Globalization of the food market and growing human population require sustainable food production and consumption. Systematic food safety screening and quality controls using affordable and powerful high throughput technologies is currently improving microbial risk-benefit assessment. It is obvious that food microbiology covers many challenges, from the appropriate use of micro-organisms for health benefits to spoilers and pathogens surveillance. Fast and robust analytical solutions are necessary, and without any inconclusive data.

Based on the acquisition of protein fingerprints of microorganisms that are compared to a comprehensive library, the MALDI Biotyper® complete solution provides rapid and reliable identification of positive microflora, pathogens, quality indicators and other microbial contaminants. The MALDI Biotyper® has changed microbial identification, and is increasingly recognized as an established tool in routine testing, improving all the analytical steps in the entire food chain: screening of raw materials and ingredients, quality controls of production processes, storage and hygiene conditions, distribution of safe food products

Integrating MALDI Biotyper® into routine testing workflow results in a significant consolidation of resources, as it replaces multiple traditional and biochemical identification methods. Using the same workflow for all micro-organisms and transferring automatically the identification results to LIMS, the MALDI Biotyper® enables easy micro-organisms identification and pathogen confirmation from selective and non-selective culture media. The entire method takes only a few minutes for a single sample and less than one hour for 95 samples, and provides results up to 24 hours faster than traditional methods. The integrated library of the MBT Software comprises spectra of thousands of strains including bacteria and fungi, and the library is continuously maintained and updated according to strict quality-controlled procedures.

After a presentation of the MALDI Biotyper® principle and workflow, the use of this high-throughput technology in food safety and quality controls will be illustrated:

- How the subtyping module concept improves characterization and differentiation;
- Third party assessment of the MALDI Biotyper for fast and reliable confirmation of pathogens;
- The never-ending but wonderful story of the database extension, which key to success