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

Catalog # ABO14936

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	P13489
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.

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	49973
Application Details	Western blot, 0.1-0.5 □g/ml, Human Immunohistochemistry (Paraffin-embedded Section), 0.5-1 □g/ml, Human Immunocytochemistry/Immunofluorescence, 2 □g/ml, Human Flow Cytometry, 1-3 □g/1x10^6 cells, Human
Subcellular Localization	Cytoplasm.
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na_2HPO_4, 0.05mg NaN_3.
Clone Names	Clone: 4F3
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˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.

Protein Information

Name	RNH1 {ECO:0000303|PubMed:36935417, ECO:0000312|HGNC:HGNC:10074}
Function	Ribonuclease inhibitor which inhibits RNASE1, RNASE2 and angiogenin (ANG) (PubMed:12578357, PubMed:14515218, PubMed:3219362, PubMed:3243277, PubMed:3470787, PubMed:9050852). May play a role in redox homeostasis (PubMed:17292889). Required to inhibit the cytotoxic tRNA ribonuclease activity of ANG in the cytoplasm in absence of stress (PubMed:23843625, PubMed:32510170). 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:23843625).
Cellular Location	Cytoplasm. Nucleus Note=Localizes in the cytoplasm in absence of stress; translocates to the nucleus in response to stress.

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.

Images

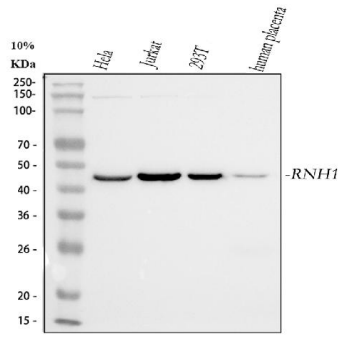


Figure 1. Western blot analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under 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.

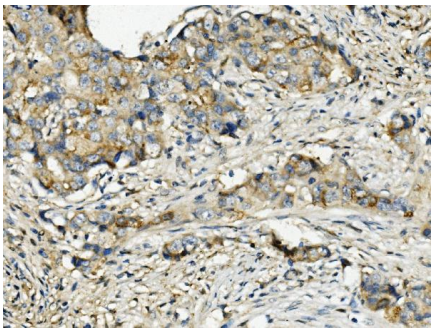


Figure 2. IHC analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).
Ribonuclease Inhibitor/RNH1 was detected in paraffin-embedded section of human mammary cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval 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 Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

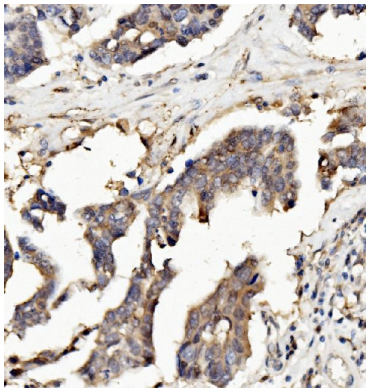


Figure 3. IHC analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).
Ribonuclease Inhibitor/RNH1 was detected in paraffin-embedded section of human ovarian cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 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 Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

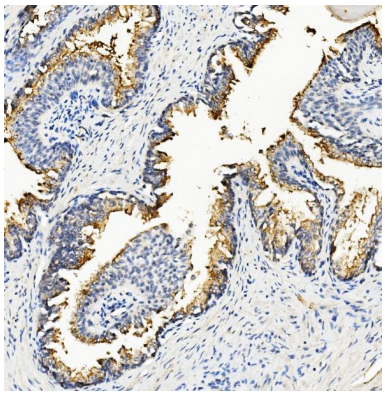
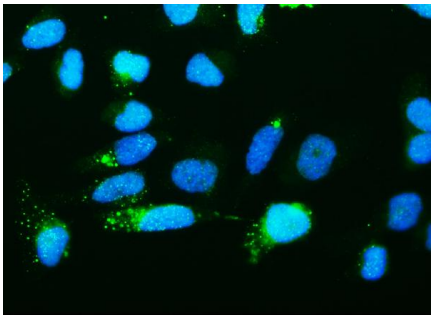


Figure 4. IHC analysis of Ribonuclease Inhibitor/RNH1 using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147).
Ribonuclease Inhibitor/RNH1 was detected in paraffin-embedded section of human prostatic cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 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 Strepavidin-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.

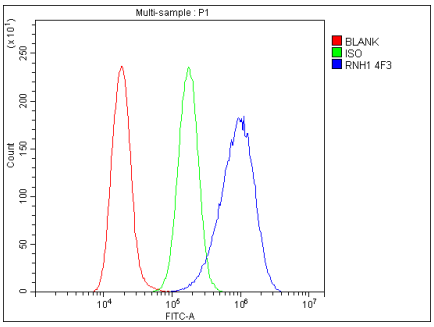


Figure 6. Flow Cytometry analysis of A549 cells using anti-Ribonuclease Inhibitor/RNH1 antibody (M04147). Overlay histogram showing A549 cells stained with M04147 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Ribonuclease Inhibitor/RNH1 Antibody (M04147,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

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.