

Information for Providers - Platelet Aggregation Testing

This information sheet is intended for providers ordering platelet function testing through Versiti Diagnostic Labs. It includes information on sample requirements, fasting, and medications that may interfere with testing.

If you have questions or would like to discuss special circumstances with one of our Hemostasis Medical Directors, please contact our client services team at [800-245-3117 x 6250](tel:800-245-3117) or email us at labinfo@versiti.org.

Test Overview

Platelet function testing at Versiti is currently performed via lumiaggregometry, which measures platelet aggregation via light transmission aggregometry (LTA) and release of ATP from dense granules via a luminescent reaction (Born 1962, Holmsen 1966). Lumiaggregometry is clinically useful in the diagnosis of acquired or congenital platelet function defects, although it is most often ordered when a hereditary platelet function disorder is suspected.

The ability of patient platelets to respond to different agonists allows the laboratory to differentiate between different types of platelet function disorders. Not all laboratories utilize the same agonists or the same concentrations of agonists, which can cause difficulties in comparing results from different laboratories. Versiti uses the following agonists: ADP, arachidonic acid, collagen, thrombin receptor activation peptide (TRAP), high-dose ristocetin and low-dose ristocetin. We do not test response to epinephrine.

Sample Requirements

- **Platelet Aggregation (1175) and Ristocetin Induced Platelet Aggregation (1068):** Twelve (12) 4.5 mL samples in 3.2% buffered sodium citrate, glass or plastic evacuated tubes
- **Single Platelet Agonist Aggregation (1250, 1255, 1260, or 1270):** Six (6) 4.5 mL samples in 3.2% buffered sodium citrate, glass or plastic evacuated tubes
- Maintain whole blood sample at room temperature (do not process the sample)
- Do not send samples through a pneumatic tube system
- Notify Versiti Hemostasis Lab at [414-937-6129](tel:414-937-6129) when sample is drawn
- Transport samples and requisition to the Versiti Hemostasis Lab within two hours of the draw time. Samples should be delivered to the 17th Street entrance.

Note: It is the responsibility of the drawing institution to transport the sample.

Fasting

Historically, patients have been asked to fast prior to platelet function testing to prevent variation caused by changes in blood glucose and lipid levels. However, recent data shows that pre- and post-fasting LTA results are not significantly different in healthy individuals (Krekels 2019). Additionally, the most recent recommendations from the ISTH subcommittee on platelet physiology state that it is uncertain whether blood samples for LTA must be collected from fasting subjects (Cattaneo 2013). Due to this uncertainty, we recommend the following:

- If it is medically appropriate for a patient to fast, please advise the patient to avoid all food and beverages except water after midnight prior to specimen collection in the morning.
- If you believe that fasting may cause undue risk to the patient, please advise the patient not to fast prior to testing.
- Please advise non-fasting patients to avoid drinking caffeine within two hours of specimen collection.
- Please advise all patients to avoid smoking or vaping within 30 minutes of specimen collection.



Medication Interference

We recommend that platelet function inhibitors (e.g., NSAIDs, aspirin and aspirin-containing products, and P2Y12 inhibitors such as clopidogrel) are stopped at least 10 days prior to specimen collection.

Hundreds of other medications and supplements have been shown to affect platelet aggregation with variable levels of severity (Scharf 2012). The risk of holding a medication must be balanced with the clinical indication for platelet aggregation testing and the nature of the expected interference. Please be sure to provide the laboratory with the patient medication list per instructions on the ordering portal or requisition form and indicate which medications are being held prior to platelet aggregation testing, if any.

If you would like to discuss your patient's medications with one of our hemostasis medical directors, please contact our client services team at [800-245-3117 x 6250](tel:800-245-3117) or labinfo@versiti.org.

References

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Scharf RE. Drugs that affect platelet function. *Semin Thromb Hemost*. 2012 Nov;38(8):865-83. doi: 10.1055/s-0032-1328881. Epub 2012 Oct 30. PMID: 23111864.

