Ordering Information

Cat. N°	Product
HE-T2T	Thrombodynamics Analyzer System T2-T for Fibrin & Thrombin Registration
HE-T2F	Thrombodynamics Analyzer System T2-F for Fibrin Registration only
HE-TDX-10	Reagent kit for 10 fibrin measurements
HE-PLS-10	Reagent kit for 10 fibrin and thrombin generation

Literature

1. **Hemophilia** - Prediction of Bleeding Tendency in Hemophilia A and B Using Thrombodynamics Assay Claude Negrier et al., ISTH 2015.

2. **Cancer** - Thromboelastography, thrombin generation test and thrombodynamics reveal hypercoagulability in patients with multiple myeloma. Anna N. Balandina et. al, Leukemia & Lymphoma, ISSN: 1042-8194 (Print) 1029-2403 (Online) Journal homepage: http://www.tandfonline.com/loi/ilal20

3. **Hypercoagulability** - In search of a sensitive and reliable tool to assess hypercoagulability. Lorenzo Alberio et al., poster 1183 ISTH 2017

4. **Sepsis** - Predicting prothrombotic tendencies in sepsis using spatial clot growth dynamics. Fazoil I. Ataullakhanova et al., Blood Coagulation and Fibrinolysis 2012, 23:498–507

5. **Risk Patients** - Effect of Rivaroxaban on thrombin generation in vivo. A study in obese patients. Lorenzo Alberio et al., Int J Lab Hem. 2017; 1–4.

6. **Drug Efficacy** - The control of heparin treatment with global hemostasis assays: a sensitivity analysis: CA39 . Fazoil I. Ataullakhanova, Journal of Thrombosis and Haemostasis. 14():25, May 2016

7. **Liver Cirrhosis** – Impact of thrombomodulin on spatial clot growth and fibrin polymerization in cirrhotic patients. Alessandro Casini et al, Poster 841 ISTH 2017

8. **In vitro Fertilisation** – Enhanced coagulation decreases probability of positive outcome during in vitro fertilization. Fazoil I. Ataullakhanova, Poster 1170 ISTH 2017

More info

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Thrombodynamics

Real-time vizualization of clot growth

Spatial dynamics of Fibrin Clot Formation , Thrombin Generation & Fibrinolysis

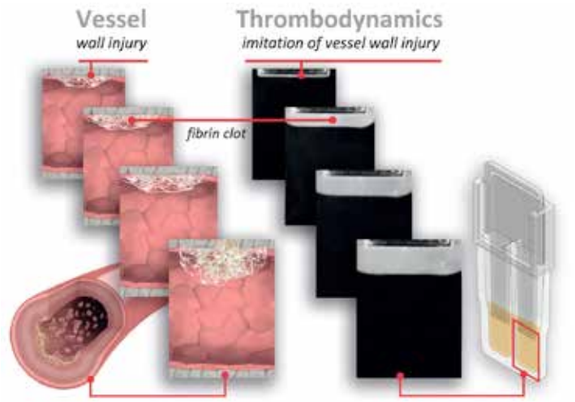
- Global haemostasis Assay
- Easy to understand and interpret
- Highly sensitive to hypercoagulation states, identifying patients with high thrombotic risk.
- Allows monitoring of efficacy & safety of haemostasis treatments

[Thrombodynamics-4D]=[Thrombodynamics+Thrombin Generation]

Fibrin Clot Formation & Thrombin Generation in Time and Space

Thrombodynamics-4D allows monitoring of spatial dynamics of thrombin generation using an AMC-based fluorogenic substrate simultaneously with registration of spatial fibrin clot growth from the TF-bearing surface:

- Reconstruction of blood vessel wall damage in vitro
- Physiological activation of coagulation
- Real-time observation of fibrin clot propagation and thrombin generation



Fibrin Clot Formation

Thrombodynamics provides information about the spatial separation of activation and propagation phases of the coagulation system.
Coagulation is initiated by a special surface with immobilzed Tissue Factor (TF) followed by a propagation phase that includes the reactions of the intrinsic pathway.
Finally, the clot growth is restricted in space by the haemostasis' inhibitory systems.

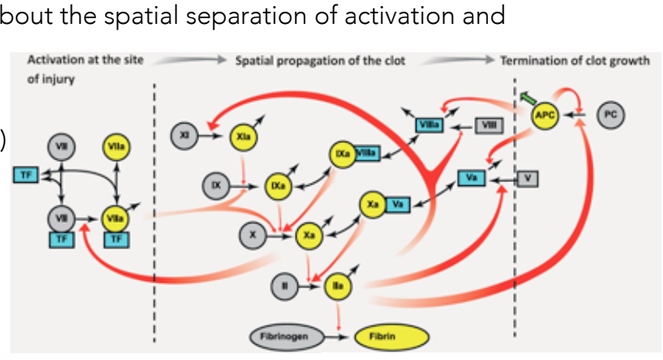
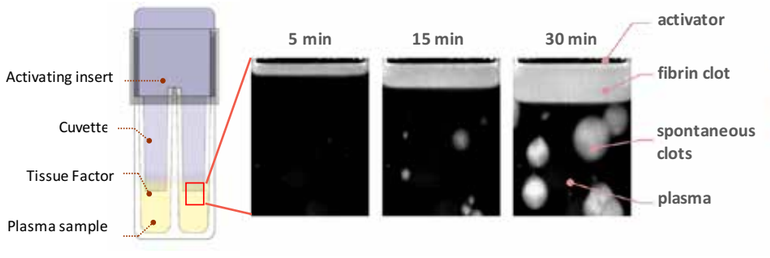
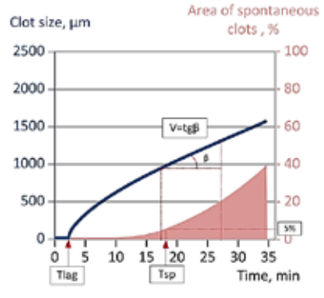


Fig. adapted form Panteleev et al. Biophys J 2010; 98(9):1751-1761





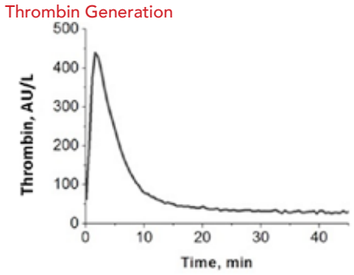
Fibrin parameters:
Tlag, [min] – Lag-time – time between contact of activator with plasma sample and start of clot growth
V, [µm/min] – Average rate of clot growth
Tsp, [min] – Time of spontaneous clots formation

Additional parameters:
Vi, [µm/min] - Initial rate of clot growth
D, [au} - Clot density
CS, [µm] - Clot size after 30 min

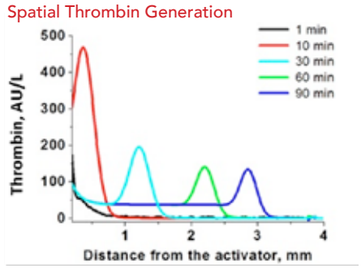
Thrombin Generation

Thrombodynamics Analyser T2-T records and analyses spatiotemporal dynamics of thrombin generations and fibrin formation simultaniously.
Videos of the growing fibrin clot and AMC fluorescence during thrombin generation are registered in the same cuvette over time and space.

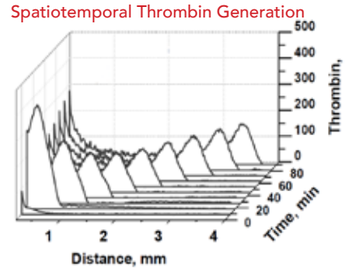
Thrombin Generation



Spatial Thrombin Generation



Spatiotemporal Thrombin Generation

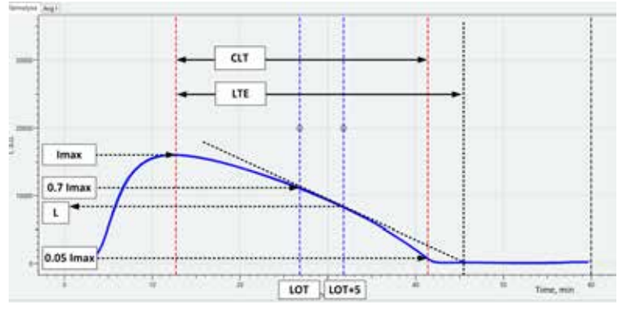


Main parameters of spatiotemporal Thrombin Generation:
Ast, (AU/l) - Stationary amplitude of thrombin peak
Vt, [µm/min] - Rate of thrombin peak propagation (Vt)

Additional parameters
ETP_ATG, [AU*min/l] - Area under the curve
Cmax_ATG, [AU/l] - Maximum thrombin concentration
Lag_ATG, [min] - Lag time for thrombin generation
Tmax_ATG, [min] - Time to peak

Fibrinolysis

In addition to regular Thrombodynamics clot growth parameters the new software allows quantification of fibrinolysis parameters in presence of specific fibrinolysis activators such as tPA and uPA.
Thrombodynamics allows the measurement of the fibrinolysis process by registration of the light scattering intensity inside the the fibrin clot.



Firbrinolysis Parameters:
LOT, [min] - Lysis onset time, defined as when the light scattering intensity inside the clot decreases 30% from the initial value.
LP, [%/min] - The lysis progression is t rate of the light scattering intensity decrease as the percentage of the initial value in the following 5 min [LOT, LOT+5 min].