

CONTROL OF THROMBIN GENERATION BY ANTITHROMBIN

7 CASE STUDIES<sup>1</sup>

TEST	REF RANGE	Access #	Access #	Access #	Access #	Access #
Fragment 1+2	80 - 315	06-9674	07-144	07-367	07-245	06-8774
		514	628	1053	192	190
T/AT (Thrombin/AT)	1.0 - 4.1	30.5	32.1	3.7	3.7	0.6
		Normal See # 1	Normal See # 1	Abnormal See # 2	NORMAL	Abnormal See # 3

EXPLANATIONS:

Thrombin (Ila) is generated in response to some activation of coagulation. AntiThrombin (AT) is one of the normal proteins that controls thrombin generation. AntiThrombin is activated on the endothelial cell (EC) surfaces in the capillaries by HEPARANS that stick out of the EC cell membranes. Heparan/AT or Heparin/AT as sq or IV Heparin, is the active compound that can bind to Thrombin, forming T/ATs. T/ATs are cleared from the blood in the liver and is the normal process of controlling Thrombin generation.

These examples show different reactions to thrombin generation. The middle patient is a NORMAL patient with both F1+2 & T/AT in the reference range.

- 1 When Thrombin is generated and the microvasculature is clean, heparans activate AT and the T/ATs increase, shutting down Thrombin as in the first two examples. The body is capable of generating T/AT complexes in excess of 60.
- 2 Example 07-367 shows greatly increased Ila generation (F1+2), but normal T/ATs, meaning, there is already a moderate amount of fibrin buildup in the capillaries, preventing AT from being activated by heparans and then controlling the Ila generation. 06-5983 is another example of the same process, even though the Ila generation is only moderate (F1+2 value).
- 3 The last two examples indicate that even with no new Ila generation (normal F1+2), there is moderate to major fibrin deposition due to the very low T/AT values. This may be seen in patients with long standing inflammatory illnesses.

**Fragment 1+2 and T/ATs are part of the ISAC Panel offered by ESOTERIX / HEMEX Labs.**

<sup>1</sup>Dr. Alexander Duncan, Emory University Medical Center, Atlanta, GA Reprinted with permission: Esotex Laboratories, Inc © ACC, Inc, 2009