



Department of Biomedical Sciences

香港城市大學
City University of Hong Kong

Viral Determinants that Drive Dengue Virus Fitness and Virulence

 3:00 pm - 4:00 pm, 17 September 2025 (Wednesday)

 P4701, 4/F, Yeung Kin Man Acad Building, CityUHK

Abstract

Despite intensified research efforts, our understanding of dengue pathogenesis remains very patchy. Specifically, while the genetic diversity among dengue virus (DENV) strains has long been recognized, the resulting heterogeneity in virulence mechanisms has only started to be acknowledged. It hence appears that a one-size-fits-all treatment approach is not adequate to combat dengue in various parts of the world where different DENV strains circulate.

Our laboratory has been studying the molecular determinants that drive the fitness and virulence of DENV strains that circulate in Singapore and the region, in particular Cosmopolitan DENV2 that have been prevalent for decades and have caused repeated outbreaks. In my lecture, I will describe some of our recent work which has led to the discovery of novel immune evasion strategies by Cosmopolitan DENV2 strains in their mammalian host.

Biography

Dr Alonso obtained her PhD degree in Microbiology and Molecular Biology from Universite Claude Bernard Lyon I (France). She then continued her post-doctoral training at Pasteur Institut de Lille (France) where she developed bacterial vaccine delivery systems, followed by another 2 years at Cornell University (NY, USA) where she studied the molecular pathogenesis of tuberculosis. In 2004, she was awarded the Lee Kuan Yew post-doctoral Fellowship and joined the Department of Microbiology at the National University of Singapore (Singapore). She was recruited as an Assistant Professor in 2007 and promoted to Associate Professor with tenure in 2013. For the past 15 years, Dr Alonso's research team has studied the host-pathogen interactions during viral infections, including Hand, Foot and Mouth Disease (HFMD) and Dengue. She has also pursued her long-time interest in vaccine development against viral diseases.



Dr. Sylvie Alonso

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