

## REDEFINING NATURAL PRODUCTS SCREENING AND CHARACTERIZATION USING MS TECHNOLOGIES

**Jimmy Yuk<sup>1</sup>, Giorgis Isaac<sup>1</sup>, Dhaval Patel<sup>2</sup>, Lirui Qiao<sup>3</sup>, Mark Wrona<sup>1</sup>, Diane Diehl<sup>1</sup>, and Kate Yu<sup>1</sup>;**

<sup>1</sup>*Waters Corporation, Milford, MA, USA;* <sup>2</sup>*Waters Pacific Pte Ltd, Singapore;* <sup>3</sup>*Waters China, Shanghai, China; Jimmy\_Yuk@waters.com*

Natural products chemical ingredient profiling is a challenging task because of the sample complexity and the analyses required. For any natural products related study, regardless the research focus and the final end goal, ingredient profiling (to elucidate the active compounds from a particular plant), sample comparison (to understand point of origin and to prove authenticity), quantification and identification of target compounds for quality control purpose are all routinely required. With the constant evolution in analytical technologies, the application of high resolution LC/MS instrumentation such as UPLC/QTOF MS has been gaining popularity in chemical ingredient analyses. Application of these technologies can help to shorten analysis time, increase separation efficiency, and obtain results with high confidence. However, these technologies generate large and complex datasets, data analysis and interpretation can be the rate limiting step in chemical ingredient profiling.

Here, we present various botanical studies to demonstrate how to effectively use different analytical system solutions to natural product related problems. All the studies shown utilizes UPLC/QTOF MSE and novel informatics tools for complex sample comparison, to solve problems such as point of origin, plant authentication, and commercial product authentication. The presentation also includes a simple and novel informatics tools with a natural product database that has been specifically developed for natural products chemical ingredient profiling.

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