



LECTURE SERIES & WORKSHOPS

INFECTION & IMMUNITY

21

JAN. 2016

Thursday



LECTURE

Lycée Technique
d'Esch/Alzette
Salle de Projection *

1.00 - 2.30 pm

WORKSHOP *

House of BioHealth
Room Françoise
Barré-Sinoussi

3.00 - 4.30 pm

* Registration is mandatory
by sending an email to
florence.henry@lih.lu



SPEAKER

Prof. Seppo MERI
MD, PhD

Professor of Immunology,
Head of the Department of
Bacteriology and Immunology,
University of Helsinki

Chief Physician, Head of
Microbiology Research at the
Helsinki University Hospital
Laboratory (HUSLAB), Finland

HOST:

Department of Infection
and Immunity

RESPONSIBLE LIH SCIENTIST:

Prof. Markus Ollert
(markus.ollert@lih.lu)

COMPLEMENT EVASION BY MICROBES

ABSTRACT

Infections pose a global threat because of spread of antibiotic resistance. Elucidation of microbial genomes provides new opportunities to tackle virulence mechanisms of pathogenic microbes and new immune-based interventions. We have been analyzing immune evasion mechanisms of important pathogens, like *Borrelia*. The presentation will describe mechanisms that pathogens use to escape innate immunity, particularly the complement system. This information will be important in developing new vaccines and ways to overcome microbial resistance to complement. The particular microbes we have been working on include *Borrelia burgdorferi*, Meningococcus, Pneumococcus, Salmonella, Yersinia,

Escherichia coli and *Plasmodium falciparum*. The studies have been extended also to mosquitoes to find out why human blood does not destroy vectors for malaria and dengue fever. As an example of potential applications, new vaccines against group B Meningococcus exploiting a complement factor H binding protein have been developed. Factor H (FH) is an important inhibitor of complement. Mutations in FH predispose to severe human diseases. An example is hemolytic uremic syndrome, where complement attacks self cells in contact with blood plasma (blood cells and endothelial cells). Thus, the same mechanisms we use for our own protection are used by microbes to escape immune attack.

* Opposite Luxembourg Institute of Health, House of BioHealth,
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