

**April 6, 2016 (13:30–14:20)**



VENDOR SEMINAR:

## **Orbitrap technology: the new frontiers in food profiling**

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### **Introduction to Thermo Fisher Scientific solutions for food profiling**

Cesare Rosini, Thermo Fisher Scientific, Italy

### **Orbitrap technology: the new frontiers in food profiling**

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Quality, safety and authenticity represent the key pillars of food integrity. A wide range of laboratory techniques has been employed to control these attributes, aiming at protection of consumers' health and fraud prevention. As regards food authenticity, while combination of various targeted analyses was used in past time for this purpose, nowadays, non-targeted fingerprinting /profiling approaches have become the 'gold standard'. In this way, a more comprehensive information on respective sample may be obtained within a single analytical procedure.

In our presentation, two case studies will be shown. The high resolution, accurate mass spectrometry (HRAM) enabled by hybrid quadrupole-Orbitrap mass spectrometer as a challenging tool for classification of olive geographical origin. The U-HPLC-MS/MS fingerprinting of polar metabolome fraction followed by sophisticated data processing were employed for. The strategy to identify specific authenticity markers will be discussed. The second study was focused on cannabinoids profiling in various cannabis products. With regards to fairly different concentration of cannabinoids present in various cultivars of *Cannabis sativa* plants, the quantification strategy had to be optimized to prevent inaccurate results due to the measurements outside the linearity range.