Behnk Elektronik

Thrombomate® XRA

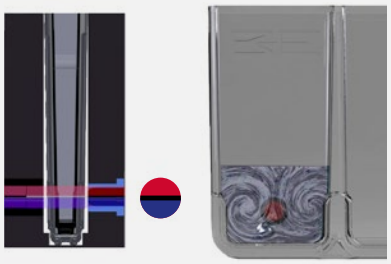
Intelligent. Innovative. Reliable.

Thrombomate® XRA is a fully automated system for light transmission aggregometry (LTA). The Gold Standard in platelet function testing for high quality results.

- Intelligent with fully automated system and reagent concept
- Easy to use by any lab technician after minimum training
- Innovative and safe technology
- Test applications for numerous agonist concentrations
- LTA aggregometry 24/7 operation possible

Innovative and safe technology

- Bichromatic LED optical system with robust performance even in lipaemic, hemolytic, icteric samples or samples with lower platelet counts [1].
- Patented special cuvettes with a steel ball for generating shear forces and efficient mixing.
- Positive sample and reagent identification with test applications for numerous agonist concentrations.



[1] Platelet count dependency of the fully automated Thrombomate® XRA
https://www.behnk.de/fully-automatic-system/

User friendly and reliable

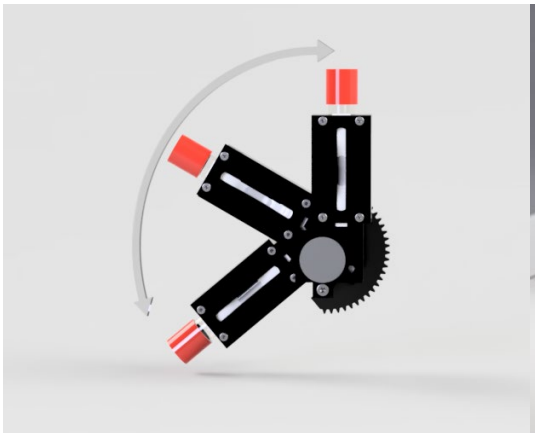
Operation via intuitive user interface on a touch screen. Minimized operation steps and reagent handling leads to a reduction of error potential.

- Massive reduction in personnel commitment.
- Makes aggregometry feasible in 24/7 operation, including STAT samples (detection of antiplatelet drugs effects).
- Barcoded reagent trays and preset test applications with specific agonist concentrations ensure reliable and comparable results.
- High loading capacity for all consumables. Minimizes labor and provides a long walk-away time.
- Transmission of results to LIS possible.
- Enables high quality LTA results by any technician after minimum training.

Highly standardized processing of samples

Insert up to 5 samples, push button and go.

- Counts down the resting time of platelet rich plasma (PRP) after centrifugation.
- Platelet rich plasma (PRP) samples are homogenized by defined automated inverting prior to pipetting. Minimizes the loss of most reactive large platelets by sedimentation.
- Closed tube pipetting and fully defined processing cycles.



Reference range

Each laboratory can easily determine its own normal ranges in Max. Aggregation (%) and Area under the curve AUC (Units).

- Submit results of your normal samples to the NC (normal collection) database.
- Calculate the standard deviation and percentiles.
  - All subsequent results are compared with this reference values / ranges in Max. Aggregation (%) and Area under the curve AUC (Units). In this way, even inexperienced users can quickly assess if the result is within the normal range or shows abnormalities.
  - The ranges / limits in Max. Aggregation (%) will be on the report.

Reagent concept

BE LTA Kit contains reagents with typical agonist concentrations, such as BE LTA 1 Kit and BE LTA 3 Kit according to ISTH/SCC* recommendation. This provides standardization and comparability between laboratories. Alternatively, BE LTA reagents and BE X-Trays can be used to compose you own screening panels in your preferred agonist concentrations.

- Minimum reagent handling. Simple reconstitution with 1 ml Diluent. No manual reagent dilutions required.
- Positive reagent identification and stability monitoring by individual QR code.
- Full traceability of reagents and consumables.
- Long stability after reconstitution. Up to 3 weeks in laboratory mode (8 h on board, 16 h at 2-8 °C).
- Two reagent racks can be loaded simultaneously, even a mix of BE LTA Kit reagent tray and BE X-Tray.

Convenient with BE LTA Kits

Different combinations of typical agonist concentrations, e.g., ISTH/SSC* proposed panel in LTA 1 Kit and LTA 3 Kit.

Preloaded in disposable cartridges. Insert and remove all reagents with one grip.

Preset test applications.

Retesting of same concentration possible.

Test kits contain all consumables for the assigned number of screens.

Flexible with BE LTA Reagent on BE X-Trays

Freely definable reagent trays with individual reagents for screening panel or tests for differential diagnostic.

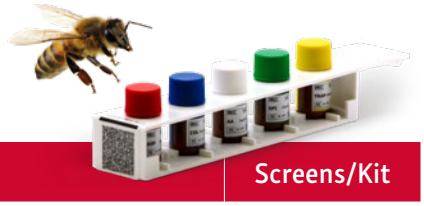
Individually coded system reagent vials that can be loaded freely into the coded BE X-Tray.

Multiple concentrations with preset test applications of most agonists possible.

Simple individual retesting possible.

Additional required materials: Sample Tubes, BE Clean Pro, BE Silicone Caps, BE LTA Cuvette Set

* Cattaneo, M, et al. Recommendations for the Standardization of Light Transmission Aggregometry: A Consensus of the Working Party from the Platelet Physiology Subcommittee of SSC/ISTH. J Thromb Haemost. 2013; 11:1183-9



BE LTA Kits

Kit	Application Thrombomate XRA (Agonist concentration)					Screens/Kit
LTA 1 Kit	ADP 2,5 µM	AA 1 mM	COL 2 µg/ml	EPI 5 µM	TRAP 10 µM	140
LTA 2 Kit	ADP 5 µM	AA 1 mM	COL 2 µg/ml			140
LTA 3 Kit	Risto 0,6 mg/ml	Risto 1,2 mg/ml				60
LTA 4 Kit	ADP 2,5 µM	ADP 5 µM	AA 1 mM	COL 2 µg/ml	Risto 0,6 mg/ml	140
LTA 5 Kit	ADP 2,5 µM	ADP 5 µM	AA 1 mM	COL 2 µg/ml	Risto 1,2 mg/ml	100

BE LTA Reagent with BE X-Trays

Reagent box	Possible Applications Thrombomate XRA (Agonist concentration)			Tests/Reagent box
BE ADP 100*	2,5 µM	5 µM	10 µM	70 - 280
BE ADP 200	5 µM	10 µM	20 µM	70 - 280
BE Col 50*	1 µg/ml	2 µg/ml	5 µg/ml	70 - 350
BE Col 100	2 µg/ml	5 µg/ml	10 µg/ml	70 - 350
BE AA 20	0,5 mM	1 mM	2mM	70 - 280
BE Epi 100	5 µM	10 µM		70 - 140
BE TRAP 0.5*	10 µM	20 µM	50 µM	70 - 350
BE TRAP 1.0	20 µM	50 µM	100 µM	70 - 350
BE Ris 15	0,6 mg/ml	1,2 mg/ml		86 - 174

* Under development

Thrombomate® XRA Specifications:

LTA (modified Born method)	✓
Measurement with/without* PPP	✓
Standardized homogenization of PRP	✓
Preset agonist concentrations	✓
Positive reagent identification	✓
Positive sample identification	✓
Full reagent and sample result traceability	✓
Intuitive user interface	✓
10 fold disposable cuvette bars	✓
Automatic addition of mixing balls	✓
Continuous operation / walk away time	> 1 hour
Throughput	~ 25 tests/h at 6 min. observation time
Time from standby to first result	~ 10 min.
Sample volume	1200 µl/5 agonist panel

Measuring time (observation time)	Individual selectable from 3 to 15 minutes; Recommended setting: 6 min.
Reaction curve and calculated data availability	Lag. Phase; Shape change; Slope; Max. agg.; AUC; Disaggregation;
Patient data storage	Extensive database; reaction curves and calculated data
Reagent positions	Two system reagent slots (up to 6 reagents each)
LIS Interface	Bi-directional/Transmission of reaction curves*/LAN*; RS 232
Power consumption	150 VA (max.)
Low sound Level	61 dB(A)
Analyzer dimensions (L x W x H)	63 cm x 54 cm x 55 cm
Weight	42 kg
Mains voltage	100 – 240 V
Operating system	LINUX

* Feature is under development

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Precision in Hemostasis

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