ReoRox G2

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# More than a Thromboelastograph

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# ReoRox $G_2$

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## Advanced evaluation of haemostasis

Thromboelastography analyzers such as ROTEM and TEG are widely used to evaluate coagulation properties. A known disadvantage with such motor-driven oscillation technologies is that weak samples or samples with high elasticity may not be correctly measured.[1]

ReoRox $G_2$ utilizes a patented technology that measure visco-elastic properties from free oscillation. The method is extremely precise while being more gentle to the sample, making the technology suitable also for weak clots. ReoRox $G_2$ additionally reports both viscosity and elasticity in true SI units (mPa.s and Pa) making comparisons of results more reliable.

**Reagent open system**
In opposite to most systems on the market the ReoRox $G_2$ is a reagent open system. Besides the pre-configured MediRox reagent applications for evaluation of haemostasis, almost all reagents for clot test analysis can be used with the system.

**Pre-configured ReoRox kits:**

**HepScreen™.** HepScreen kit is intended to distinguish effects of heparin on coagulation from other coagulation abnormalities. It might be used for monitoring of heparin treatment of venous thrombosis. It also enables analysis of platelet function (i.e. clot retraction) in heparinised blood.

**FibScreen™.** The FibScreen kit is intended for analysis of platelet function and to distinguish platelet defects from defects in fibrin polymerisation. Typical used as a guide in transfusion therapy to determine if platelets or plasma should be used.

**ReoTrap™.** ReoTrap is intended for evaluation of bleeding/thrombotic tendencies in patients with poor or abnormal activation of the platelet function.

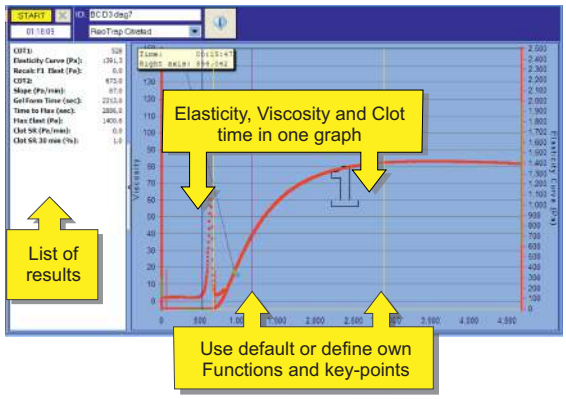
**HCT%.** Unique for the FOR technoloy is that Haematocrit - a parameter often monitored during surgery - can be measured from whole blood in just seconds.

**PT and APTT** can be analysed on whole blood.

**Open system** In opposite to its competitors ReoRox $G_2$ can report general visco-elastic results for both plasma and whole blood and applications for other reagents can easily be set-up on the system.

## Modern Software

With a modern Windows based software ReoRox $G_2$ can monitor both viscosity and elasticit. Watch in real time as samples increases in viscosity to reach a point where the clot is formed and elasticity measurement take over. Then overlay results in a Sample Comparison and compare in close detail. ReoRox $G_2$ monitors coagulating samples like never before, and with its unique ability to measure viscosity quicker reactions like PT or APTT can be determined correctly. Results are presented in true SI units making comparisons more dependable.




### Pre-installed Applications

ReoRox $G_2$ comes pre-installed with templates for a large variety of haemostasis applications: HepScreen, FibScreen, ReoTrap, Fibrinolysis, PT, APTT and more. Every template has a selected set of graphs, parameters and key-points displayed such as clotting time, rate of elasticity change (clot kinetics), maximum elasticity (max clot strength) and clot elasticity reduction (fibrinolysis).

### Create own Applications

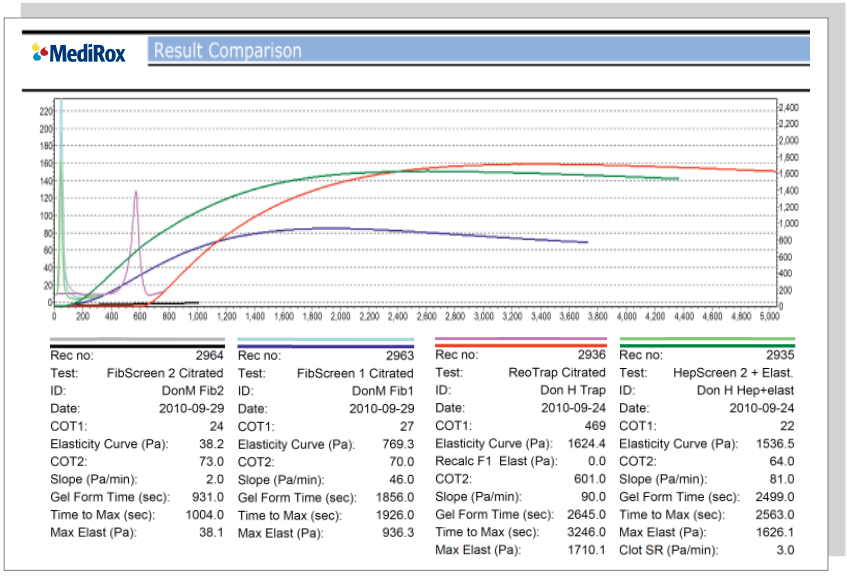
You can also easily modify or make new application templates, re-design the list of results, add new graphs or include own calculated functions.

### Sample Comparison

Using the comparison function of the software up to 4 samples can be compared in one graph, making interpretation of results easier.

### Applications Wizard

An on-screen Applications wizard is available, guiding the user through every step of the process.

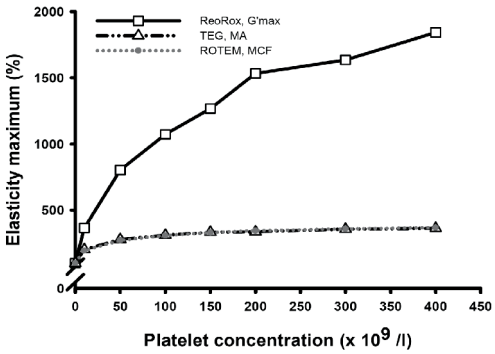



| Rec no: | 2964 | Rec no: | 2963 | Rec no: | 2936 | Rec no: | 2935 |
|---|---|---|---|---|---|---|---|
| Test: | FibScreen 2 Citrated | Test: | FibScreen 1 Citrated | Test: | ReoTrap Citrated | Test: | HepScreen 2 + Elast. |
| ID: | DonM Fib2 | ID: | DonM Fib1 | ID: | Don H Trap | ID: | Don H Hep+elast |
| Date: | 2010-09-29 | Date: | 2010-09-29 | Date: | 2010-09-24 | Date: | 2010-09-24 |
| COT1: | 24 | COT1: | 27 | COT1: | 469 | COT1: | 22 |
| Elasticity Curve (Pa): | 38.2 | Elasticity Curve (Pa): | 769.3 | Elasticity Curve (Pa): | 1624.4 | Elasticity Curve (Pa): | 1536.5 |
| COT2: | 73.0 | COT2: | 70.0 | Recalc F1 Elast (Pa): | 0.0 | COT2: | 64.0 |
| Slope (Pa/min): | 2.0 | Slope (Pa/min): | 46.0 | COT2: | 601.0 | Slope (Pa/min): | 81.0 |
| Gel Form Time (sec): | 931.0 | Gel Form Time (sec): | 1856.0 | Slope (Pa/min): | 90.0 | Gel Form Time (sec): | 2499.0 |
| Time to Max (sec): | 1004.0 | Time to Max (sec): | 1926.0 | Gel Form Time (sec): | 2645.0 | Time to Max (sec): | 2563.0 |
| Max Elast (Pa): | 38.1 | Max Elast (Pa): | 936.3 | Time to Max (sec): | 3246.0 | Max Elast (Pa): | 1626.1 |
| | | | | Max Elast (Pa): | 1710.1 | Clot SR (Pa/min): | 3.0 |

## An improved method for measuring elasticity

The study *"Free Oscillation Rheometry in the assessment of platelet quality"*[2] compared thromboelastograph technologies and verified that an increase in platelet concentration increased the elasticity 17 times when measured by ReoRox, while it only increased 3 times when using TEG® or ROTEM®.

A different study, *"Free Oscillation Rheometry detects changes in clot properties in pregnancy and thrombocytopenia"*[3] showed more than a 3 fold increased ability to measure elasticity using ReoRox compared to competing technologies. This indicating that the ReoRox is advantageous for detection of changes in elasticity.




The study *"Free Oscillation Rheometry in the assessment of platelet quality"* shows that FOR technology can measure higher and more linear elasiticty increases in platelet concentrations.

***"The ReoRox instrument had excellent measuring range and unusually small artefactual effects on clot elasticity induced by the instrument in comparison with published results on other instruments."***

From the published article "Effects of different blood components on clot retraction analysed by measuring elasticity with a free oscillating rheometer" [1] by Department of Transfusion Medicine &Clinical Immunology and Department of Clinical Chemistry, University Hospital, Linköping, Sweden

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## Research and industry


Within industrial applications the patented FOR technology has also open new frontiers in viscosity and elasticity measurements; traditionally viscosity measurements in industrial applications has meant large equipments and heavy investments. The ultra compact ReoRox $G_2$ single module is extremely compact and weights just 2 kg, and all required to operate it is a computer with a USB connector.

The FOR technology is especially suitable for low viscous material (i.e around water), an area most other analysers have the most problem with. This makes ReoRox $G_2$ particularly suitable for industrial applications as analysing milk, soft drinks, beer, water, juice, oil, rennet etc.

The unique FOR technology also makes ReoRox $G_2$ extremely fast. One measurement takes only three seconds making the system suitable whenever a high throughput is required.

References:
[1] Effects of different blood components on clot retraction analysed by measuring elasticity with a free oscillating rheometer, Platelets, December 2006; 17(8): 545–554
[2] Free oscillation rheometry in the assessment of platelet quality. Nahreen Tynngård Linköping University Medical Dissertations No.1056
[3] Free oscillation rheometry detects changes in clot properties in pregnancy and thrombocytopenia',Platelets,19:5,373 — 378