

ATIII (H-7): sc-271987

BACKGROUND

The serine proteinase inhibitors (serpins) compose a superfamily of proteins with a diverse set of functions, including the control of blood coagulation, complement activation, programmed cell death and development. Serpins are secreted glycoproteins that contain a stretch of peptide that mimics a true substrate for a corresponding serine protease. Antithrombin III (ATIII), an extracellular plasma protein, is a crucial serine protease inhibitor that regulates the coagulation cascade in blood. The inhibitory activity of ATIII is amplified in the presence of heparin. ATIII inhibits Thrombin and Factors IX A, X A and XI A. Defects in the gene SERPINC1, which encodes for ATIII, can cause ATIII deficiency, an autosomal dominant disease, which is a risk factor for hereditary thrombophilia.

REFERENCES

1. Mackie, M., et al. 1978. Familial thrombosis: inherited deficiency of antithrombin III. *Br. Med. J.* 21: 136-138.
2. Scully, M.F., et al. 1981. Hereditary antithrombin III deficiency in an English family. *Br. J. Haematol.* 47: 235-240.
3. Winter, J.H., et al. 1981. Transfusion studies in patients with familial antithrombin III (ATIII) deficiency: half-disappearance time of infused ATIII and influence of such infusion on platelet life-span. *Br. J. Haematol.* 49: 449-453.
4. Okajima, K., et al. 1995. Antithrombin III Kumamoto II; a single mutation at Arg393-His increased the affinity of ATIII for heparin. *Am. J. Hematol.* 48: 12-18.

CHROMOSOMAL LOCATION

Genetic locus: SERPINC1 (human) mapping to 1q25.1; Serpinc1 (mouse) mapping to 1 H2.1.

SOURCE

ATIII (H-7) is a mouse monoclonal antibody raised against amino acids 331-400 mapping near the C-terminus of ATIII of human origin.

PRODUCT

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

ATIII (H-7) is available conjugated to agarose (sc-271987 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271987 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271987 PE), fluorescein (sc-271987 FITC), Alexa Fluor[®] 488 (sc-271987 AF488), Alexa Fluor[®] 546 (sc-271987 AF546), Alexa Fluor[®] 594 (sc-271987 AF594) or Alexa Fluor[®] 647 (sc-271987 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271987 AF680) or Alexa Fluor[®] 790 (sc-271987 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

ATIII (H-7) is recommended for detection of ATIII of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ATIII siRNA (h): sc-44839, ATIII siRNA (m): sc-44840, ATIII shRNA Plasmid (h): sc-44839-SH, ATIII shRNA Plasmid (m): sc-44840-SH, ATIII shRNA (h) Lentiviral Particles: sc-44839-V and ATIII shRNA (m) Lentiviral Particles: sc-44840-V.

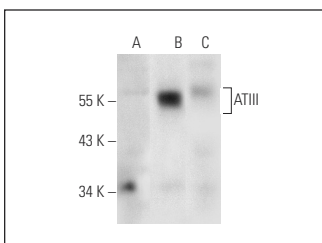
Molecular Weight of ATIII: 55 kDa.

Positive Controls: ATIII (m): 293T Lysate: sc-118611, Hep G2 cell lysate: sc-2227 or human plasma extract: sc-364374.

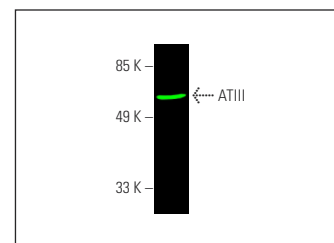
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



ATIII (H-7): sc-271987. Western blot analysis of ATIII expression in non-transfected 293T: sc-117752 (A), mouse ATIII transfected 293T: sc-118611 (B) and Hep G2 (C) whole cell lysates.



ATIII (H-7): sc-271987. Near-infrared western blot analysis of ATIII in human plasma. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Xu, S., et al. 2018. BMSCs ameliorate septic coagulopathy by suppressing inflammation in cecal ligation and puncture-induced sepsis. *J. Cell Sci.* 131: jcs211151.
2. Hu, P.A., et al. 2022. New mechanisms of bromelain in alleviating non-alcoholic fatty liver disease-induced deregulation of blood coagulation. *Nutrients* 14: 2329.

STORAGE

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