

PREDNÁŠKA

‘Seminar Speaker Series’
s občerstvením

prednáša

Dr. Steven Bryden

Postdoctoral researcher at the MRC-University of Glasgow Centre for Virus Research

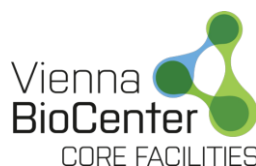
Skin immunity to mosquito borne viruses

Impacts of the host inflammatory response to
mosquito bites on arboviral disease
progression

3. 3. 2020 o 13:30

veľká zasadačka Virologický ústav BMC SAV

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Seminar Speaker

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RESEARCH PROJECTS

- **Host Inflammatory response to mosquito borne virus infections** – In the lab of Dr. Clive McKimmie (University of Leeds, UK), we are interested in the mammalian host immune response to biting mosquitoes and how this impacts the clinical outcome of mosquito borne virus infections.
- **Skin antiviral responses to arthropod borne virus infections** – We and others have shown that inflammatory and antiviral responses in skin, at mosquito bite sites, have a determining role on the outcome of mosquito borne virus infections. This project looks into the potential of augmentation of skin anti-viral responses as a potential therapeutic strategy against these infections.
- **The role of NSs in the pathogenesis of tick-borne severe fever with thrombocytopenia syndrome virus (SFTSV)** – SFTSV is an emerging tick borne phenuivirus of medical importance. This project investigates the important role of the non-structural S (NSs) protein in determining disease severity.
- **Vaccine candidates for SFTSV** – With Funding from the BBSRC and the UK department of health, this projects investigates the potential of live attenuates SFTSV and an SFTSV virus like particle (VLP) system as potential vaccine candidates.

BIO

2010 – 2014: BSc in Immunology at the University of Glasgow.

2014 – 2018: PhD in Immunology at the University of Leeds (Clive McKimmie and Gerard Graham).

2018 – present: Postdoctoral researcher in Prof. Alain Kohls lab at the University of Glasgow, Centre for virus research (CVR).

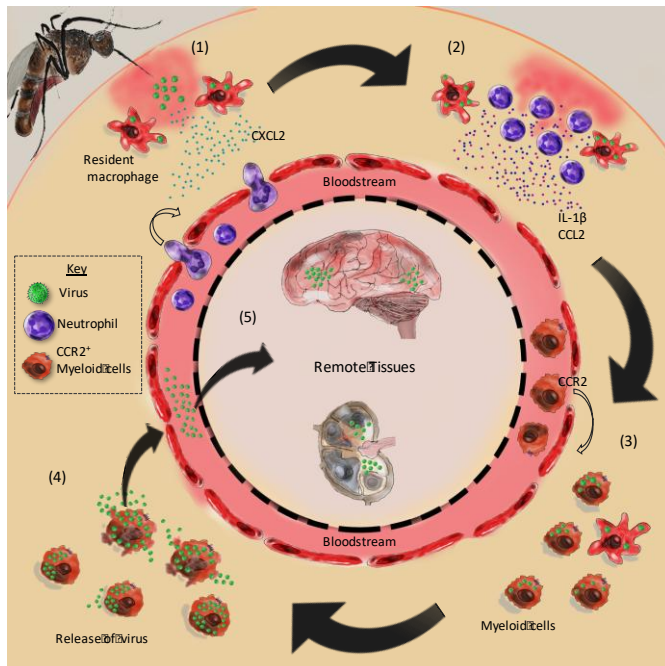
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SEMINAR ANNOTATION

Skin immunity to mosquito borne viruses

Steven Bryden



The burden of mosquito-borne viral disease is profound. In recent years there has been a rapid increase in both the incidence and geographic range of such diseases. Globalisation has allowed more opportunities for the spread of infections as inter-continental commerce, travel and migration increases. In addition, climate change is enlarging the geographic range of endemic viruses and their vectors. Medically important viruses spread by arthropods (arboviruses) include the chikungunya, yellow fever and dengue viruses, which together infect millions of people each year. Aedes mosquitoes are the primary vector. Temperate climates once confident in their isolation from substantial arbovirus epidemics are now affected, as witnessed by the recent outbreaks of these viruses. Arboviruses

also infect economically important farm animals and thus pose an increasing threat to both our food security and human health. Critically, due to a myriad of complex factors including our inability to predict the timing, aetiology and location of often explosive outbreaks and the large number of genetically diverse viruses, no antiviral treatment options and very few effective vaccines exist. Our research focusses on common aspects of mosquito borne virus infection (1) the mosquito bite/vector factors and (2) skin type I IFN responses in hope to find new pathways which can be targeted therapeutically. We have demonstrated that host inflammatory responses at the mosquito bite site have a determining impact on viral replication, dissemination to sites remote from the bite site and the clinical outcome of infection. We therefore suggest that mosquito bite sites presents an attractive target for therapeutic intervention.

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