

Murine models of dengue and their utility for drug and vaccine testing

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Dengue (DEN), the most serious arthropod-borne viral disease, manifests as a mild febrile illness to life-threatening hemorrhage and vascular leakage. The development of an animal model has long been recognized as a major roadblock in understanding dengue pathogenesis and validating therapeutic and prophylactic strategies prior to clinical stages. Humans and mosquitoes are the natural hosts for dengue virus (DENV) in its urban cycle. While most immunocompetent mice are not susceptible to infection from all four DENV serotypes, type I & II interferon deficient mice may develop asymptomatic transient viremia and in few cases, relevant clinical manifestations. Furthermore, it is possible to reproduce the antibody-dependent enhancement of disease severity (ADE) in this mouse model. In this conference, we will present the various mouse models of dengue currently available in our laboratory, ranging from asymptomatic transient viremia to lethal models associated with vascular leakage or liver damage, two relevant clinical manifestations. We will also present our unique models of ADE mediated by maternal antibodies acquired during both gestation and breastfeeding. This mouse models platform has made our group visible to the Dengue research scene and has attracted a significant number of collaborations, licensing and research service contracts with both industry partners and public institutions for evaluating the *in vivo* efficacy of prophylactic and therapeutic candidates.

Biography

Alonso Sylvie has completed her PhD in University Claude Bernard Lyon I, France and pursued her Postdoctoral studies at the Pasteur Institute of Lille, France and Cornell University, NY, USA. She has established laboratory at NUS, Department of Microbiology and Immunology. She is also a Member of the Immunology program at the Life Sciences Institute, NUS. Her main interests lie in host-pathogen interactions with a focus on Dengue, Tuberculosis and Enterovirus 71. She has published more than 60 peer-reviewed papers in reputed journals and has been serving as an Editorial Board Member of PLOS ONE and Frontiers in *Immunotherapies and Vaccines*.

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