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Current state-of-the-art in antibiotics, antibiotic resistance and novel antibacterial strategies

The last years have been an exciting time for antimicrobials and microbiological research. Firstly, Antimicrobial Resistance (AMR) was in the spotlight and heavily discussed in worldwide conventions from the G7 summit to President Obama's national action plan. Also there has been unprecedented investment in developing new antibacterial strategies, by the public (EC) and private sector, mainly in the EU and (increasingly) the USA. After a long hiatus, a new class of antimicrobials (teixobactin) was finally discovered. Alarmingly, however, we also observed emergence of novel AMR mechanisms to last line antibiotics such as colistin this year. Finally, some very interesting breakthroughs in the field of novel diagnostics and host biomarker discovery were made utilizing nanotechnology and proteomics. This keynote lecture will try to encapsulate the major findings in the field of microbiological research during he last year with respect to AMR, novel antibiotics, and diagnostics and host biomarker discovery.

Biography

Samir Kumar-Singh is a certified Medical Doctor with a Doctorate in Pathology and a Master degree in Laboratory Animals. He is a full-time Research Professor of Molecular Pathology at the Faculty of Medicine, University of Antwerp, Belgium and is affiliated to the Vaccine and Infectious Disease Institute, Belgium. He has published a well-cited body of work on molecular pathology of cancer and neurodegeneration involving patient studies and mouse modeling. He serves on several Review and Editorial Boards and international consortia. Since 2012, his group is engaged in studying the pathomechanism of hospital acquired pneumonia especially ventilator-associated pneumonia (VAP) and has developed several authentic rat and mouse VAP as well as acute and chronic pneumonia models to study disease pathogenesis and for biomarker discovery as well as high-throughput *in vitro* screens for new antimicrobial targets.

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