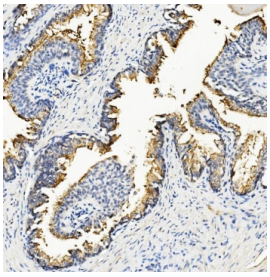
RNH1 Antibody 4F3 / Ribonuclease Inhibitor Monoclonal Antibody [clone 4F3] (RQ5935)

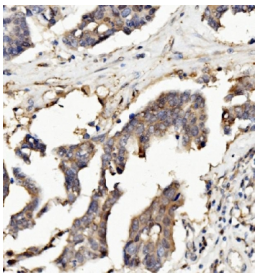
Catalog No.	Formulation	Size
RQ5935	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

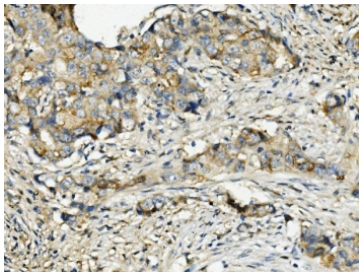
Species Reactivity	Human
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b
Clone Name	4F3
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P13489
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry: 1-2ug/ml Immunofluorescence: 2-4ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This RNH1 Antibody 4F3 / Ribonuclease Inhibitor Monoclonal Antibody is available for research use only.



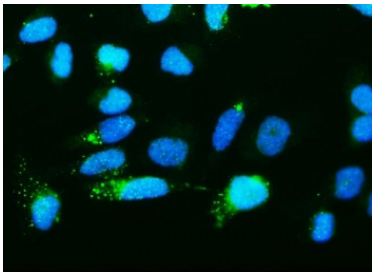
RNH1 Antibody 4F3 IHC Analysis of Human Prostate Cancer Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human prostate cancer tissue using Ribonuclease Inhibitor Monoclonal Antibody clone 4F3. RNH1 immunoreactivity is demonstrated in the examined tissue section. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8.0).



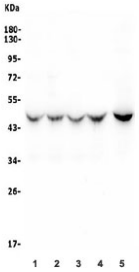
RNH1 Antibody 4F3 IHC Analysis of Human Ovarian Cancer Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human ovarian cancer tissue using Ribonuclease Inhibitor Monoclonal Antibody clone 4F3. RNH1 immunoreactivity is demonstrated in the examined tissue section. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8.0).



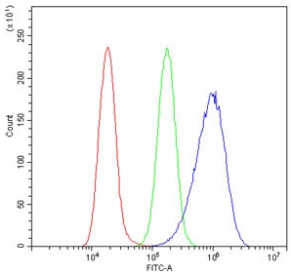
RNH1 Antibody 4F3 IHC Analysis of Human Breast Cancer Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human breast cancer tissue using Ribonuclease Inhibitor Monoclonal Antibody clone 4F3. RNH1 immunoreactivity is demonstrated in the examined tissue section. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8.0).



RNH1 Antibody 4F3 IF Analysis of Human HeLa Cells. Immunofluorescence analysis of formalin-fixed, paraffin-embedded human HeLa cells using Ribonuclease Inhibitor Monoclonal Antibody clone 4F3. RNH1-associated fluorescence is shown in green, with nuclei counterstained blue using DAPI. Heat-induced epitope retrieval was performed using citrate buffer (pH 6.0).



RNH1 Antibody 4F3 WB Analysis of Human HeLa, HEK293, Jurkat, A549 and U-87 MG Cells. Western blot analysis using Ribonuclease Inhibitor Monoclonal Antibody clone 4F3. Samples include human HeLa (lane 1), HEK293 (lane 2), Jurkat (lane 3), A549 (lane 4), and U-87 MG (lane 5) cell lysates. The expected molecular weight of RNH1 is approximately 50 kDa.



RNH1 Antibody 4F3 FACS Staining of Human A549 Cells. Flow cytometry analysis of human A549 cells using Ribonuclease Inhibitor Monoclonal Antibody clone 4F3 at 1 ug per million cells. The antibody-stained population is shown in blue, the isotype control in green, and unlabeled cells in red. Goat serum was used for blocking.

Description

RNH1 Antibody 4F3 / Ribonuclease Inhibitor Monoclonal Antibody targets ribonuclease inhibitor 1, a regulatory protein encoded by the RNH1 gene. Commonly called placental ribonuclease inhibitor or RNase inhibitor, RNH1 belongs to a family of leucine-rich repeat proteins that bind and inhibit members of the pancreatic-type ribonuclease superfamily. Its principal biological function involves regulating ribonuclease activity and protecting cellular RNA from uncontrolled enzymatic degradation.

RNH1 possesses a distinctive horseshoe-shaped structure formed by multiple leucine-rich repeats. These repeating elements create a curved molecular surface that supports exceptionally tight interactions with several ribonucleases. The

resulting complexes can exhibit extremely high binding affinities, allowing RNH1 to suppress ribonuclease catalytic activity and influence the availability of these enzymes for other biological functions.

One particularly important interaction involves angiogenin, a ribonuclease associated with vascular development, cellular stress responses, and RNA metabolism. RNH1 binds angiogenin and inhibits its ribonucleolytic activity, thereby regulating processes influenced by angiogenin-mediated RNA cleavage. Changes in the balance between free angiogenin and RNH1-bound angiogenin can affect cellular responses to physiological stress.

Angiogenin contributes to the production of specific transfer RNA-derived fragments under certain stress conditions. These RNA fragments have been associated with changes in protein synthesis and cellular survival responses. By controlling angiogenin activity, RNH1 participates in the regulation of these RNA-associated stress mechanisms.

Another notable feature of RNH1 is its high cysteine content. The protein is sensitive to oxidative conditions, and oxidation of critical cysteine residues can reduce its inhibitory activity. This property provides a connection between cellular redox balance and ribonuclease regulation, potentially allowing changes in oxidative conditions to influence RNA metabolism.

RNH1 has also been investigated in relation to angiogenesis, cellular proliferation, and cancer biology. Its interactions with ribonucleases may influence processes associated with tumor development and cellular adaptation, although the biological consequences depend on the particular cellular environment and regulatory mechanisms involved.

Studies using RNH1 Antibody 4F3 can contribute to the characterization of this ribonuclease regulatory protein. Understanding the molecular interactions of RNH1 provides insight into RNA stability, angiogenin regulation, oxidative stress responses, and the mechanisms that maintain intracellular RNA homeostasis.

RNH1 regulates ribonuclease activity and contributes to RNA stability, oxidative stress responses, and angiogenin-associated signaling. Researchers studying this protein can also explore our Ribonuclease Inhibitor Antibody page, which features complementary polyclonal antibody data, including knockout-validated western blot analysis and experimental staining across multiple sample types.

Application Notes

Optimal dilution of the RNH1 Antibody 4F3 / Ribonuclease Inhibitor Monoclonal Antibody should be determined by the researcher.

Immunogen

Amino acids SLDIQSLDIQCEELSDARWAELLPLLQQCQVVRLDD from the human protein were used as the immunogen for the RNH1 antibody.

Storage

After reconstitution, the RNH1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Ribonuclease inhibitor 1 antibody, Placental ribonuclease inhibitor antibody, Ribonuclease/angiogenin inhibitor 1 antibody, RNase inhibitor antibody, Ribonuclease inhibitor protein antibody, RNH antibody

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