

Annual Conference on

# MICROBIAL PATHOGENESIS, INFECTIOUS DISEASE, ANTIMICROBIALS AND DRUG RESISTANCE

August 23-24, 2017 | Toronto, Canada

## ***Pseudomonas* phage inhibition of *Candida albicans***

Hasan Nazik<sup>1,2</sup>, Lydia-Marie Joubert<sup>2</sup>, Patrick R Secor<sup>3</sup>, Jolien Sweere<sup>2</sup>, Paul L Bollyky<sup>2</sup>, Gabriele Sass<sup>1</sup>, Lynette Cegelski<sup>2</sup> and David A Stevens<sup>1,2</sup>

<sup>1</sup>California Institute for Medical Research, USA

<sup>2</sup>Stanford University Medical School, USA

<sup>3</sup>University of Montana, USA


**P***seudomonas aeruginosa* (Pa) and *Candida albicans* (Ca) are major bacterial and fungal pathogens in immunocompromised hosts, and notably in the airways of cystic fibrosis patients. Bacteriophages of Pa physically alter biofilms, and have been recently shown to inhibit biofilms of *Aspergillus fumigatus*. To understand the range of this viral-fungal interaction, we studied Pa phages Pf4 and Pf1, and their interaction with Ca biofilm formation and preformed Ca biofilm. Both forms of Ca biofilm development, as well as planktonic Ca growth, were inhibited by both phages. The inhibition of biofilm was reversed by the addition of iron, suggesting the mechanism of phage action on Ca is denial of iron. Birefringence studies on added phage showed an

ordered structure of binding to Ca. Electron microscopic observations indicated phage aggregation in biofilm extracellular matrix. Phage-fungal interactions may be a feature with several pathogens in the fungal kingdom.

### **Speaker Biography**

Hasan Nazik has completed his undergraduate degree at Istanbul University, School of Medicine-Istanbul/Turkey in 2001, and his Microbiology Residency education at the same University in 2005. He is a Visiting Scholar at California Institute for Medical Research/Stanford University for three years. He has published more than 40 papers in scholarly journals and has been continuing the research on bacterial-fungal interactions.

e: [hasannazik01@gmail.com](mailto:hasannazik01@gmail.com)

 Notes: