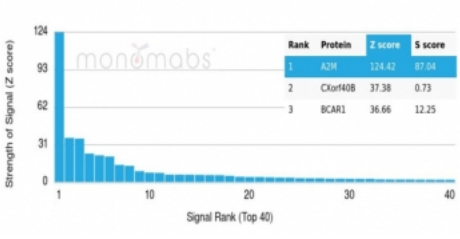
Alpha-2M Antibody A2M/6556 / Pan-Proteinase Inhibitor Antibody [clone A2M/6556] (V4239)

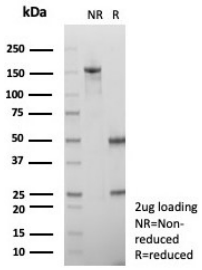
Catalog No.	Formulation	Size
V4239-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4239-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4239SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

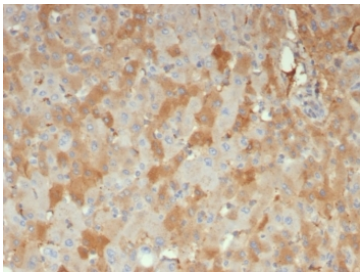
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	A2M/6556
Purity	Protein A/G affinity
UniProt	P01023
Localization	Secreted in plasma
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 minutes at RT
Limitations	This Alpha-2M Antibody A2M/6556 / Pan-Proteinase Inhibitor Antibody is available for research use only.



Alpha-2M Antibody Protein Microarray Validation. Protein microarray analysis of Alpha-2M Antibody A2M/6556 / Pan-Proteinase Inhibitor Antibody using a HuProt array containing more than 19,000 full-length human proteins. A2M produces the dominant signal with a Z-score of approximately 34.9 and is clearly separated from the next-highest signal, resulting in an S-score of approximately 27.7. The Z-score represents signal strength relative to the array mean, while the S-score represents separation of the intended target from the next-highest signal. The strong target separation supports the specificity of this Alpha-2M Antibody.



Alpha-2M Antibody A2M/6556 Purity Analysis by SDS-PAGE. Electrophoretic analysis of purified, BSA-free Alpha-2M Antibody A2M/6556 / Pan-Proteinase Inhibitor Antibody with 2 ug loaded under non-reducing (NR) and reducing (R) conditions. The non-reduced sample shows predominantly intact antibody at approximately 150 kDa, while the reduced sample shows major bands at approximately 50 and 25 kDa corresponding to antibody heavy and light chains, respectively.



Alpha-2M Antibody in Human Hepatocellular Carcinoma IHC. Immunohistochemistry testing of Alpha-2M Antibody A2M/6556 / Pan-Proteinase Inhibitor Antibody in FFPE human hepatocellular carcinoma tissue. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 9, 10 mM Tris with 1 mM EDTA for 20 min followed by cooling prior to staining. Widespread granular cytoplasmic immunoreactivity is observed throughout the tumor cells.

Description

Alpha-2M Antibody A2M/6556 / Pan-Proteinase Inhibitor Antibody recognizes A2M, a large secreted glycoprotein commonly known as alpha-2-macroglobulin or Alpha-2M. A2M circulates in plasma as a homotetramer composed of four approximately 180 kDa subunits and functions as a broad-spectrum inhibitor of extracellular proteases. Unlike conventional inhibitors that interact directly with a specific protease active site, A2M can capture proteases belonging to multiple catalytic classes, giving it an important role in controlling extracellular proteolytic activity.

A2M contains a protease-sensitive bait region that is central to its unusual inhibitory mechanism. Proteolytic cleavage within this region triggers a major conformational change that physically traps the interacting protease and limits its access to larger protein substrates. The resulting activated A2M complex can then be recognized by clearance receptors, including LRP1, facilitating removal of captured proteases from extracellular environments. This molecular-trap mechanism led to Alpha-2M being characterized as a pan-proteinase inhibitor.

In addition to regulating proteases, A2M can bind and transport cytokines, growth factors and other extracellular molecules. Interactions with transforming growth factor beta, IL-6 and other signaling molecules have connected A2M with research into inflammation, tissue remodeling and extracellular signaling. A2M has also been investigated in neurological biology, including mechanisms associated with beta-amyloid clearance, as well as liver biology and disease processes involving altered proteolytic activity. These diverse interactions make Alpha-2M relevant to studies of extracellular homeostasis, protease biology and inflammatory regulation.

Clone A2M/6556 is a mouse monoclonal antibody generated against a recombinant fragment corresponding to approximately amino acids 604-748 of human A2M and purified by Protein A/G affinity chromatography. The antibody recognizes human A2M and has been evaluated using tissue-based staining and a HuProt protein microarray containing more than 19,000 full-length human proteins. NSJ Bioreagents provides this Alpha-2M Antibody for research into A2M biology, protease regulation and extracellular protein homeostasis. A Pan-Proteinase Inhibitor Antibody can support investigation of mechanisms controlling extracellular proteolytic activity.

For additional information on A2M biology and a protein microarray-validated reagent with strong tissue-based validation, visit our Alpha-2-Macroglobulin Antibody / A2M Protease Inhibitor Antibody page.

Application Notes

Optimal dilution of the Alpha-2M Antibody A2M/6556 / Pan-Proteinase Inhibitor Antibody should be determined by the researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 604-748) from the human protein was used as the immunogen for the Alpha-2M antibody.

Storage

Aliquot the Alpha-2M antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Alpha-2M antibody, A2M antibody, alpha-2-macroglobulin antibody, alpha-2-M antibody, pan-proteinase inhibitor antibody

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