T-018741 & T-019450 - COMPUTATIONAL IMPROVEMENTS OF IMMUNOASSAYS

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Technology Description

Researchers in Mark Zaydman's laboratory at Washington University have optimized a new method to improve the analytical measurement range (AMR) in homogeneous turbidimetric immunoassays. The method utilizes the area under the curvature parameters to provide a log-linear calibration curve in the zone of antigen excess extending the AMR by >10-fold for various immunoassays. Without requiring additional sample dilutions, this technique is able to detect and correct antigen-excess using data typically recorded by automated chemistry analyzers.
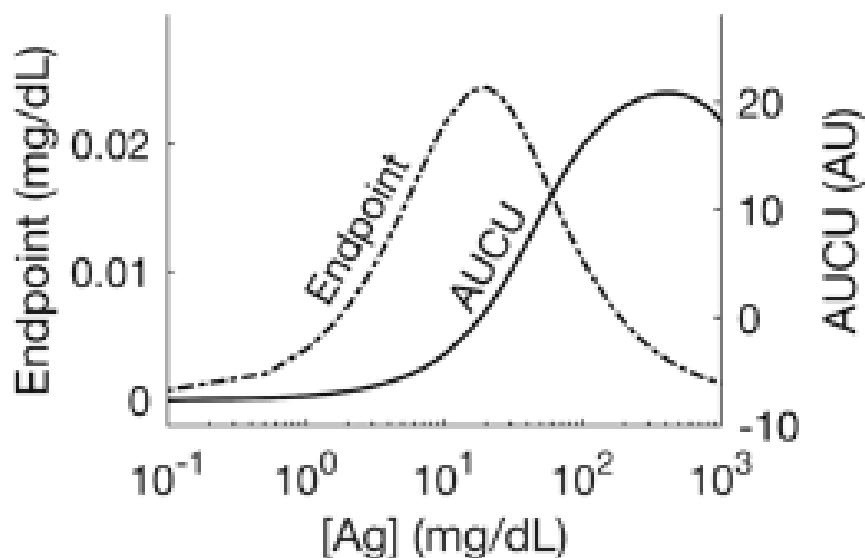
Stage of Research

Process has been actively validated in patient samples spanning wide biological ranges (up to ~450 mg/dL) since initial publication. An additional method involving kinetic calibration has been developed that is capable of functioning at ranges beyond the AMR of typical calibration methods.

Publications

Zaydman, M.A., Brestoff, J.R., Logsdon, N., and Gronowski, A.M. (2019). Kinetic Approach Extends the Analytical Measurement Range and Corrects Antigen Excess in Homogeneous Turbidimetric Immunoassays. The Journal of Applied Laboratory Medicine *4*, 214–223. 10.1373/jalm.2019.029256.

Applications

- Clinical diagnostics & instrument software: analysis of homogenous immunoassays such as turbidimetric and nephelometric assays.

Key Advantages

- **Generalizable to data typical of automated chemistry analyzers.**
- **Easily integrates into existing workflows.**
- **Faster, lower cost alternative to conventional methods.**

Patents

- Patents filed (US20210311046A1 & additional provisional pending).

Related Web Links – Zaydman Profile