

**Anti-Ribonuclease Inhibitor/RNH1 Antibody Picoband™ (monoclonal, 4F3)**  
Catalog # ABO14936

**Specification**

**Anti-Ribonuclease Inhibitor/RNH1 Antibody Picoband™ (monoclonal, 4F3) - Product Information**

Application	WB, IHC, IF, ICC, FC
Primary Accession	<a href="#">P13489</a>
Host	Mouse
Isotype	Mouse IgG2b
Reactivity	Human
Clonality	Monoclonal
Format	Lyophilized

**Description**

Anti-Ribonuclease Inhibitor/RNH1 Antibody Picoband™ (monoclonal, 4F3) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-Ribonuclease Inhibitor/RNH1 Antibody Picoband™ (monoclonal, 4F3) - Additional Information**

**Gene ID** 6050

**Other Names**

Ribonuclease inhibitor, Placental ribonuclease inhibitor, Placental RNase inhibitor, Ribonuclease/angiogenin inhibitor 1, RAI, RNH1, PRI, RNH

**Calculated MW**

50 kDa KDa

**Application Details**

Western blot, 0.1-0.5 µg/ml, Human<br> Immunohistochemistry (Paraffin-embedded Section), 0.5-1 µg/ml, Human<br> Immunocytochemistry/Immunofluorescence, 2 µg/ml, Human<br> Flow Cytometry, 1-3 µg/1x10<sup>6</sup> cells, Human<br>

**Subcellular Localization**

Cytoplasm.

**Contents**

Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg NaN<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence at the N-terminus of human RNH1, different from the related mouse sequence by five amino acids, and from the related rat sequence by four amino acids.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross-reactivity with other proteins.

**Storage**

Store at  $-20^{\circ}\text{C}$  for one year from date of receipt. After reconstitution, at  $4^{\circ}\text{C}$  for one month. It can also be aliquotted and stored frozen at  $-20^{\circ}\text{C}$  for six months. Avoid repeated freeze-thaw cycles.

**Anti-Ribonuclease Inhibitor/RNH1 Antibody Picoband™ (monoclonal, 4F3) - Protein Information**

**Name** RNH1 {ECO:0000303|PubMed:36935417, ECO:0000312|HGNC:HGNC:10074}

**Function**

Ribonuclease inhibitor which inhibits RNASE1, RNASE2 and angiogenin (ANG) (PubMed:<a href="http://www.uniprot.org/citations/12578357" target="\_blank">12578357</a>, PubMed:<a href="http://www.uniprot.org/citations/14515218" target="\_blank">14515218</a>, PubMed:<a href="http://www.uniprot.org/citations/3219362" target="\_blank">3219362</a>, PubMed:<a href="http://www.uniprot.org/citations/3243277" target="\_blank">3243277</a>, PubMed:<a href="http://www.uniprot.org/citations/3470787" target="\_blank">3470787</a>, PubMed:<a href="http://www.uniprot.org/citations/9050852" target="\_blank">9050852</a>). May play a role in redox homeostasis (PubMed:<a href="http://www.uniprot.org/citations/17292889" target="\_blank">17292889</a>). Required to inhibit the cytotoxic tRNA ribonuclease activity of ANG in the cytoplasm in absence of stress (PubMed:<a href="http://www.uniprot.org/citations/23843625" target="\_blank">23843625</a>, PubMed:<a href="http://www.uniprot.org/citations/32510170" target="\_blank">32510170</a>). Relocates to the nucleus in response to stress, relieving inhibition of ANG in the cytoplasm, and inhibiting the angiogenic activity of ANG in the nucleus (PubMed:<a href="http://www.uniprot.org/citations/23843625" target="\_blank">23843625</a>).

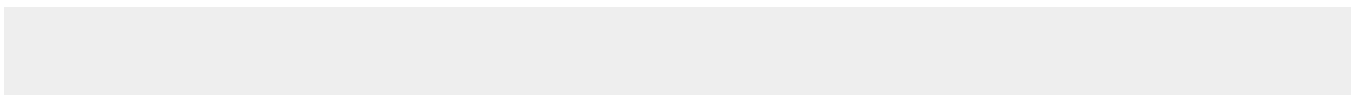
**Cellular Location**

Cytoplasm. Nucleus Note=Localizes in the cytoplasm in absence of stress; translocates to the nucleus in response to stress.

**Anti-Ribonuclease Inhibitor/RNH1 Antibody Picoband™ (monoclonal, 4F3) - 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](#)

**Anti-Ribonuclease Inhibitor/RNH1 Antibody Picoband™ (monoclonal, 4F3) - Images**

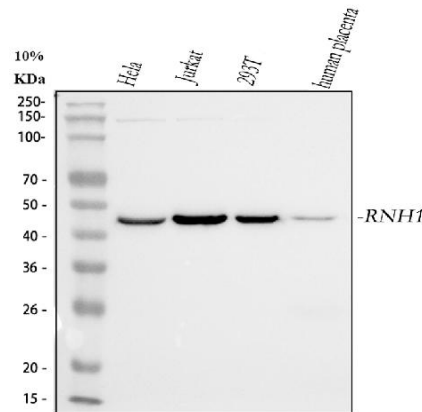


Figure 1. Western blot analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).

Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.

- Lane 1: human HeLa whole cell lysates,
- Lane 2: human Jurkat whole cell lysates,
- Lane 3: human 293T whole cell lysates,
- Lane 4: human placenta tissue lysates.

After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-Ribonuclease Inhibitor/RNH1 antigen affinity purified monoclonal antibody (Catalog # M04147) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for Ribonuclease Inhibitor/RNH1 at approximately 45 kDa. The expected band size for Ribonuclease Inhibitor/RNH1 is at 50 kDa.

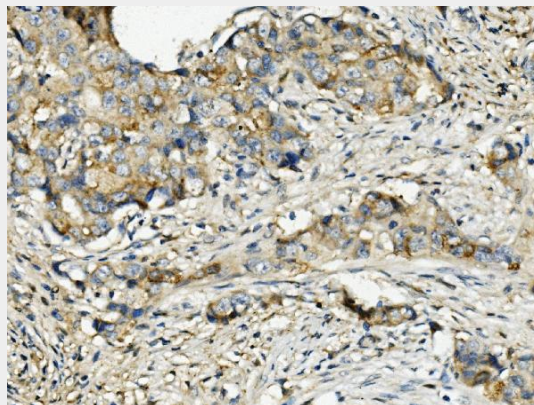


Figure 2. IHC analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).

Ribonuclease Inhibitor/RNH1 was detected in paraffin-embedded section of human mammary cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Ribonuclease Inhibitor/RNH1 Antibody (M04147) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

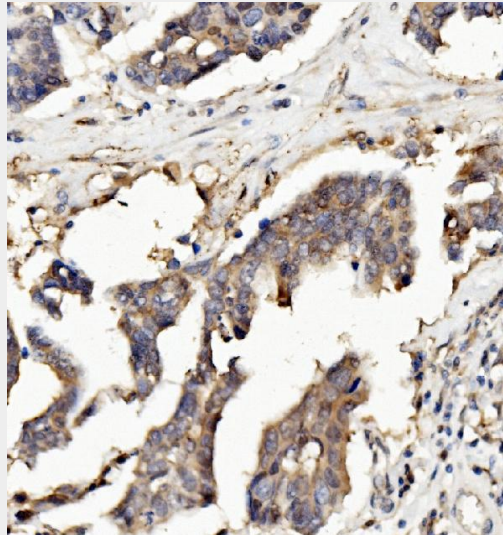


Figure 3. IHC analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).

Ribonuclease Inhibitor/RNH1 was detected in paraffin-embedded section of human ovarian cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1  $\mu$ g/ml mouse anti-Ribonuclease Inhibitor/RNH1 Antibody (M04147) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

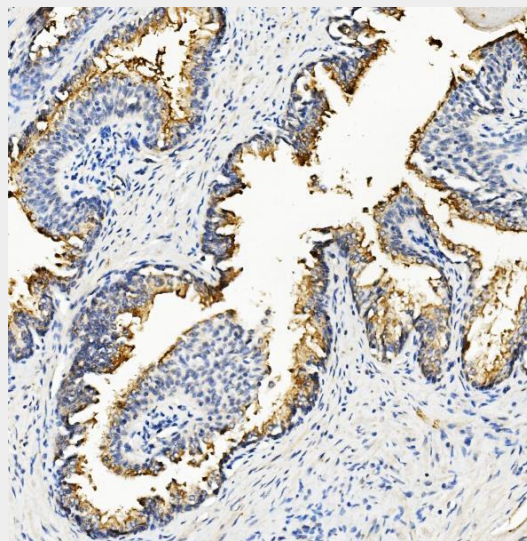


Figure 4. IHC analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).

Ribonuclease Inhibitor/RNH1 was detected in paraffin-embedded section of human prostatic cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1  $\mu$ g/ml mouse anti-Ribonuclease Inhibitor/RNH1 Antibody (M04147) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

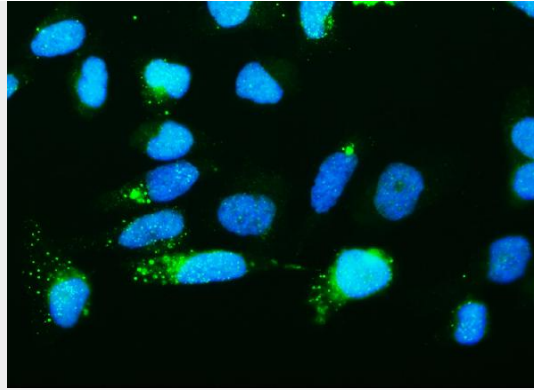


Figure 5. IF analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).

Ribonuclease Inhibitor/RNH1 was detected in immunocytochemical section of HeLa cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2 µg/mL mouse anti-Ribonuclease Inhibitor/RNH1 Antibody (M04147) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

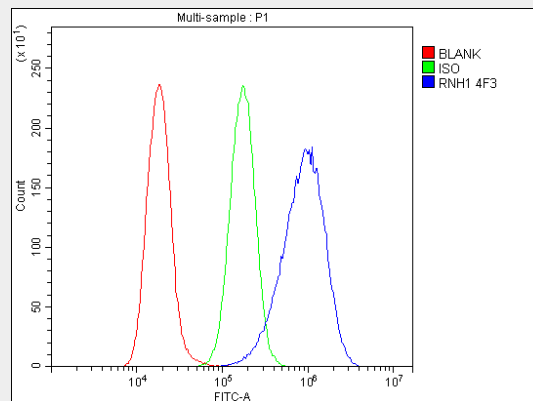


Figure 6. Flow Cytometry analysis of A549 cells using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).

Overlay histogram showing A549 cells stained with M04147 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Ribonuclease Inhibitor/RNH1 Antibody (M04147, 1 µg/1x10<sup>6</sup> cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10<sup>6</sup> cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10<sup>6</sup>) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

#### **Anti-Ribonuclease Inhibitor/RNH1 Antibody Picoband™ (monoclonal, 4F3) - Background**

Ribonuclease inhibitor is an enzyme that in humans is encoded by the RNH1 gene. Placental ribonuclease inhibitor (PRI) is a member of a family of proteinaceous cytoplasmic RNase inhibitors that occur in many tissues and bind to both intracellular and extracellular RNases. In addition to control of intracellular RNases, the inhibitor may have a role in the regulation of angiogenin. Ribonuclease inhibitor, of 50,000 Da, binds to ribonucleases and holds them in a latent form. Since neutral and alkaline ribonucleases probably play a critical role in the turnover of RNA in eukaryotic cells, RNH may be essential for control of mRNA turnover; the interaction of eukaryotic cells with ribonuclease may be reversible *in vivo*.