SANTA CRUZ BIOTECHNOLOGY, INC.

ATIII (A-6): sc-393867

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 IXa, Xa and XIa. 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 anti-thrombin III. Br. Med. J. 21: 136-138.
2. Scully, M.F., et al. 1981. Hereditary anti-thrombin 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.
5. Bayston, T.A., et al. 1999. Familial overexpression of β AT caused by an Asn 135-Thr substitution. Blood 93: 4242-4247.
6. Yeung, P.K. 2000. Transgenic ATIII (Genzyme). Drugs 3: 669-673.
7. Niiya, K., et al. 2001. Two novel gene mutations in type I AT deficiency. Int. J. Hematol. 74: 469-472.
8. Cassar, K., et al. 2005. Clopidogrel has no effect on D-dimer and Thrombin-ATIII levels in patients with peripheral arterial disease undergoing peripheral percutaneous transluminal angioplasty. J. Vasc. Surg. 42: 252-258.

CHROMOSOMAL LOCATION

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

SOURCE

ATIII (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 364-395 near the C-terminus of ATIII of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393867 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ATIII (A-6) is recommended for detection of ATIII of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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.

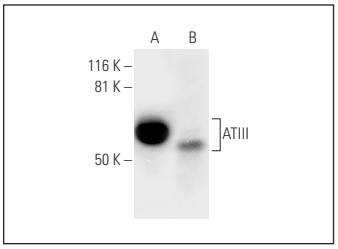
Molecular Weight of ATIII: 55 kDa.

Positive Controls: human plasma extract: sc-364374 or human liver extract: sc-363766.

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 (A-6): sc-393867. Western blot analysis of ATIII in human plasma (**A**) and human liver tissue extract (**B**).

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.