

3<sup>rd</sup> World Congress and Exhibition on

# ANTIBIOTICS AND ANTIBIOTIC RESISTANCE

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### Emerging resistance to older antibiotics in Gram-negative pathogens

Antimicrobial resistance in Gram-negative pathogens in both hospitals and the community is an emerging and serious global public health threat. Carbapenems have been the major therapeutic option for infections caused by resistant Enterobacteriaceae including those producing extended spectrum  $\beta$ -lactamases. However, the increasing prevalence of carbapenemases, enzymes that deactivate carbapenems and most other  $\beta$ -lactam antibiotics, among Enterobacteriaceae has precipitated the re-introduction of 'old' antibiotics like the polymyxins. Expectedly, increasing use of the polymyxins such as colistin has led to the global emergence of resistance for this antibiotic as well. In this respect, nitrofurantoin is another 'old' antibiotic that has been used for decades for the treatment of urinary tract infections in the community, but clinically significant resistance in *Escherichia coli* remains yet uncommon. With these viewpoints, this talk will address to the molecular epidemiology and to the mechanisms underlying emerging resistance to these antibiotics in relation to their mechanisms of action.

### Biography

Professor Surbhi Malhotra-Kumar is a clinical and molecular microbiologist, actively involved in the development of high-throughput and POC diagnostic assays for hospital and community pathogens. Using state-of-the-art molecular techniques, she is studying the impact of antibiotic use at the individual level and the role of virulence factors in biofilm formation as well as utilising metagenomics to study bacterial pathogenetic mechanisms and antibiotic resistance.

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