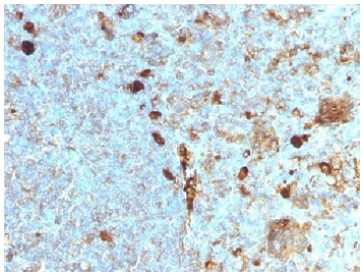
Alpha 1 Antitrypsin Antibody / Hepatocyte Marker [clone AAT/1378] (V3221)

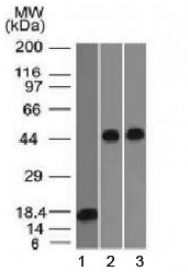
Catalog No.	Formulation	Size
V3221-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3221-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3221SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

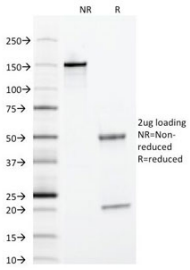
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	AAT/1378
Purity	Protein G affinity
UniProt	P01009
Localization	Cytoplasmic
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 0.5-1ug/ml for 30 min at RT
Limitations	This Alpha 1 Antitrypsin antibody is available for research use only.



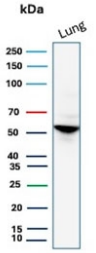
Immunohistochemistry analysis of Alpha 1 Antitrypsin / SERPINA1 antibody in human tonsil. FFPE human tonsil tissue was stained with Alpha 1 Antitrypsin / SERPINA1 antibody (clone AAT/1378). HRP-DAB brown chromogenic signal is observed in scattered cells within the lymphoid tissue, showing predominantly cytoplasmic staining consistent with the secreted serine protease inhibitor localization of A1AT. The majority of lymphocytes display minimal background staining, while positive cells exhibit granular cytoplasmic brown signal. Nuclei are counterstained blue. Heat-induced epitope retrieval was performed by steaming sections in pH 6.0, 10 mM citrate buffer for 10-20 minutes prior to antibody incubation.



Western blot testing of 1) a partial recombinant protein, 2) human Jurkat and 3) human A549 lysate with Alpha 1 Antitrypsin antibody (clone AAT/1378). Expected molecular weight: ~47 kDa (unmodified), 52 kDa (glycosylated).



SDS-PAGE Analysis of Purified, BSA-Free Alpha 1 Antitrypsin Antibody (clone AAT/1378). Confirmation of Integrity and Purity of the Antibody.



Western blot testing of human lung tissue lysate with Alpha 1 Antitrypsin antibody. Expected molecular weight: 47-52 kDa depending on the level of glycosylation.

Description

Alpha 1 Antitrypsin antibody, also referred to as a Hepatocyte Marker antibody, recognizes a secreted serine protease inhibitor encoded by the SERPINA1 gene on chromosome 14q32.13. Alpha 1 Antitrypsin, commonly abbreviated A1AT and also known as alpha-1 proteinase inhibitor, is a member of the clade A serpin family. It is synthesized primarily by hepatocytes and secreted into the bloodstream, where it functions as a major inhibitor of neutrophil elastase and other proteolytic enzymes. Within tissue sections, Alpha 1 Antitrypsin is typically localized to the cytoplasm of hepatocytes, making it a widely used marker of hepatocellular differentiation.

As a Hepatocyte Marker, Alpha 1 Antitrypsin antibody is frequently used in liver pathology research to identify hepatocytes in normal and neoplastic tissue. Strong cytoplasmic staining is characteristic of hepatocellular lineage, and expression can assist in distinguishing hepatocellular tumors from metastatic lesions in diagnostic research settings. Beyond the liver, A1AT may be detected in macrophages and certain epithelial cells under inflammatory conditions.

Functionally, Alpha 1 Antitrypsin protects tissues from protease-mediated injury by forming irreversible complexes with target enzymes. In the lung, it plays a critical role in preserving alveolar structure by neutralizing neutrophil elastase. Structurally, the protein contains a reactive center loop that enables protease inhibition and is glycosylated to support stability and secretion. Mutations in SERPINA1 can result in misfolded protein accumulation within hepatocytes, leading to intracellular inclusions and reduced circulating levels.

Deficiency or dysfunctional variants of Alpha 1 Antitrypsin are associated with emphysema, chronic obstructive pulmonary disease, and liver diseases including hepatitis and cirrhosis. Because of its strong hepatocyte-specific cytoplasmic expression pattern, Alpha 1 Antitrypsin antibody serves as a reliable Hepatocyte Marker in studies of liver development, regeneration, and tumor biology. Clone AAT/1378 recognizes Alpha 1 Antitrypsin and is suitable for detecting A1AT expression in relevant research applications.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the Alpha 1 Antitrypsin antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A human partial recombinant protein was used as the immunogen for this Alpha 1 Antitrypsin antibody.

Storage

Store the Alpha 1 Antitrypsin antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).