ImmunoTools *special* Award 2014

Panisadee Avirutnan, MD, PhD
Head

Division of Dengue Hemorrhagic Fever Research, Department of Research and Development, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, THAILAND

Dengue Research

Dengue is the most important mosquito-transmitted viral disease in the world. There are four serotypes: DENV-1, DENV-2, DENV-3 and DENV-4. DENV infection causes a spectrum of symptoms from asymptomatic or mild undifferentiated fever, classical dengue fever (DF), to severe and potentially fatal disease, dengue hemorrhagic fever or dengue shock syndrome (DHF/DSS). The signs of DHF are thrombocytopenia, severe hemorrhagic manifestations, and indications of plasma leakage, leading to hypovolemic shock (DSS), which requires appropriate treatment to prevent death. Severe disease development causes significant morbidity and mortality, mainly in children, particularly in tropical and subtropical countries. An estimated 390 million dengue infections occur worldwide and more than 500,000 people with severe disease require hospitalization annually. DHF/DSS is associated with secondary infection and the critical period appears at the time when viremia is declining thus suggesting that DHF/DSS is a consequence of immunopathology. Currently, no vaccine or effective anti-viral drugs against DENV are available. An early and reliable diagnosis is important; moreover superior clinical management and supportive care along with proper fluid replacement are essential to achieve a good outcome in DENV infection.

The Division of Dengue Hemorrhagic Fever Research (DDHFR), previously known as the Molecular Biology Unit was first established in 1994 and operates under the Department of Research and Development, Faculty of Medicine Siriraj Hospital. The objectives of the DDHFR are to utilize the academic, clinical and public health network within the medical faculties and affiliated hospitals to conduct basic bio-medical research in dengue hemorrhagic fever and dengue viruses and apply the information and reagents for vaccine, diagnostic and therapeutic developments. The ultimate goal of these collaborative research networks is to reduce the dengue disease burden in Thailand, with implications for other parts of the world as well,

especially in Southeast Asian countries where dengue is highly endemic and death from dengue infection is still a major health and economic concern.

The ImmunoTools reagents will be useful for both *in vitro* and *in vivo* studies using our high quality of clinical specimens and databases of patients with different degrees of disease severity collected at multiple time points during an acute phase of DENV infection to better understand the immunopathogenesis of DHF. A potentially important spin off is to identify a biological marker (or markers) that can differentiate patients with mild DF from those with potentially severe DHF/DSS, particularly at an early phase of infection.

ImmunoTools *special* AWARD for **Panisadee Avirutnan**

includes 25 reagents

FITC - conjugated anti-human CD63, CD66e, Control-IgG1, Annexin V,

PE - conjugated anti-human CD19, CD41a, CD45, CD105, CD35,

PerCP - conjugated anti-human CD3, CD14, CD235a,

APC - conjugated anti-human CD19, CD56, Annexin V,

human ELISA-set for 96 wells: human IL-8, human IL-10, TNF-a (each 3 reagents),

recombinant human cytokines: rh TNFα

DETAILS more AWARDS