

Active Native Mouse Antithrombin III

Cat. No. Serpinc1-298M Lot. No. (See product label)

SPECIFICATION

Species Mouse

Source Plasma

Description

Antithrombin III (ATIII) is a single chain glycoprotein with a molecular weight of 58,000. It is a member of the serpin (serine protease inhibitor) super family and is considered to be the most important inhibitor in the coagulation cascade. ATIII inhibits a wide spectrum of serine proteases including thrombin, factors IXa, Xa and XIa, kallikrein, plasmin, urokinase, C1-esterase, and trypsin. The mechanism of inhibition involves the formation of a stable 1:1 complex between the active site of the protease and the scissile bond (Arg 385-Ser 386) of ATIII. The active site serine of thrombin has been shown to form a covalent intermediate with the P1 amino acid (Arg 385) of ATIII. The rate of inhibition of serine proteases by ATIII is increased to varying degrees by heparin. In the case of being a thrombin inhibitor or factor Xa inhibitor, the interaction with ATIII is enhanced 3 orders of magnitude in the presence of heparin. The interaction between ATIII and heparin involves a unique sequence of sulfated and non-sulfated monosaccharide units on heparin, and critical lysine residues on ATIII. The binding of ATIII to heparinoid structures on vascular endothelium has been demonstrated and shown to enhance the inhibition of factors IXa, Xa, and thrombin.

Form 50% (vol/vol) glycerol/H₂O

Bio-activity Thrombin inhibition

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Purity	>95% by SDS-PAGE. NOT tissue/cell culture grade. Not tested for endotoxin.
Characteristic	Extinction coefficient:6.2, Plasma concentration:150 µg/ml, Isoelectric point: 4.9-5.3, Percent carbohydrate:0.09
Storage	-20°C

GENE INFORMATION

Gene Name	Serpinc1 serine (or cysteine) peptidase inhibitor, clade C (antithrombin), member 1 [<i>Mus musculus</i>]
Official Symbol	Serpinc1
Synonyms	At3; At-3; ATIII; AI114908; antithrombin-III; serpin C1; antithrombin; anti-thrombin 3; serpin peptidase inhibitor, clade C, member 1; serine (or cysteine) proteinase inhibitor, clade C (antithrombin), member 1
Gene ID	11905
mRNA Refseq	NM_080844
Protein Refseq	NP_543120
UniProt ID	P32261
Chromosome Location	1 H2.1; 1 69.75 cM
Pathway	Common Pathway, organism-specific biosystem; Complement and Coagulation Cascades, organism-specific biosystem; Formation of Fibrin Clot (Clotting Cascade),

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organism-specific biosystem

Function

heparin binding; protease binding; serine-type endopeptidase inhibitor activity

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