

3rd International Conference on

Diagnostic Microbiology and Infectious Diseases

September 24-25, 2018 | Montreal, Canada

Flow cytometry-based strategies for pathogens and contaminants analysis

Pierre Burguiere

AMA Research Solutions, France

Flow cytometry is being used for several decades in eukaryotic biology; however, its application for microbiological diagnostic is much more recent. Technological advances in research have led to the development of next-generation flow cytometry protocols allowing the emergence of avant-garde approaches in the field of microbial analytics. An overview of these global approaches will be presented to illustrate flow cytometry-based strategies for microbiological analysis, amongst which: i) detection, quantification and identification of pathogens and contaminants in different matrices (e.g. food products, beneficial microbes products such as probiotics, drinking water and wastewater); ii) determination of microorganisms susceptibility to antimicrobial compounds, iii) assessing beneficial microbes ability to impede adhesion of pathogens onto intestinal epithelial cells. Technically, these approaches rely on flow cytometry viability assays that can be combined with antibodies (immunofluorescence) or nucleic acid probes (fluorescence *in situ* hybridization) to allow the analyses to be microbe-specific. In certain cases, coupling to microbial enrichment (microbiological growth and/or non-culture-based procedures) is also required. The efficiency of these approaches has been demonstrated for the analysis of beneficial microbes (e.g. lactic acid bacteria) with higher performances than those of classical approaches (shorter result delivery time, less labor intensive, the potential for automation, more precise results). Thus, validating the potency of flow cytometry in providing innovative solutions for R&D and quality microbial analysis.

Biography

Pierre Burguiere is a Microbiologist with 15+ years of experience. He is the founder and CEO of AMA Research Solutions, a biotech company servicing in microbial R&D and quality. Prior to that, he worked in the field of beneficial microbes where he held different positions such as Global Quality Director, Preclinical Research Director and Research Scientist. He earned a PhD in Microbiology from University Paris Diderot, during which he researched on *Bacillus subtilis* sulfur metabolism and its regulation at the Institut Pasteur. He co-authored 10+ scientific research articles and presented 30+ lectures & posters at international conferences.

pierre.burguiere@edostar.com

Notes: