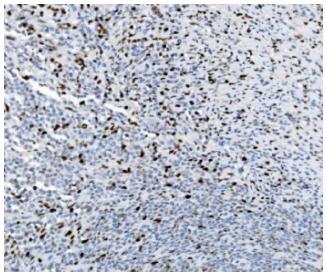
SAMHD1 Monoclonal Antibody 3B9 / SAMHD1 Mouse Antibody [clone 3B9] (RQ6377)

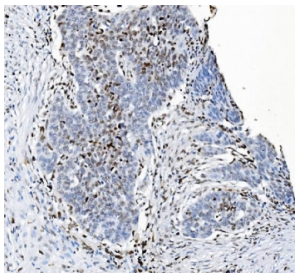
Catalog No.	Formulation	Size
RQ6377	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

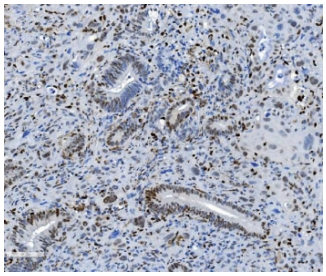
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1
Clone Name	3B9
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q9Y3Z3
Localization	Nuclear
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence (FFPE): 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This SAMHD1 Monoclonal Antibody 3B9 / SAMHD1 Mouse Antibody is available for research use only.



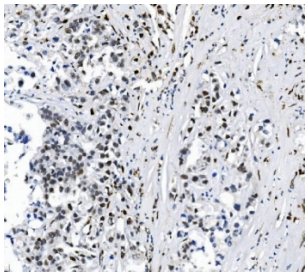
SAMHD1 Monoclonal Antibody 3B9 IHC Staining of Human Lymphoma Tissue. Immunohistochemical analysis of FFPE human lymphoma tissue using SAMHD1 Mouse Antibody clone 3B9. Brown DAB staining is visible in numerous cells throughout the tissue, with prominent nuclear staining in portions of the densely cellular regions. Hematoxylin provides blue nuclear counterstaining. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8) for 20 minutes.



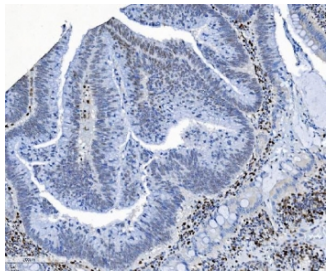
SAMHD1 Monoclonal Antibody 3B9 IHC Staining of Human Ovarian Serous Adenocarcinoma. Immunohistochemical analysis of FFPE human ovarian serous adenocarcinoma tissue using SAMHD1 Mouse Antibody clone 3B9. Brown DAB staining is observed in scattered tumor-associated cells, including cells surrounding epithelial structures. The staining is heterogeneous, with substantial areas showing predominantly blue hematoxylin counterstaining. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8) for 20 minutes.



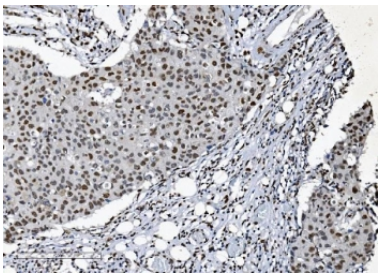
SAMHD1 Monoclonal Antibody 3B9 IHC Staining of Human Gallbladder Adenocarcinoma. Immunohistochemical analysis of FFPE human gallbladder adenocarcinoma tissue using SAMHD1 Mouse Antibody clone 3B9. Brown DAB staining is visible in numerous cells within the tumor-associated tissue, including cells surrounding glandular structures. Nuclear staining is apparent in portions of the section, with hematoxylin counterstaining. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8) for 20 minutes.



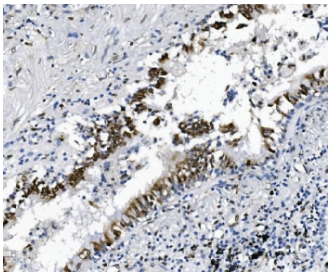
SAMHD1 Monoclonal Antibody 3B9 IHC Staining of Human Gastric Adenocarcinoma. Immunohistochemical analysis of FFPE human gastric adenocarcinoma tissue using SAMHD1 Mouse Antibody clone 3B9. Brown DAB staining is observed in scattered cells within the tumor tissue, including areas of nuclear staining. The staining distribution varies across the examined field, with hematoxylin counterstaining. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8) for 20 minutes.



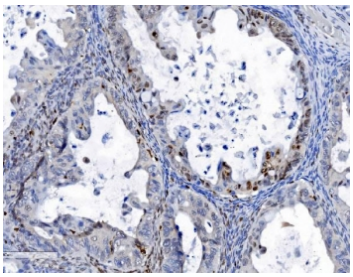
SAMHD1 Monoclonal Antibody 3B9 IHC Staining of Human Rectal Cancer Tissue. Immunohistochemical analysis of FFPE human rectal cancer tissue using SAMHD1 Mouse Antibody clone 3B9. The tissue displays predominantly blue hematoxylin counterstaining within the glandular epithelium, with limited brown DAB staining in scattered cells and surrounding tissue regions. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8) for 20 minutes.



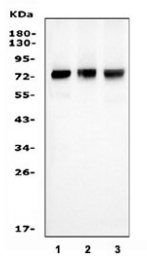
SAMHD1 Monoclonal Antibody 3B9 IHC Staining of Human Breast Cancer Tissue. Immunohistochemical analysis of FFPE human breast cancer tissue using SAMHD1 Mouse Antibody clone 3B9. Brown DAB staining is prominent in numerous tumor-associated cells, including nuclear regions, with heterogeneous distribution across the section. Hematoxylin provides blue nuclear counterstaining. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8) for 20 minutes.



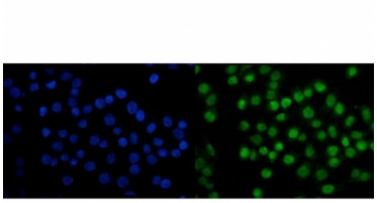
SAMHD1 Monoclonal Antibody 3B9 IHC Staining of Human Lung Cancer Tissue. Immunohistochemical analysis of FFPE human lung cancer tissue using SAMHD1 Mouse Antibody clone 3B9. Brown DAB staining is prominent in portions of the glandular tumor epithelium, with additional staining in scattered surrounding cells. The staining is heterogeneous across the examined field, with hematoxylin counterstaining. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8) for 20 minutes.



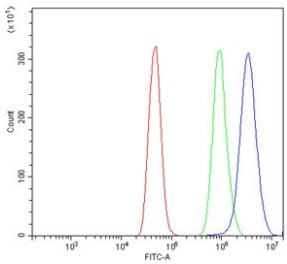
SAMHD1 Monoclonal Antibody 3B9 IHC Staining of Human Ovarian Cancer Tissue. Immunohistochemical analysis of FFPE human ovarian cancer tissue using SAMHD1 Mouse Antibody clone 3B9. Brown DAB staining is visible in portions of the glandular tumor epithelium and scattered cells within the surrounding tissue. Other epithelial regions show comparatively limited staining, with blue hematoxylin counterstaining. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8) for 20 minutes.



SAMHD1 Monoclonal Antibody 3B9 WB Analysis of Human HeLa, HepG2 and K562 Cells. Western blot analysis of human HeLa (lane 1), HepG2 (lane 2), and K562 (lane 3) cell lysates using SAMHD1 Mouse Antibody clone 3B9. A prominent band is detected near 72 kDa in all three samples, consistent with the predicted molecular weight of SAMHD1. The observed migration is consistent across the tested cell lines.



SAMHD1 Monoclonal Antibody 3B9 IF Staining of Human Caco-2 Cells. Immunofluorescence analysis of FFPE human Caco-2 cells using SAMHD1 Mouse Antibody clone 3B9. Green SAMHD1-associated fluorescence is concentrated predominantly in nuclear regions, consistent with the established nuclear localization of SAMHD1. Nuclei are counterstained with DAPI (blue). Heat-induced epitope retrieval was performed using citrate buffer (pH 6) for 20 minutes.



SAMHD1 Monoclonal Antibody 3B9 FACS Staining of Human A431 Cells. Flow cytometry analysis of human A431 cells using SAMHD1 Mouse Antibody clone 3B9 at 1 ug per million cells. The antibody-stained population (blue) shows a clear rightward fluorescence shift relative to the isotype control (green) and unstained cells (red), demonstrating antibody-associated staining consistent with SAMHD1 detection. Cells were blocked with goat serum before staining.

Description

SAMHD1 Monoclonal Antibody 3B9 / SAMHD1 Mouse Antibody targets SAM domain and HD domain-containing protein 1 (SAMHD1), an enzyme that regulates intracellular deoxynucleoside triphosphate (dNTP) concentrations and contributes to antiviral defense. SAMHD1 contains an N-terminal sterile alpha motif (SAM) domain and an HD catalytic domain responsible for its nucleotide triphosphohydrolase activity. Through regulation of nucleotide availability, SAMHD1 influences DNA metabolism, cellular proliferation, and the ability of certain viruses to establish productive infections.

SAMHD1 catalyzes the hydrolysis of dNTPs into deoxynucleosides and inorganic triphosphate. Its enzymatic activity requires nucleotide-dependent allosteric activation and formation of a catalytically active tetramer. By reducing intracellular dNTP concentrations, SAMHD1 can restrict reverse transcription by retroviruses, including HIV-1. This restriction mechanism is particularly important in nondividing immune cells, where limited nucleotide availability creates an unfavorable environment for viral DNA synthesis. Certain lentiviral accessory proteins counteract this defense by promoting SAMHD1 degradation.

SAMHD1 activity is influenced by post-translational modifications, including phosphorylation at threonine 592. This modification is associated with changes in antiviral restriction, although the relationship between phosphorylation, nucleotide hydrolysis, and other cellular functions remains an active area of investigation. SAMHD1 also participates in

processes associated with DNA replication, replication stress, and genome maintenance. These functions connect nucleotide metabolism with mechanisms that protect cells against genomic instability.

Pathogenic variants in SAMHD1 are associated with Aicardi-Goutieres syndrome, an inherited inflammatory disorder characterized by inappropriate activation of interferon-related pathways. Alterations affecting SAMHD1 have also been identified in certain hematologic malignancies. Its ability to regulate nucleotide metabolism is relevant to cancer research because SAMHD1 can influence cellular responses to selected nucleoside analog treatments. These findings highlight its biological importance beyond antiviral restriction.

SAMHD1 Monoclonal Antibody 3B9 supports investigations of SAMHD1 expression and its relationship to nucleotide homeostasis, immune regulation, and disease-associated cellular changes. Distinguishing total protein abundance from catalytic activity and phosphorylation-dependent regulation is important when interpreting SAMHD1 function. Continued investigation of these mechanisms may clarify how nucleotide metabolism contributes to antiviral defense, inflammatory signaling, and genome stability.

Application Notes

Optimal dilution of the SAMHD1 Monoclonal Antibody 3B9 / SAMHD1 Mouse Antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids E37-M626) was used as the immunogen for the SAMHD1 antibody.

Storage

After reconstitution, the SAMHD1 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

SAM domain and HD domain-containing protein 1 antibody, SAM and HD domain-containing protein 1 antibody, SAM domain and HD domain-containing deoxynucleoside triphosphate triphosphohydrolase 1 antibody, Deoxynucleoside triphosphate triphosphohydrolase SAMHD1 antibody, Monocyte protein 5 antibody

Copyright © NSJ Bioreagents. All rights reserved.