

AAT (9): sc-130299

BACKGROUND

Cumulative damage to lung tissue by Neutrophil Elastase is responsible for the development of pulmonary emphysema, an irreversible lung disease characterized by loss of lung elasticity. α 1-antitrypsin (AAT), a 394 amino acid hepatic acute phase protein, predominantly inhibits Neutrophil Elastase. AAT is highly expressed in liver and in cultured hepatoma cells and, to a lesser extent, in macrophages. AAT is a highly polymorphic glycosylated serum protein with characteristic isoelectric-focusing patterns for most variants. The gene encoding AAT maps to a region of human chromosome 14 that includes a related serine protease inhibitor (serpin) gene which encodes corticosteroid-binding globulin. Oxidation of the methionine 358 residue in the active center of AAT results in a dramatic decrease in inhibitory activity towards elastase. AAT also has a moderate affinity for plasmin and Thrombin. AAT deficiency is associated with a 20-30 fold increased risk of precocious pulmonary emphysema.

REFERENCES

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- Churg, A., et al. 2007. α 1-antitrypsin suppresses TNF α and MMP-12 production by cigarette smoke-stimulated macrophages. *Am. J. Respir. Cell Mol. Biol.* 37: 144-151.
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CHROMOSOMAL LOCATION

Genetic locus: SERPINA1 (human) mapping to 14q32.13.

SOURCE

AAT (9) is a mouse monoclonal antibody raised against recombinant AAT of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AAT (9) is recommended for detection of AAT of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AAT siRNA (h): sc-40945, AAT shRNA Plasmid (h): sc-40945-SH and AAT shRNA (h) Lentiviral Particles: sc-40945-V.

Molecular Weight of luminal AAT: 51 kDa.

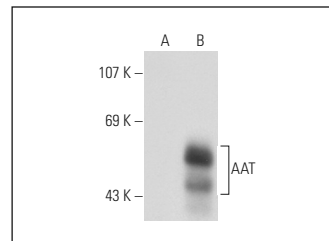
Molecular Weight of mature AAT: 55 kDa.

Positive Controls: AAT (h): 293 Lysate: sc-112989, Hep G2 cell lysate: sc-2227 or human liver extract: sc-363766.

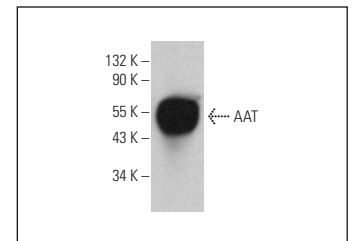
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



AAT (9): sc-130299. Western blot analysis of AAT expression in non-transfected: sc-110760 (A) and human AAT transfected: sc-112989 (B) 293 whole cell lysates.



AAT (9): sc-130299. Western blot analysis of AAT expression in human liver tissue extract.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.