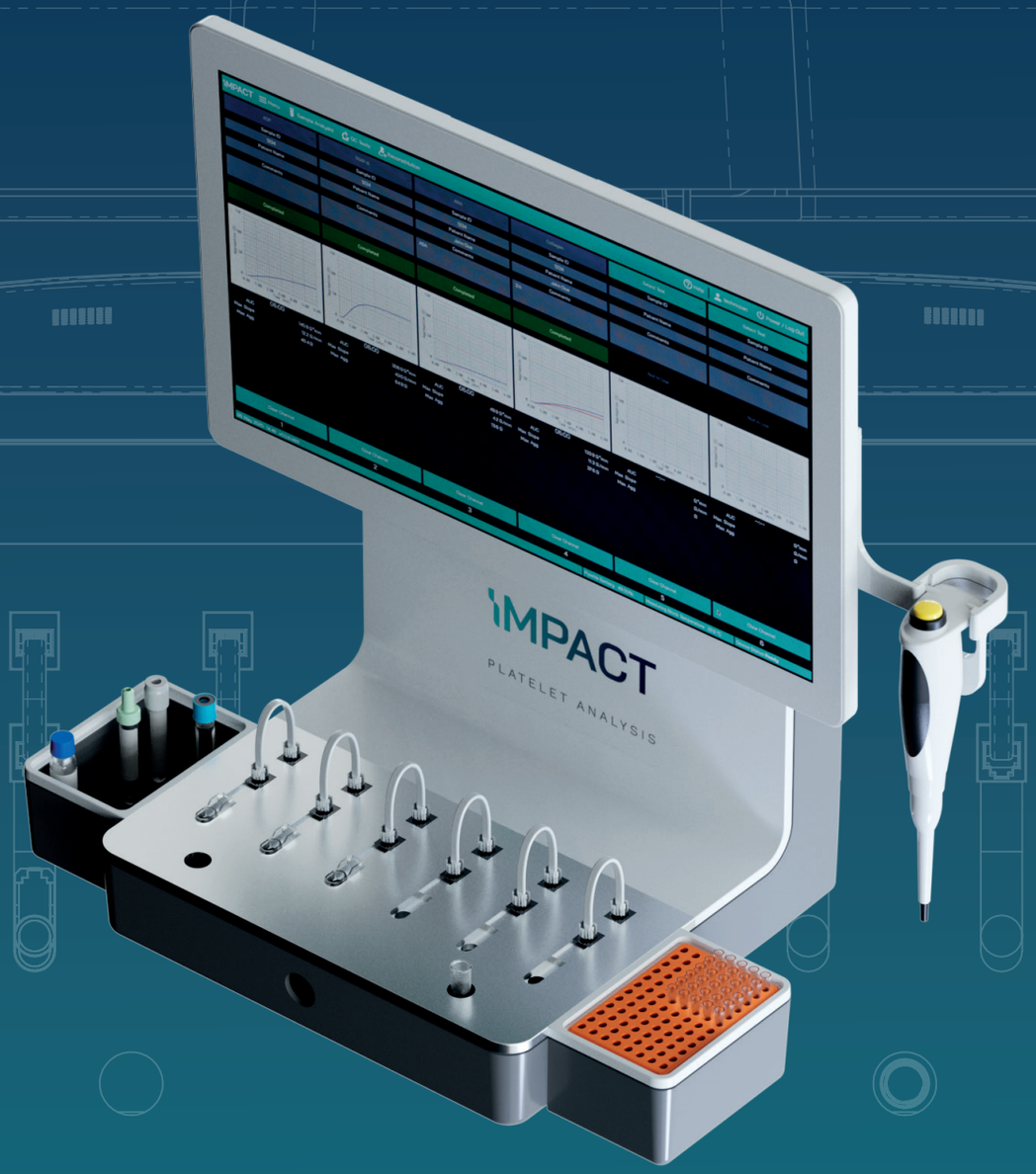
Discover the power of

iMPACT



Experience the next generation of platelet function testing

For research use only. Not for use in diagnostic procedures

Introducing IMPACT

Your solution for rapid and accurate platelet function testing for cardiac surgery, interventional cardiology, neuroradiology research.

IMPACT has an **intuitive touchscreen interface** and a **user-centric design,** which simplifies operations and minimises the footprint.

With a **comprehensive reagent portfolio,** IMPACT offers the potential for **optimal information.**

IMPACT's unique **test cell** offers secure handling, and the **advanced technology** guarantees rapid testing and reliable results.

IMPACT delivers results in under 10 minutes, allowing for timely, informed decisions.

IMPACT verifies every measurement by monitoring electrical signals to ensure consistent, reliable results.

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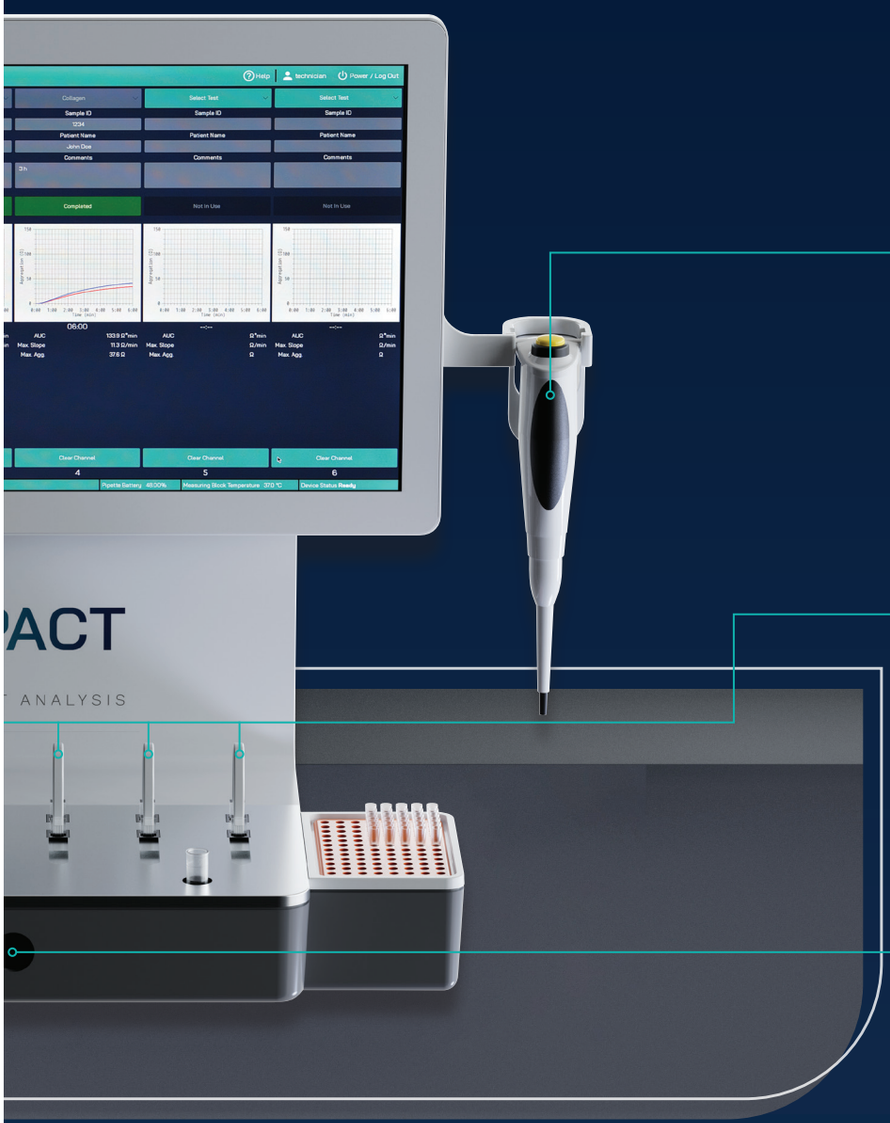


An **electronic wireless pipette** aids the consistent management of sample and reagent, eliminating the potential for volume errors, ensuring standardised platelet function results.

With **six measuring channels,** IMPACT provides flexible test combinations and enables parallel processing to maximise sample throughput.

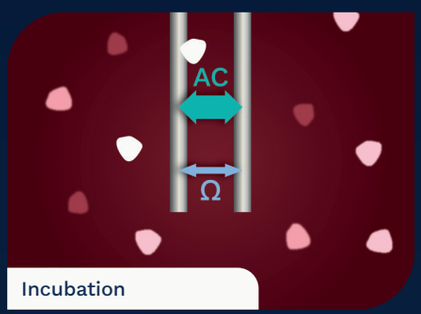
A built-in **label scanner** allows for rapid and accurate data entry, facilitating precise recording of information and audit trail compliance.

IMPACT is supported by responsive and proactive expert support.

IMPACT's built-in **connectivity to LIS through HL7** protocols facilitates accurate recording of affiliated information and confident audit trail compliance.

IMPACT technology

IMPACT utilises whole blood impedance aggregometry (WBIA), an established technology for platelet function testing that has been widely used for many years.[1-3] This is a rapid and standardised option for platelet function testing.[3]

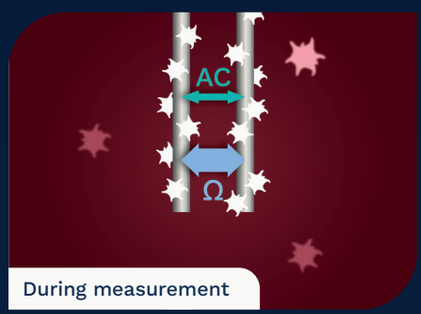


Inactive platelets

In the test cell alternating current flows between two pairs of sensor wires. Platelets circulate within a physiological environment, mixed by a Teflon coated stir bar. The whole blood is warmed up to 37°C.

Platelet activation

Upon activation by reagent, platelets attach to the wires and form aggregates in the blood sample. Aggregates both directly in the blood and on the wires increase electrical impedance.

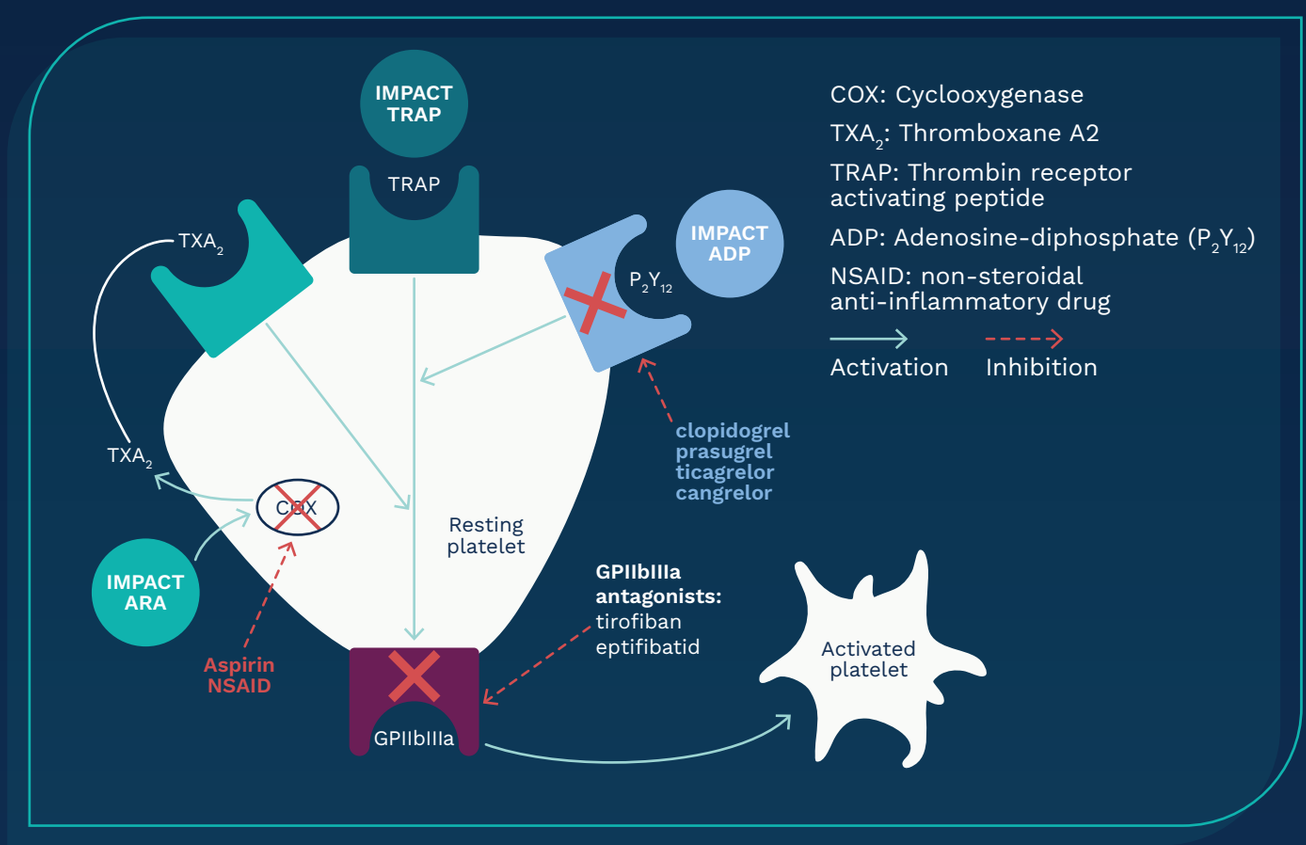


Platelet aggregation

The impedance is measured numerically in ohms and displayed graphically and numerically on the screen. Two measurements are performed in parallel in each test cell to provide internal verification and assurance.

WBIA has been established for over 45 years[1] and been widely used in platelet function testing.[4]

Activation pathways



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IMPACT reagents

IMPACT caters to diverse testing needs, with an extended portfolio of standardised reagents based on the recommendations for platelet function testing from the International Society on Thrombosis and Haemostasis (ISTH).

Reagent	Product number	Concentration (vial)	Action
IMPACT ARA	HB-2103-FG	5 mg/ml (16.4 mM)	Sensitive to aspirin and NSAIDs
IMPACT ADP	HB-2102-FG	200 µM	Sensitive to all P_2Y_{12} receptor blockers
IMPACT TRAP	HB-2107-FG	1 mM	Sensitive to GPIIbIIIa antagonists
IMPACT Collagen	HB-2104-FG	100 µg/ml	Congenital or acquired defects of platelet function
IMPACT Ristocetin High	HB-2105-FG	23.87 mg/ml	Sensitive to inherited and acquired platelet disorders
IMPACT Ristocetin Low	HB-2106-FG	6.2 mg/ml	Sensitive to vWS type 2b
IMPACT U46619	HB-2108-FG	100 µM	Activation directly via Thromboxane A2 receptor
IMPACT PGE1	HB-2112-FG	300 nM	Used together with ADP to increase the sensitivity of the ADP assay
IMPACT ASA	HB-2109-FG	30 mg/ml	Positive control for IMPACT ARA
IMPACT P_2Y_{12}	HB-2111-FG	TBD	Positive control for IMPACT ADP
IMPACT GPIIbIIIa	HB-2110-FG	50 µg/ml	Positive control for IMPACT TRAP

All reagents come in a package size of 6 x 210 µl.

Platelet function testing supports research in a multitude of fields like cardiac surgery, trauma, and blood banking

Advantages in cardiac surgery and trauma research

Platelet function testing is used to investigate bleeding risk before major surgery[5] in subjects who have been on antiplatelet therapy prior to cardiac surgery to examine the bleeding risk.[6]

Research applications of WBIA in cardiac surgery include:[6]

- Bleeding and platelet transfusions
- Coronary Artery Bypass Graft (CABG) studies[7]
- Measuring platelet function during Cardiopulmonary Bypass (CPB) and Extracorporeal Membrane Oxygenation (ECMO)[8,9]
- Investigating platelet transfusion[10]

Advantages in interventional cardiology and neuroradiology research

An appropriate response to P_2Y_{12} receptor blocker therapy is required to avoid in-stent thromboses or increased bleeding risk after:

- Percutaneous Coronary Intervention (PCI)[5,11-13]
- The placement of intracerebral flow diverters[14]
- Carotid stents[15]

Investigation of platelet function facilitates research of optimisation of medication and identification of non-compliance.[13,14]

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Laboratory, haemotology and blood bank research

- Whole blood rapid platelet function testing
- Research of platelet diseases (von Willebrand Disease, Glanzmann Thrombasthenia, Bernard-SoulierSyndrome and Receptor defects)[16,17]
- Quality control of platelet concentrates[18]

Additional research areas

Assessment of platelet dysfunction in a variety of additional research environments:

- Pharmaceutical
- Veterinary
- Medical devices
- Academic

Rapid platelet function testing

Rapid platelet function testing enables:

- Real-time data collection for immediate insights into platelet function in response to Dual Antiplatelet Therapy (DAPT) drugs[6]
- Facilitates time-sensitive research on platelet function during acute events, including interventional cardiology and neuroradiology applications

Power supply	
Operating voltage	100–130 V / 60 Hz, 200–250 V / 50 Hz
Mains frequency	50–60 Hz
Current (maximum)	1.5 A @ 100 V, 0.75 A @ 200 V
Power consumption	110 W (maximum)
Fuse	250 V, 1.5 A

Note: Mains supply voltage should not exceed recommended ranges.

Dimensions	
Dimensions	Overall height 56 cm; analyser width 35.5 cm; analyser and side boxes width 54.5 cm; front of analyser to back of power unit depth 34 cm
Weight	25 kg

Software	
Interface	LCD touchscreen display
Sample identification	Label scanner
Connectivity	HL7 LIS compatibility

Environmental requirements	
Operating temperature	18–29 °C
Relative/operating humidity	20–80 %
Altitude (maximum)	2000 meters

Learn more about IMPACT

impactplatelet.com

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References: 1. Cardinal DC, Flower RJ. The electronic aggregometer: a novel device for assessing platelet behavior in blood. J Pharmacol Methods. 1980;3(2):135–58. **2.** Calatzis A, Wittwer M, Krueger B, et al. A new approach to platelet function analysis in whole blood - the Multiplate analyzer. Platelets. 2004;15(8):479–517. **3.** Sibbing D, Braun S, Jawansky S, et al. Assessment of ADP-induced platelet aggregation with light transmission aggregometry and multiple electrode platelet aggregometry before and after clopidogrel treatment. Thromb Haemost. 2007;98(4):784–9. **4.** Aradi D, Komócsi A, Price MJ, et al. Efficacy and safety of intensified antiplatelet therapy on the basis of platelet reactivity testing in patients after percutaneous coronary intervention: systematic review and meta-analysis. Int J Cardiol. 2013;167(5):2140–8. **5.** Larsen JB, Hvas AM, Hojbjerg JA. Platelet function testing: update and future directions. Semin Thromb Hemost. 2023;49(6):600–8. **6.** Ranucci M, Baryshnikova E, Soro G, et al. Multiple electrode whole-blood aggregometry and bleeding in cardiac surgery patients receiving thienopyridines. Ann Thorac Surg. 2011;91(1):123–9. **7.** Weber CF, Dietrich W, Spannagl M, et al. A point-of-care assessment of the effects of desmopressin on impaired platelet function using multiple electrode whole-blood aggregometry in patients after cardiac surgery. Anesth Analg. 2010;110(3):702–7. **8.** Ranucci M, Baryshnikova E, Pistuddi V, et al. The effectiveness of 10 years of interventions to control postoperative bleeding in adult cardiac surgery. Interact Cardiovasc Thorac Surg. 2017;24(2):196–202. **9.** Garaj M, Durila M, Vajter J, et al. Extracorporeal membrane oxygenation seems to induce impairment of primary hemostasis pathology as measured by a Multiplate analyzer: an observational retrospective study. Artif Organs. 2022;46(5):899–907. **10.** Rahe-Meyer N, Winterhalter M, Boden A, et al. Platelet concentrates transfusion in cardiac surgery and platelet function assessment by multiple electrode aggregometry. Acta Anaesthesiol Scand. 2009;53(2):168–75. **11.** Davidson S. Monitoring of antiplatelet therapy. Methods Mol Biol. 2023;2663:381–402. **12.** Sibbing D, Aradi D, Alexopoulos D, et al. Updated expert consensus statement on platelet function and genetic testing for guiding P_2Y_{12} receptor inhibitor treatment in percutaneous coronary intervention. JACC Cardiovasc Interv. 2019;12(16):1521–37. **13.** Sibbing D, Aradi D, Jacobshagen C, et al. Guided de-escalation of antiplatelet treatment in patients with acute coronary syndrome undergoing percutaneous coronary intervention (TROPICAL-ACS): a randomised, open-label, multicentre trial. Lancet. 2017;390(10104):1747–57. **14.** Khanafer A, Cimpoca A, Bhogal P, et al. Low incidence of hemorrhagic complications both during and after surgical procedures in patients maintained on prasugrel single antiplatelet therapy. J Neuroradiol. 2023;50(1):65–73. **15.** Kreiberg MPB, Laugesen NG, Brandt AH, et al. Platelet-function-monitoring-guided therapy after emergent carotid artery stenting. J Clin Med. 2024;13(22):6690. **16.** Platelet function testing: introduction [Internet]. practical-haemostasis.com; [cited 2025 May 27]. Available from: https://practical-haemostasis.com/Platelets/platelet_function_testing_introduction.html. **17.** Albanyan A, Al-Musa A, AlNounou R, et al. Diagnosis of Glanzmann thrombasthenia by whole blood impedance analyzer (MEA) vs. light transmission aggregometry. Int J Lab Hematol. 2015;37(4):503–8. **18.** Fiedler SA, Boller K, Junker AC, et al. Evaluation of the in vitro function of platelet concentrates from pooled buffy coats or apheresis. Transfus Med Hemother. 2020;47(4):314–24.

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For research use only. Not for use in diagnostic procedures. IMPACT is not yet available on the market.