

Mean Absolute Percentage Error (MAPE) as a Reliable Tool for Assessing Reaction Time in Immunochromatography Tests

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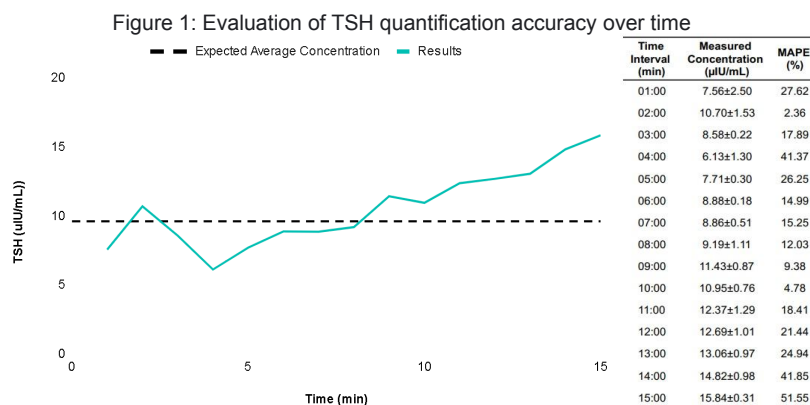
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ABSTRACT

In the clinical laboratory, stability testing is an important step to ensure the test performance is stable to the end user. The most traditional approaches (e.g. accelerated and real-time stability) focus on evaluating the overall shelf-life of reagent kits in storage and shipping conditions. On the other hand, these are usually inadequate for estimating the optimal reaction time range, which is essential for in-house validation. Here, we show an accessible approach to evaluate the accuracy over time in Thyroid-Stimulating Hormone (TSH) quantification. Controls were read in triplicate for 15 min at different time intervals, including the optimum reaction time indicated by the supplier (around 10 min). MAPE was estimated by comparing the concentration from precision studies with each time interval, and a MAPE >20% indicated instability^{1,2}. MAPE shows up as a reliable approach for estimating result stability in the clinical laboratory (Figure 1).



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