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## Product Information

### Monoclonal Anti-Human Antithrombin III

#### Clone BL-AT III/3

Mouse Ascites Fluid

Product Number **A 5816**

#### Product Description

Monoclonal Anti-Human Antithrombin III (mouse IgG1 isotype) is derived from the BL-AT III/3 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice using a human antithrombin III preparation as the immunogen. The isotype is determined using the Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-Human Antithrombin III reacts specifically with antithrombin III by ELISA, dot-blot, and immunoblotting techniques. The antibody recognizes both the purified and the antithrombin III present in human plasma. In immunoblotting of denatured-reduced preparations, the antibody stains an approximate 52.6 kDa band using a purified antithrombin III preparation and at approximate 44-46.4 kDa band using plasma.

Antithrombin III (AT III, also called Antithrombin, Antifactor Xa, Heparin Co-factor)<sup>1</sup> is a single chain  $\alpha_2$ -globulin. It is the main physiological inhibitor of the activated serine proteases of the clotting system (Factors XIIa, XIa, Xa, IXa, VIIa, IIa), and also of plasmin, kallikrein, and C1 esterase. By formation of the covalently-linked complexes, this plasma protein, in cooperation with heparin, regulates the coagulation processes, limiting them to proceeding only in the vicinity of the site of tissue damage. Individuals who have an excess of AT III may have a bleeding tendency, while an absence of AT III may lead to recurrent thromboses. AT III activity may be lowered due to congenital deficiency or the synthesis of functionally defective molecules. It is also lowered to variable degrees under various pathological conditions such as liver damage, exudative enteropathy, nephropathy, plasmapheresis, increased consumption during disseminated intravascular coagulation,

septicemic shock, after surgery, and as a result of extensive loss of blood. AT III levels are also affected in cases of medication with some drugs such as L-asparaginase, diethylstilbestrol, heparin, and the "morning after pill" estrogen, all of which can induce AT III deficiency. Antithrombin assays are based on immunologic, enzymatic, or clotting properties.

Monoclonal Anti-Human Antithrombin III may be used for the localization of antithrombin using ELISA, dot-blot, and immunoblotting.

#### Reagent

Monoclonal Anti-Human Antithrombin III is provided as ascites fluid with 0.1% sodium azide as a preservative.

#### Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

#### Storage/Stability

For continuous use, store at 2-8 °C. For extended storage, the solution may be frozen in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

#### Product Profile

The working dilution (1:200) was determined by indirect immunoblotting using a human antithrombin III preparation.

In order to obtain best results in different techniques or preparations, it is recommended that each individual user determine their optimal working dilutions by titration assay.

## References

1. Abildgaard, U., "Antithrombin and Related Inhibitors of Coagulation", in: Recent Advances in Blood Coagulation, No. 3, Poller, L. (ed.), Churchill Livingstone, Edinburgh (1981).
2. Knoller, S., and Savion, N., Eur. J. Biochem., **180**, 319 (1989).

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