# CirQuest Labs

Light Transmission and Luminescence Aggregometry

Aggregometry remains the gold standard for evaluating platelet function due to the capability to tailor testing and to adequately assess drug dose response. It is the reference method used clinically to test for platelet disorders.

Light Transmission Aggregometry (LTA) measures the capability of light to pass through a stirred sample of platelet-rich plasma, typically cloudy in appearance. Upon addition of agonist, platelets begin to aggregate, the PRP becomes less cloudy, allowing more light to pass through the sample. Light transmission is recorded over time. Platelet characteristics including shape change, rate of aggregation, and disaggregation can be evaluated using LTA. Whole blood LTA can also be performed, and may resemble results acquired with platelet-rich plasma depending upon the purpose of the testing.

Luminescence aggregometry or lumi-aggregometry simultaneously measures platelet aggregation and degranulation. In lumi-aggregometry, luciferin-luciferase reacts with extracellular ATP released from platelet dense granules to yield a chemilluminesence signal. This light emission is recorded in tandem with light transmission, an indicator of platelet aggregation. Whole blood or platelet-rich plasma is acceptable for lumi-aggregometry testing.
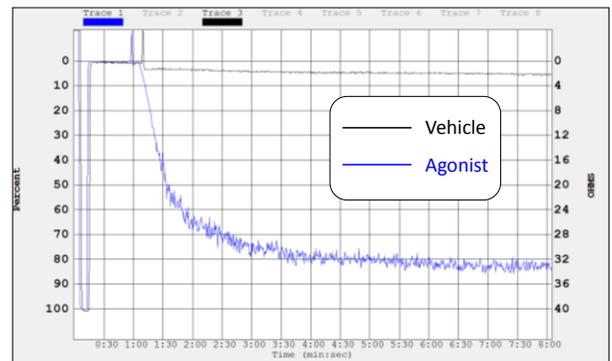
Light transmission aggregometry tracing for platelet-rich plasma treated with saline and single-dose agonist.

With nearly three decades of experience in performing aggregometry for clinical and translational research, CirQuest has utilized aggregometry in drug discovery, mechanism of action and pharmacodynamic studies, and off-target drug activity. Agonists including thrombin, agonist peptides, ADP, collagen, and arachidonic acid are routinely used at concentrations relevant to the project goals   We are also experienced in clinical site selection and site training. We also provide sample processing and LTA reagent kits and are adept at remote monitoring for studies involving aggregometry.

Early Development and Clinical Research Experience
✓ Target identification
✓ MOA
✓ Pharmacodynamics
✓ Data analysis
✓ Multi-platforms

Clinical Trial Support
✓ Site selection, evaluation, and training
✓ Reagent QC and kits
✓ Remote site monitoring and troubleshooting
✓ Limited equipment leasing