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Temasek External Monthly Seminar

TEMASEK LIFESCIENCES LABORATORY

ALL ARE WELCOME

11 June 2018 (Monday), 3.00pm
The Auditorium (Level 1)

Hosted by: Dr Chua Kaw Bing

Elucidation of immune responses to dengue virus in newly developed marmoset model

Dr Ichiro Kurane
Ex-Director General, National Institute of Infectious Diseases, Japan

Many mosquito-borne viruses cause serious infectious diseases in humans. Among these viruses, dengue virus is the most serious threat to humans in the world. Dengue fever has the highest annual number of patients among mosquito-borne viral diseases. The areas where dengue virus is serious health problem have been expanding. Although dengue virus is mainly endemic in tropical and subtropical regions, it also cause outbreaks also in the temperate zone. Vaccines are available only in limited countries. Long history of research has been devoted to this disease and much knowledge has been accumulated; however, there are still many questions to be addressed. Presence of 4 serotypes of dengue virus, which cause the same disease, is one of the major factors that make the understanding of the pathogenesis of dengue virus infection and vaccine development quite complex and difficult. Furthermore, the absence of animal models that completely reflect human dengue virus infections has hindered the understanding of the severe form of dengue hemorrhagic fever. One the other hand, scientific knowledge that has been accumulated in dengue virus research also contribute to the understanding of other mosquito-borne viral diseases. In this talk, some of the key developments by our group are introduced and the application of these findings to the understanding of dengue fever/dengue hemorrhagic fever are discussed.

Ichiro Kurane, MD, PhD, is a citizen of Japan. He was Ex-Director General, National Institute of Infectious Diseases. He received his MD and PhD degrees from the Tohoku University School of Medicine, Sendai, Japan. His main scientific specialty is mosquito-borne viruses. He has published 405 papers in English and 114 in Japanese. He served as the presidents of the Japanese Society for Virology, the Japanese Society for Vaccinology and the Japanese Biological Safety Association.

Recent Publications:

1. Kurane, I., Matsutani, T., Suzuki, R., Takasaki, T., Kalayanarooj, S., Green, S., Rothman, A.L. and Ennis, F.A.: T-cell responses to dengue virus in humans. Tropical Medicine and Health. 39 (4 Supplement): 45-51, 2011
2. Moi, M.L., Lim,C.K., Kotaki, A., Takasaki, T. and Kurane, I.: Detection of higher levels of dengue viremia using Fc{gamma}R-expressing BHK-21 cells than Fc{gamma}R-negative cells in secondary infection but not in primary infection. Journal of Infectious Diseases. 203(10): 1405-1414, 2011.
3. Moi, M.L., Ami, Y., Muhammad Azami N.A., Shirai, K., Yoksan, S., Suzaki, Y., Kitaura, K., Lim, C.K., Saijo, M., Suzuki, R., Takasaki, T. and Kurane, I.: Marmosets (Callithrix jacchus) as a non-human primate model for evaluation of candidate dengue vaccines: induction and maintenance of specific protective immunity against challenges with clinical isolates. Journal of General Virology 98:2955–2967, 2017