ab8978** reacts with in connective tissue cells and bloodvessels.

Frozen sample treated with Acetone:Methanol 1:1, antibody diluted 1/100 and incubated for 45 minutes at room temperature.

Immunocytochemistry/ Immunofluorescence - Anti-Vimentin antibody [RV202] (ab8978)

**ab8978** were fixed with paraformaldehyde, permeabilized with PBS and 0.5% Triton ×100 and blocking with 0.1% BSA + 10% Goat Serum at 25°C for 30 minutes was performed. Samples were incubated with primary antibody (1/250: in PBS, 0.1% BSA and 10% Goat Serum) for 12 hours at 4°C. An Alexa Fluor®594-conjugated goat polyclonal to mouse IgG was used undiluted as secondary antibody.
**Immunocytochemistry/ Immunofluorescence - Anti-Vimentin antibody [RV202] (ab8978)**

This image is courtesy of an Abreview submitted by Dr J. Chai

**ab8978** staining Vimentin - Neural Stem Cell Marker in Human Colon fibroblasts by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with methanol, permeabilized in 0.1% Triton and blocked with 0.25% serum free protein blocker for 20 minutes at 28°C. Samples were incubated with primary antibody (1/100 in antibody diluent) for 2 hours at 28°C. **ab6785** Goat polyclonal anti-Mouse IgG - H&L (FITC) (1/800) was used as the secondary antibody. Nuclei were counterstained with propidium iodide.

**Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Vimentin antibody [RV202] (ab8978)**

This image is courtesy of an anonymous abreview.

**ab8978** staining Vimentin in Dog soft tissue sarcoma tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 15% serum for 1 hour at 20°C; antigen retrieval was by heat mediation in a Tris/EDTA pH9 buffer. Samples were incubated with primary antibody (1/100 in TBS) for 18 hours at 20°C. A Alexa Fluor® 647-conjugated Goat anti-mouse IgG polyclonal (1/400) was used as the secondary antibody.

**Immunohistochemistry (Frozen sections) - Anti-Vimentin antibody [RV202] (ab8978)**

Image courtesy of an AbReview submitted by Dr Ruma Raha-Chowdhury

**IHC-Fr** image of Ed18 rat stained with **ab8978**. Fresh frozen sections were incubated in 10% normal donkey serum in 0.1% PBS- and 0.3% triton X100 for 1h to permeabilise the tissues and block non-specific protein-protein interactions. The sections were then incubated with the **ab8978** (1µg/ml) and ferroportin overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 donkey anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 568 (red) donkey anti-mouse at a 1/1000 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM. Vimentin expressed in the gut muscles.
Immunocytochemistry/Immunofluorescence - Anti-Vimentin antibody [RV202] (ab8978)
This image is courtesy of Dr. Ruma Raha-Chowdhury, Cambridge University, United Kingdom.

IHC-FoFr image of vimentin staining on rat injured cortical sections using ab8978 (1:500). The brain was perfusion fixed using 4% PFA and the sections were permeabilized using 0.1% TritonX in 0.1% PBS. The sections were then blocked using 10% donkey serum for 1 hour at 24°C. ab8978 was diluted 1:500 and incubated with sections for 24 hours using 4°C. The secondary antibody used was donkey polyclonal to rabbit IgG conjugated to Alexa Fluor 488.

Immunocytochemistry/Immunofluorescence - Anti-Vimentin antibody [RV202] (ab8978)

ab8978 vimentin staining of a tonsilar lymphoma. Note that the epithelium (at the left) is negative.

Immunohistochemistry (Frozen sections) - Anti-Vimentin antibody [RV202] (ab8978)

ab8978 staining Vimentin in bovine chromospheres by ICC/IF (immunocytochemistry/immunofluorescence). Cells were PFA fixed and permeabilized in 0.3% Triton X-100. The primary antibody (1/500) was incubated with the sample for 16 hours at 4°C. An Alexa Fluor® 568-conjugated goat anti-mouse IgG polyclonal (1/500) ab175473 was used as the secondary.
ab8978 vimentin immunofluorescent staining of cultured bovine lens epithelial cells

ab8978 staining vimentin in human pancreatic adenocarcinoma cells by immunocytochemistry/immunofluorescence. Cells were PFA fixed and permeabilized in 0.2% Triton X prior to blocking in 3% BSA for 30 minutes at 24°C. The primary antibody was diluted 1/200 and incubated with the sample for 16 hours at 21°C. Alexa fluor® 488 mouse polyclonal to mouse Ig, diluted 1/300 was used as the secondary antibody.

ab8978 staining Vimentin in human lung tissue section by Immunohistochemistry (Frozen sections). Tissue samples were fixed with formaldehyde and blocking with 5% commercially available blocking agent was performed at 37°C for 15 minutes. The sample was incubated with primary antibody (1/250) at 37°C for 1 hour. A HRP-conjugated Goat polyclonal to mouse IgG was used as secondary antibody at 1/1000 dilution.

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