

## Thai Researchers won Gold Medal Award and 3 more Awards from 2014 TAIPEI INT'L INVENTION SHOW & TECHMART



**ขอแสดงความยินดี**

นัก รองศาสตราจารย์พงศิราม รามสูต  
ดร.ปานมาทิพย์ พิทักษ์กิจจะกุล  
ดร.ชวลิตทิพย์ พิพัฒน์มานุภรณ์  
และทีมวิจัย ผลงาน ไมโนโคเอลแอนติบอดีมนุษย์สำหรับรักษาโรคไข้เลือดออก\*

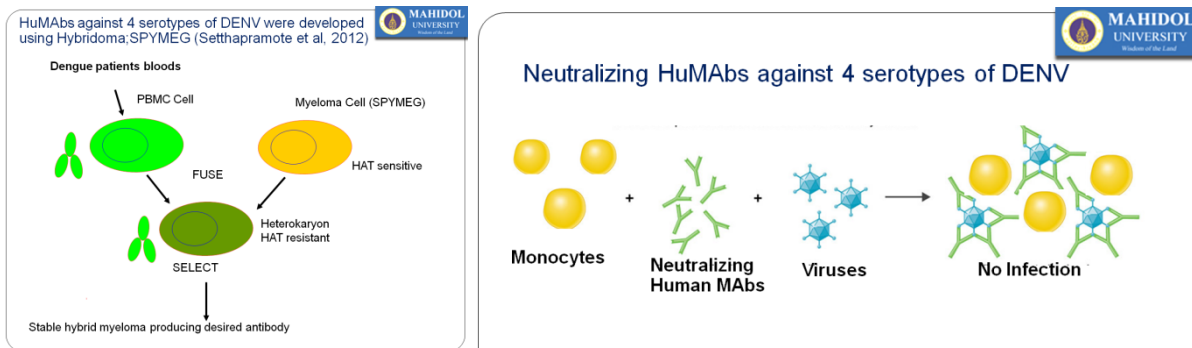
ในโอกาสได้รับ  
"รางวัลเหรียญทองสิ่งประดิษฐ์ไต้หวัน 2014"  
"รางวัลพิเศษจากสมาคมอุตสาหกรรมการประดิษฐ์ไต้หวัน 2014"  
และ "รางวัล Leading Innovation จากสมาคมสิทธิบัตรนานาชาติ"  
เนื่องในโอกาสประกวดและจัดแสดงนิทรรศการ  
งาน "2014 INST : The 10th Taipei International Innovation Show & Technomart"  
ณ ไทเป ประเทศไต้หวัน เมื่อวันที่ ๑๖ - ๒๒ กันยายน ๒๕๕๗

**Congratulations to**  
Assoc.Prof. Pongrama Ramasoota  
Dr. Pannamthip Pitakajakul  
Dr. Chonlatip Pipattanaboon  
and research team of "Monoclonal Antibody against Malaria"  
for receiving "Taiwan Innovation Gold Medal Award 2014"  
"Taiwan Industrial Association Special Award 2014" and  
"Leading Innovation Award" from International patent association  
in the 10th Taipei International Innovation Show & Technomart  
At Taipei, Taiwan, during 16-22 September 2014

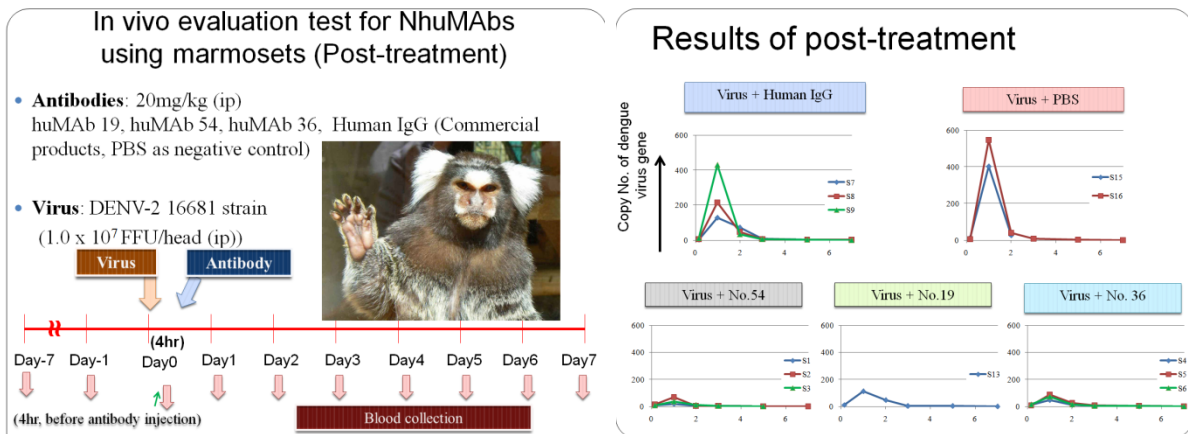


On September 19<sup>th</sup>, 2014. at TAIPEI INT'L INVENTION SHOW & TECHNOMART, Taiwan, from two thousand inventions around the world, Associate Professor. Dr. Pongrama Ramasoota, Dr. Pannamthip Pitaksajjakul, and Dr. Chonlatip Pipattanaboon, from Center of Excellence for Antibody Research (CEAR), Faculty of Tropical Medicine, Mahidol University, won and received the Gold Medal Award from Minister of Science & Technology, Taiwan, from their invention “Therapeutic Human Monoclonal Antibodies against 4 serotypes of Dengue virus”. They also received 3 more Invention awards from World Invention Intellectual Property Association (WIIPA), International Intellectual Property Forum (IIPF), Taiwan Invention & Innovation Industry Association (TIIIA), respectively.

Since DENV infection is the World public health problem and until now there have no specific and effective treatment for DENV, so Dr. Pongrama and his team has developed the world first time “Neutralizing Human Monoclonal antibody (NhuMAB) that can block DENV infection in host cell. This NhuMABs was developed using Thai DENV patients Peripheral Blood Mononuclear cell (PBMC) that fused with novel myeloma cell namely “SPYMEG”. The fused Hybridoma cells could have functions of human antibody production from B cell and fast growing from Myeloma cell. Then, NhuMAB produced from each cultured hybridoma cell, was screen with 4 serotypes of DENV. Finally, 3 candidate NhuMABs with more than 90% NT were obtained.



Each candidate NhuMABs could completely neutralized 4 serotypes of DENV clinical isolates *in vitro*. Moreover, for *in vivo* experiment in DENV challenged monkeys, showed that candidate NhuMABs completely eliminated DENV infection within 2 days.

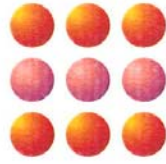


The invention of these NhuMAbs against DENV was previously won outstanding Research Award from National Research Council of Thailand in June, 2014. This invention has been issued for USA patents and 8 more countries. Since these NhuMAbs will be further apply as therapeutic reagent in human, so NhuMAb production as recombinant IgG expressed in mammalian CHO cell, which is accepted by FDA for human used, were prepared from each Hybridoma cell.

More details of these research works can be seen from our publications and patents;

- Pitaksajjakul P, Benjathummarak S, Pipattanaboon C, Wongwit W, Tamaki Okabayashi T, Kuhara M, Misaki R, Fujiyama K, **Ramasoota P**. Antibody germline characterization of cross-neutralizing human IgGs against 4 serotypes of dengue virus. Biochem Biophys Res Commun. 2014; pii: S0006-291X(14)00410-0.
- Chaichana P, Okabayashi T, Pui-prom O, Sasayama M, Sasaki T, Yamashita A, **Ramasoota P**, Kurosu T, Ikuta K. Low levels of antibody-dependent enhancement in vitro using viruses and plasma from dengue patients. PLoS One. 2014 Mar 18;9(3):e92173. doi: 10.1371.
- Pipattanaboon C, Sasaki T, Nishimura M, Setthapramote C, Pitaksajjakul P, Leungwutiwong P, Limkittikul K, Pui-prom O, Sasayama M, Chaichana P, Okabayashi T, Kurosu T, Ono KI, Ramasoota P\*, Ikuta K\*. Cross-reactivity of human monoclonal antibodies generated with peripheral blood lymphocytes from dengue patients with Japanese encephalitis virus. Biologics: Targets and Therapy 2013;7:175-186.
- Sasaki T, Setthapramote C, Kurosu T, Nishimura M, Asai A, Omokoko MD, Pipattanaboon C, Pitaksajjakul P, Limkittikul K, Subchareon A, Chaichana P, Okabayashi T, Hirai I, Leungwutiwong P, Misaki R, Fujiyama K, Ono K, Okuno Y, Ramasoota P, Ikuta K. Dengue virus neutralization and antibody-dependent enhancement activities of human monoclonal antibodies derived from dengue patients at acute phase of secondary infection. Antiviral Res. 2013 Jun;98(3):423-31.
- Noda M, Yamashita A, Masrinoul P, Punkum C, Pipattanaboon C, Setthapramote C, Sasaki T, Sasayama M, Kurosu T, Ikuta K, **Ramasoota P**, Okabayashi Limited cross-reactivity of mouse monoclonal antibodies against dengue virus capsid protein among four serotypes. Biologics Target & Therapies. 2012;6:409-16.

6. Setthapramote C, Sasaki T, Puiprom O, Limkittikul K, Pitaksajakul P, Pipattanaboon P, Sasayama M, Leuangwutiwong P, Phumratanaprapin W, Chamnachanan S, Kusolsuk T, Jitmittraphap A, Asai A, Arias JF, Hirai I, Kuhara M, Okuno Y, Kurosu T, **Ramasoota P**, Ikuta K. Human monoclonal antibodies to neutralize all dengue-virus serotypes using lymphocytes from patients at acute phase of the secondary infection. Biochem Biophys Res Commun. 2012;423:867-872.
7. **USA patent;** Dengue-virus serotype neutralizing antibodies: WO 2013035345 A2 [www.google.com/patents/WO2013035345A2](http://www.google.com/patents/WO2013035345A2)
8. **USA patent;** Antigenic peptide derived from dengue virus WO 2014064943 A1 <https://www.google.com/patents/WO2014064943A1>



**IIPNF**

國際知識產權交流會

**International Intellectual Property Network Forum**

# Leading Innovation Award

Presented to

**Assoc. Prof. Pongrama Ramasoota and Team**

for excellent invention of

**Therapeutic Human Monoclonal Antibodies Against 4 Stereotype of Dengue Virus**

exhibited at

 **2014 TAIPEI INT'L** September 18-21 2014  
**INVENTION SHOW & TECHNOMART**

**Wiparat De-ong, PhD**  
Director, Division of Research  
NRCT, Bangkok, Thailand  
National Research Council of Thailand

**Soung-Mo Hong**  
President - AIA, South Korea  
Asia Invention Association

**Moonsuk Chang**  
Chairman - TISI/AS, Canada  
Toronto Interferral Society of Innovation &  
Advance Skills

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Associazione Nazionale Degli Inventori

**Hsieh Hsin-Ming**  
WIIPA - President, Taiwan, R.O.C.  
World Invention Intellectual Property Association

**Prof. Michal Szota**  
Wiceprezes AEI, EU  
Association European Inventors

**Ms. Kam Sau Ngai**  
HKIA - Executive Secretary  
Hong Kong Invention Association Ltd.

**Lok Kam Lam (Dr.) Patrick**  
IIPNF - President / Founder

# TIIA OUTSTANDING DIPLOMA

Presented to

Assoc.Prof.Dr. Pongrama Ramasoota & Team from Mahidol University

TIIA AWARD FOR THE EXCELLENT INVENTION

Therapeutic Human Monoclonal Antibodies against 4 Serotypes of Dengue Virus

at

 **2014 TAIPEI INTERNATIONAL INVENTION SHOW & TECHNOMART**

September 18-21, 2014, Taipei, Taiwan

James Su

理事長 **蘇本鴻**

Present of Taiwan Invention & Innovation Industry Association

