

**PW22 The use of red wine as a matrix to test LC/MS system robustness with automated sample cleanup.**

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Direct analysis of large volumes of wine without sample preparation using online extraction.

A method for online sample cleanup of 1mL injections of red wine spiked with nitrogen containing compounds is demonstrated. This allows for an improvement in signal to noise ratios for low concentration samples by a factor of 10-100X (based on injection volume). Red wine was chosen to test robustness of the mass spectrometer and LC columns. No sample treatment was performed prior to injection. Over 600 injections were made on the system with no loss in sensitivity or performance. Burgundy wine was spiked with a mixture of 9 herbicides and 6 fungicides at level of 500pg/mL. 1mL of neat wine was injected directly onto a loading column (Hypersil GOLD 20X2.1mm 12u) in a high aqueous mobile phase. After approx. 1 min., a multi port valve is switched to enable the load column to be back flushed onto the analytical column (Hypersil GOLD 50X2.1 3u), where the compounds are separated prior to introduction into the mass spectrometer (Finnigan TSQ Ultra).

No significant increase in pressure was observed on either column. In addition to the advantage of having an online sample preparation setup, the large injection volume allows for the pre concentration of samples on the loading column, and the samples are then eluted onto the analytical column. Compared to a 100uL injection volume, the response was on average 10 times higher.