SIgN Immunology Seminar



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Dengue Vaccine Candidate with a Difference

Host
Dr Katja Fink
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Date
Wednesday 7 June 2017

Time
11am – 12pm

Venue
SIgN Seminar Room
Immunos Building
Level 4
Biopolis

Dengue is an arboviral disease caused by four dengue viruses. Efficacy trial data and follow-up investigations of a live attenuated vaccine suggest that the induction of disease-enhancing antibodies may compromise safety and efficacy of the vaccine. We report a novel non-replicating Pichia pastoris-expressed dengue immunogen, DSV4, based on DENV envelope protein domain III (EDIII), which predominantly contains serotype-specific neutralizing epitopes, lacks the major major epitopes implicated in disease enhancement and interacts with the host receptor. DSV4 was designed by in-frame fusion of EDIII of all four dengue serotypes and hepatitis B surface (S) antigen and co-expressed with unfused S antigen to form mosaic virus-like-particles (VLPs). These VLPs induced potent neutralizing antibodies against all four DENV serotypes and multiple genotypes in mice and macaques and did not discernably promote disease enhancement in AG129 mice. DSV4 has a significant potential to emerge as a safe, efficacious and inexpensive dengue vaccine candidate