

CCQM Webinar on 'Ensuring the reliability of measurements in response to the COVID-19 pandemic'

10 December 2020 at 12h00 (UTC+1)

For the second in a series of CCQM Webinars dedicated to the reliability of measurements in response to the COVID-19 pandemic we have three invited presentations from external experts on the needs and their activities in addressing the reliability of molecular diagnostic and antigen tests for Covid-19.

Organizing Committee: J. Huggett (LGC), J. Melanson (NRC), B. Güttler (PTB), G. O'Connor (PTB), J. Campbell (LGC), R. Wielgosz (BIPM), S-R. Park (CIPM).

Guest Panel Member: I. Young (JCTLM/IFCC)

Webinar schedule

- 12:00-12:10 Webinar structure and guidance for panelists and attendees, R. Wielgosz
Welcome from CCQM President, S-R. Park
Introduction to Webinar and Speakers, J. Huggett and G. O'Connor
- 12:10-12:35 Molecular testing for SARS-CoV-2, standardization, challenges and needs, M. Zambon
- 12:35-12:40 Questions
- 12:40-13:05 Validation and implementation of rapid antigen testing for detecting SARS-CoV-2 infection, C. Geurts van Kessel
- 13:05-13:10 Questions
- 13:10-13:35 Experiences from projects for MS-based SARS-CoV-2 detection, H. Vissers
- 13:35-13:40 Questions
- 13:40-14:00 Panel questions and discussion: Evolving needs of testing in response to the Covid-19 pandemic

Molecular testing for SARS-CoV-2, standardization, challenges and needs

Maria Zambon

Professor Zambon is Head of Influenza & Respiratory Virology, National Infection Service, Public Health England (PHE). PHE's remit includes infectious disease surveillance, providing specialist and reference microbiology and microbial epidemiology, co-ordinating the investigation and cause of national and uncommon outbreaks, helping advise Government on the risks posed by various infections and responding to international health alerts. She is also Director of the WHO National Influenza Centre, WHO Corona Virus reference laboratory & RSV Reference laboratory.

Maria's own research group is involved in respiratory virus diagnosis, surveillance and integrated clinical research programmes, with particular emphasis on influenza and other respiratory viruses. Maria coordinates several multinational EU projects on influenza vaccines and antivirals. Her main research interests are the diagnosis of viral infections in humans, especially RNA viruses, the pathogenicity of influenza and development of new vaccines for respiratory viruses, particularly influenza.



Validation and implementation of rapid antigen testing for detecting SARS-CoV-2 infection

Corine Geurts van Kessel



Rapid detection of cases is essential in stopping the ongoing spread of SARS-CoV-2. Although rapid antigen testing is not as sensitive as the gold standard RT-PCR, the time to result is decreased, strengthening the effectiveness of contact tracing. In this presentation the essential validation, standardization and pitfalls of rapid antigen tests will be discussed

Corine Geurts van Kessel is a clinical virologist at the department of Viroscience of the Erasmus MC, where she leads the laboratory of serology and virus culture and is a member of the WHO reference laboratories of viral hemorrhagic fever, arboviruses and SARS CoV-2. She has a specific interest in filling the knowledge gaps in disease kinetics and diagnostics of emerging viral infections, such as COVID-19, Lassa fever and Zika. She obtained her medical degree at the Erasmus University Rotterdam, the Netherlands, and her PhD at the departments of Virology and Pulmonary Medicine, on the role of dendritic cell subsets in influenza virus immunity.

Experiences from projects for MS-based SARS-CoV-2 detection

Hans Vissers

The COVID-19 pandemic has resulted in the development of mass spectrometry (MS) based methods to characterize, identify and quantify proteins that are aimed at understanding the structural biology and interaction mechanisms of SARS-CoV-2, or to act as a complementary methods to detect relevant markers. Experiences from a project that was focused on the application of targeted mass spectrometry as a quantitative SARS-CoV-2 analysis method, through the detection of viral peptides in proteolytically digested protein extracts from nasopharyngeal swabs will be presented. The application of desorption electrospray ionization (DESI) ambient ionization technology for the analysis of dry nasopharyngeal swabs will also be described. This relies on the analysis of lipid distribution profiles using multivariate analysis techniques and demonstrates the possibility of the use of MS as a rapid and semi-quantitative detection technique.

Hans Vissers is currently Senior Consulting Scientist within Scientific Operations at Waters Corporation. His main interests include high-resolution qualitative and quantitative LC-MS, biomedical research related applications, the application of ion mobility as a separation technique, MS acquisition methods and developing applied informatics solutions in collaboration with internal and external groups and departments. He is a member of the Scientific Advisory Board of PRIDE PRoteomics IDentifications (PRIDE) database, supervises and mentors PhD students from various universities, co-authored over 70 peer-reviewed papers and contributed to numerous patents. Hans holds a PhD from the Eindhoven University of Technology, The Netherlands.

