

Thrombomate® XRA

Intelligent. Innovative. Reliable.



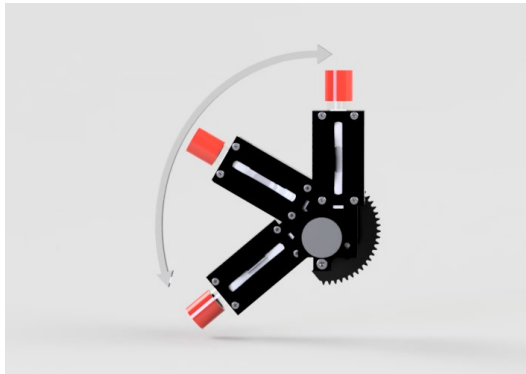
Fully automated system for light transmission aggregometry (LTA)
The Gold Standard in platelet function testing

- Flexible reagent concept with minimum handling
- Superior reagent stability
- Measurement with and without PPP possible
- Easy to use after minimum training
- Enables LTA 24/7

Highly standardized processing of samples

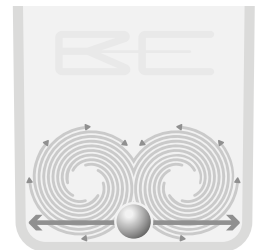
Insert up to 5 samples, press Start and go.

- Counts down the resting time of platelet rich plasma (PRP) after centrifugation.
- Homogenizing platelet rich plasma (PRP) by defined automated inverting prior to pipetting prevents sedimentation of most reactive large platelets.
- Closed tube pipetting and fully defined processing cycles minimizes variables in LTA lab testing.
- Preset tests with defined agonist concentrations ensures reliable and comparable results ⁽¹⁾.



Innovative and safe technology

- Bichromatic LED optical system with robust performance even in lipaemic, hemolytic, icteric samples or samples with lower platelet counts ⁽²⁾.
- Patented special cuvettes with a steel ball for generating shear forces and efficient mixing.
- Excellent precision ⁽¹⁾.



User friendly, consistent and minimizing labour

Intuitive operation via touch screen. Minimized operation steps and reagent handling reduces error potential.



- Massive reduction in personnel commitment.
- High loading capacity for all consumables minimizes labour and offers a long walk-away time.
- Transmission of results incl. reaction curves to LIS.
- Quality check of the results by comparing each result to the reference (Laboratory determined Normal).
- High quality LTA results after minimum training.
- 24/7 operation, including STAT samples (detection of antiplatelet drug effects).

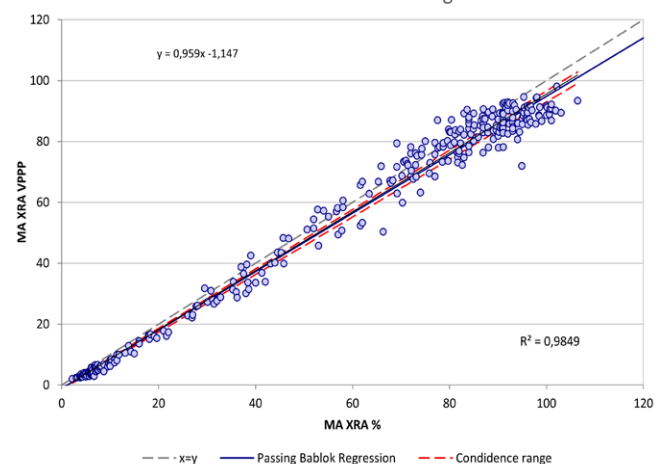
Thrombomate XRA enables LTA at strongly reduced costs

Measurement with or without Platelet-Poor Plasma

Thrombomate® XRA measures LTA in PRP against autologous PPP. A novel feature is the ability to measure LTA against a virtual reference. This is achieved by a patented method that analyzes the spectral properties of the PRP sample and by generation of a calculated autologous PPP, called "virtual" platelet-poor plasma (VPPP) via a complex algorithm.

Performing LTA without requiring autologous PPP, simplifies LTA, saves time and reduces patient material.

Excellent correlation between the measurement against PPP and VPPP ⁽³⁾.



⁽¹⁾ Sachs et al. Evaluation of the fully automated Thrombomate® XRA for light transmission aggregometry

⁽²⁾ Dempfle et al. Platelet count dependency of the fully automated Thrombomate® XRA

⁽³⁾ Sachs et al. Automated Light Transmission Aggregometry with and without Platelet Poor Plasma Reference: A Method Comparison



System 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/SSC recommendations⁽¹⁾. This provides standardization and comparability among laboratories. Alternatively, BE LTA reagents and BE X-Trays can be used to compose your own screening panels with your preferred agonist concentrations.

- Minimum reagent handling. Simple reconstitution with 1 ml diluent.
- No labour intensive and error prone manual reagent dilutions required and protection against evaporation.
- Positive reagent identification and stability monitoring.
- 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, including a mix of BE LTA Kit reagent tray and BE X-Tray. This offers > 12 different agonists / concentrations.

Convenient with BE LTA Kits

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

Preloaded in disposable cartridges. Insert and remove all reagents in one step.

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 composition.

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 (incl. spontaneous aggregation).

Simple individual retesting possible.

Additional required materials:


Sample Tubes, BE Clean Pro, BE LTA Cuvette Set

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	70
LTA 2 Kit	ADP 5 µM	AA 1 mM	COL 2 µg/ml			70
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	70
LTA 5 Kit	ADP 2,5 µM	ADP 5 µM	AA 1 mM	COL 2 µg/ml	Risto 1,2 mg/ml	50

BE LTA Reagent with BE X-Trays



Reagent box	Possible Applications Thrombomate XRA (Agonist concentration)			Tests/Reagent box
BE LTA ADP 100	2,5 µM	5 µM	10 µM	70 - 280
BE LTA ADP 200	5 µM	10 µM	20 µM	70 - 280
BE LTA Col 50	1 µg/ml	2 µg/ml	5 µg/ml	70 - 350
BE LTA Col 100	2 µg/ml	5 µg/ml	10 µg/ml	70 - 350
BE LTA AA 20	0,5 mM	1 mM	2 mM	70 - 280
BE LTA Epi 100	5 µM	10 µM		70 - 140
BE LTA TRAP 0.5	10 µM	20 µM	50 µM	70 - 350
BE LTA TRAP 1.0	20 µM	50 µM	100 µM	70 - 350
BE LTA Ris 15	0,6 mg/ml	1,2 mg/ml		86 - 174
BE LTA SPA 0.9 ⁽²⁾	Spontaneous platelet aggregation (SPA) with NaCl 0,9 %			

⁽¹⁾ 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

⁽²⁾ Barcoded reagent container for filling with 2 ml NaCl 0.9 %; sufficient for 80 tests; 50 pcs.

Thrombomate® XRA Specifications:

LTA (modified Born method)	✓	Reaction curve and calculated data availability	Lag. Phase; Shape change; Slope; Max. agg.; AUC; Disaggregation
Measurement with and without PPP	✓	Patient data storage	Extensive database; reaction curves and calculated data
Standardized homogenization of PRP	✓	Reagent positions	Two system reagent slots (up to 6 reagents each)
Preset agonist concentrations	✓	LIS Interface	Proprietary protocol, RS 232 / USB / LAN, GDT std.; bidirectional / Transmission of reaction curves
Positive reagent identification	✓	Power consumption	150 VA (max.)
Positive sample identification	✓	Low sound level	61 dB(A)
Full reagent and result traceability	✓	Dimensions (L x W x H)	63 cm x 54 cm x 55 cm
Intuitive user interface	✓	Weight	42 kg
10 fold disposable cuvette bars	✓	Mains voltage	100 – 240 V
Automatic addition of mixing balls	✓	Operating system	LINUX
Cont. 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 / Observation time	6 min. / Selectable from 3 to 15 min.		



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