

# DSV Seminars 2019



UNIVERSITÀ  
DEGLI STUDI DI TRIESTE



DIPARTIMENTO DI  
SCIENZE DELLA VITA

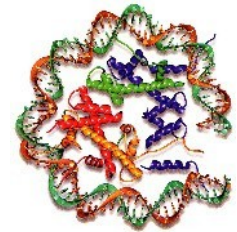
## *PhD Program in Molecular Biomedicine*

Thursday, March 7<sup>th</sup> 2019 – 2:30 p.m.

Seminar room, I floor, Q Building – Via Giorgieri 5

### **Prof. Henk P. Haagsman**

Department of Infectious Diseases and Immunology  
Faculty of Veterinary Medicine  
University of Utrecht, The Netherlands



### **Immunomodulatory antimicrobial peptides: biology and applications**

#### **Abstract**

Antibiotic-resistant bacteria are a worldwide growing problem, leading to approximately 25,000 deaths yearly in the EU alone. Antibiotics are also used a lot in veterinary medicine adding to the problem of resistance. Currently, few novel antibiotics are under development and most of these are modifications of existing drug classes and are considered short-term solutions. Therefore, there is an urgent need for alternatives in order to fight bacterial infections in humans and animals. In our research group we focus on host defense peptides (HDPs), important innate immune effector molecules. HDPs display direct antimicrobial activity and have immunomodulatory properties. Work will be presented that shows that HDPs are effective prophylactically in several models of bacterial infections (chicken, mouse, zebrafish). Administration of HDP-derived peptides may increase the threshold for use of antibiotics in farm animals. Furthermore, it was found that HDPs regulate the inflammatory response, especially in the context of pulmonary infections. Experiments will be presented that show that HDPs prevent excessive inflammation caused by bacterial products. Finally, work will be presented about newly developed antibacterial compounds, termed 'PepBiotics' that have been designed to treat pulmonary infections.

