**ABSTRACT:** For saliva and urine cortisol, liquid chromatography-tandem mass spectrometry (LC-MS/MS) is the measurement method of choice, with high sensitivity and specificity. However, conventional LC-MS/MS approach requires lengthy manual sample preparation by liquid-liquid extraction (LLE) or solid phase extraction (SPE), and patient samples are processed in a batch mode. To shorten sample preparation time, we investigated commercially available dispersive pipette extraction tips as a quick alternative. We validated this improved LC-MS/MS method in a clinical chemistry lab. Assay characteristics such as sensitivity (LLOD and LLOQ), linearity, and precision are presented here. We conclude that the improved LC-MS/MS method is rapid and as sensitive as the conventional LC-MS/MS approach much more suitable for clinical diagnostic use.

**METHODS:** Stable deuterium labeled cortisol (cortisol-d4; CDN Isotopes, Inc., Pointe-Claire, Quebec) was used as internal standard (IS). BSA (0.2%) based calibration standards and quality control materials were made by spiking pure cortisol compound. A Shimadzu Liquid Chromatography system (model LC-20AD) with API5000 tandem mass spectrometer (AB Sciex, Redwood City, CA) with Turbo V Source was used for all analysis. Multi-WAX S tips [35-65 u –10 mg + 40 mg salt] was from DPX Labs, LLC, Columbia, SC). LC column was from Phenomenex (Torrance, CA). All patient saliva samples were collected in Salivette (Sarstedt, Nümbrecht, Germany).

**REFERENCES:**