

# A Forum On

*International Collaboration on Research Development  
on the **Efficacy and Potential Applications of***

**Melaleuca Alternifolia Concentrate (MAC)**

*for the Treatment of **Dengue Fever** and  
a Range of Population Health Issues*

17-19 September 2007

*at*

Griffith University, Nathan,  
Queensland, AUSTRALIA

*Sponsored by*

**NeuMedix Biotechnology Pty Ltd**

# INTRODUCTION

## Forum Purposes

The world is increasingly endangered by the threats of emerging and re-emerging infectious diseases such as Dengue fever, avian bird flu, and multi-drug-resistant TB. Dengue fever, in particular, is recognised as a serious threat to the world's population as there is not yet a proven effective treatment. WHO and scientists around the world estimate that around 3 billion people globally will be at risk from Dengue fever due to climate change, urbanization, and world trade. This is a cause of global concern, and the search for treatment solutions is both urgent and important.

An Australian plant extract, Melaleuca Alternifolia Concentrate (MAC), with demonstrated safety for human consumption, is potentially the answer, and preliminary studies have shown promising results. However, much research, in addition to clinical trials, is required to examine and verify its efficacy and mechanism for disease treatment before it can be used to serve population health needs.

In order to facilitate communication and international collaborations necessary for information sharing and exchange for research and the advance of knowledge, the Centre for Environment and Population

Health, Griffith University is hosting a three-day Forum to explore the efficacy and potential applications of **Melaleuca Alternifolia Concentrate (MAC)** for the treatment of a range of population health issues with an initial focus on Dengue Fever.

With the sponsorship of NeuMedix Biotechnology Pty Ltd, this Forum will bring together researchers, academics, relevant government and health practitioners, and industry representatives to learn from each other and engage in dialogue for future collaborations.

The aims of this Forum are to:

- share information and knowledge on research and development in the application of MAC for dengue fever;
- discuss potential research development in the application of MAC on a range of health issues;
- explore and facilitate project development for future international collaborations.

Professor Cordia Chu  
*Forum Convener*

# Centre for Environmental & Population Health (CEPH) Participants

## Griffith University, Australia



**Emeritus Professor Des Connell**, (BSc. MSc. PhD QLD U)

With a background in Organic Chemistry and Toxicology, he is a distinguish scientist with

eight books and 150 research papers in International Journals.



**Professor Cordia Chu**

(BSSc.,MA., PhD UQ) Director, CEPH, and Coordinator, Peking University and Griffith University International Centre for Development, Environment and Population Health (IcDEPH).



**Dr Peter Davy**, Deputy-Director of the Centre for Environment and Population Health, is a Senior Lecturer in Environmental Health (EH) in the Faculty of Environmental Science, Griffith University.

## ATTENDEES

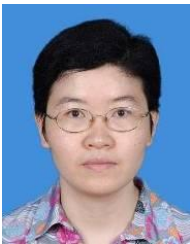
### Dengue Researchers



**Professor Lifang Jiang** (M.D., MScMed) is the Director of the Department of Microbiology, Zhongshan School of Medicine, Sun Yat-sen University in Guangzhou. She has held the position of Department Head since 1993.



**Doctor Kao-Jean Huang** (B.S., M.S., Ph.D., Chengkung) graduated from the National Cheng Kung University in Taiwan with a BSc(1996) in Biology, an MSc (1998) from Department of Immunology and Microbiology, and a PhD (2005) from Department of Basic Medicine.



**Professor Junmei Zhou** (M.D. Tongji, PhD. Zhongshan) is an Associate Professor in the Department of Microbiology Zhongshan School of Medicine, Sun Yatsen University in Guangzhou.



**Professor Sutaryo** (M.D., PhD, Gadjah Mada). As a medical doctor, paediatrician, and consultant, since 1973, Prof. Sutaryo has served at Gadjah Mada University as Lecturer at Department of Child Health, and Vice Dean for Academic Affairs in Faculty of Medicine.



**Professor Huan-Yao Lei** (BSc., PhD) of Department of Microbiology and Immunology, College of Medicine, Taiwan National Cheng Kung University, has a PhD. in Immunology from Northwestern University, USA and a B.S. in Agricultural Chemistry, National Taiwan University.



**Professor Umar Fahmi Achmadi** (MD, Indonesia; MPH, Philippines; PhD, Griffith). Professor, School of Public health, University of Indonesia; and Former Director-General of His research expertise covers many issues in public health and environmental pollution as well as communicable disease control in particular in the developing Communicable Disease Control and Prevention and Environmental Health, Ministry of Health from 1997-2005).

## ATTENDEES

### Dengue Researchers



**Dr Arief Budi Witarto**  
(B.Eng., M.Eng., PhD.)  
Head of Protein  
Engineering Research  
Group, Research Center  
for Biotechnology,

Indonesian Institute of  
Sciences (LIPI), and Chief Scientist, Protein  
Indonesia Institute, Jawa Barat, Indonesia.



**Dr Leonard Nainggolan** is a  
medical doctor specializing in  
Internal Medicine. His main  
interest is in Dengue  
Hemorrhagic Fever in particular  
and Tropical Disease in  
general.



**Prof Lukman Hakim, PhD** (MSc,  
UNSW; PhD, UQ).  
Head, Laboratory of  
Pharmacology and Toxicology,  
Department of Pharmacology  
and Clinical Pharmacy, Gadjah  
Mada University, Yogyakarta,  
Indonesia.



**Prof Chu Quoc Truong** (MD,  
PHD Hanoi U) Director,  
National Hospital of  
traditional Medicine of  
Vietnam Prof Chu received his  
PhD from Hanoi Medical  
University majoring in  
traditional medicine and also  
qualified as Specialized Doctor - Level II of  
Internal Medicine since 2001.

# ATTENDEES

## RESEARCHERS ON OTHER VIRUS: HBV, Cancer, Herpes Simplex 2



**Prof Guiqiang Wang** (B.S., Shenyang; M.D. Harbin) is the Chairman of Department of Infectious Diseases, the Director of Center for Liver Diseases, and Director of Clinical Trial Base for liver

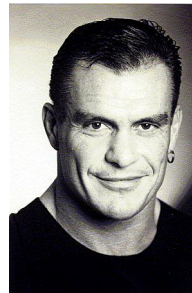
diseases at Peking University First Hospital.



**Associate Prof Hou Xiaohui**  
China Centre for Disease Control and Prevention  
**(China CDC)**



**Dr Yan Wang** (BMSc, M MSc, PhD), Physician in Charge, Department of Infectious Disease, Peking University First Hospital, Beijing.



**Mr Paul Haslam**, Scientific Consultant, NeuMedix Health Australasia Pty Ltd  
Mr. Haslam's roles are to manage specific projects in the biotechnology portfolio, assist in scientific evaluations and facilitate regulatory compliance.



**Dr Steve Ralph** is Deputy Director, Genomics Research Centre, School of Medical Sciences at Griffith University, and has researched in the cancer field for over 20 years, working at the Salk Institute

(USA) and Ludwig Institute for Cancer Research, Melbourne.

**Mr. Mark Webb** (BSc.), Biochemistry & Plant Biology, Diploma of Aromatherapy, Author of *"Bush Sense, A book on Australian Essential Oils"*.

# MAC FOR WOUND HEALING & ANIMAL FEEDS



**Professor Yuchang Qin** (BEng, China Agri.; MEc, Renmin; PhD, CAAS), Deputy Director General, Feed Research Institute, the Chinese Academy of Agriculture Sciences.

Professor Qin holds a BSc in Agriculture Machine Engineering, a Master in Agricultural Economy Administration, and a PhD in Feed Safety and Assessment from the Chinese Academy of Agricultural Science (2005).



**Professor Mike Tz-Chong Chou** (B.S., M.S., Ph.D.). Professor Department of Physiology, National Defense Medical Center, He has published about 30 referred papers in significant journals

and has received an Excellent Research Award from National Defense Medical Center in 1999, 2003, and an Investigator Award in 2001.



**Dr Xiaowen Lu** (BEng, MEng, Henan Ind.; PhD, Chinese Agri). Dr Lu received his PhD in Food Sciences from the Chinese Agricultural University in Beijing (2004).



**Associate Professor Wen-Hsin Huang** (B.Sc., M.S., NDMC); (Ph.D. Texas) School of Pharmacy, National Defense Medical Centre (NDMC). His research focuses on anti-inflammatory, immunomodulatory anti-

infective, and anti-cancer drug design & discovery in synthetic medicinal chemistry.

# PROGRAM

## Monday, 17<sup>th</sup> September 2007

Time	Theme	Speaker	Papers
<b>09:05 – 10:45</b>	<b>SECTION 1: Population Health Challenges and the Potential Contributions of MAC</b>		
09:05 – 09:25	Forum overview	Prof. Cordia Chu Director, CEPH, Griffith University	Research collaboration on MAC to address global health challenges
09:25 – 10:00	Keynote speaker	Dr. Max Reynolds Director, Australasia Botanical Medicine for Population Health, CEPH, GU	<i>"In the beginning"</i>
10:00 – 10:15	Speaker (Indonesia)	Prof. Umar Fahmi Achmadi School of Public Health, University of Indonesia and Adj. Prof. CEPH, GU	Research development on MAC in Indonesia
<b>10:45 – 17:00</b>	<b>SECTION 2: Research Development on Dengue Fever and the Potential Application of MAC</b>		
<b>10:45 – 12:30</b>	<b>The Disease Development of Dengue Virus</b> Chair: Prof. Des Connell, CEPH		
10:45 – 11:15	Speaker (Taiwan)	Prof. Huan-Yao Lei Department of Microbiology & Immunology, National Cheng Kung University, Taiwan	The Immuno-pathogenesis of Dengue Virus-induced Diseases
11:15 – 11:45	Speaker (Indonesia)	Dr. Leonard Nainggolan Division of Tropical Medicine, National Referral Hospital, University of Indonesia	Epidemiology and Clinical Pathogenesis of Dengue in Indonesia
11:45 – 12:15	Speaker (Indonesia)	Prof. Lukman Hakim Faculty of Pharmacy, Gadjah Mada University, Indonesia	Biological actions of MAC

# PROGRAM

## Monday, 17<sup>th</sup> September 2007

<b>13:30 – 15:00</b>	<b>In-vitro Research Findings from the Application of MAC on Dengue Fever</b> Chair: Dr. Max Reynolds		
13:30 – 14:00	Speaker (Indonesia)	Dr. Arief Witarto Centre for Emerging Disease & Environment, University of Indonesia	In-vitro study of MAC against Dengue Virus: A Study Report
14:00 – 14:30	Speaker (China)	Prof. Lifang Jiang Director of Department of Microbiology, Sun Yat-sen University, China	Study on MAC against Dengue Fever
14:30 – 15:00	Speaker (Taiwan)	Dr. Kao-Jean Huang Department of Immunology & Microbiology, National Cheng Kung University, Taiwan	The Effect of MAC on Dengue Virus
<b>15:30 – 17:00</b>	<b>Research Strategies on Clinical Treatment and Diagnosis of Dengue Fever</b> Chair: Prof. Umar Fahmi Achmadi		
15:30 – 16:00	Speaker (Indonesia)	Prof. Sutaryo Teaching Hospital, Gadjah Mada University, Indonesia	Potential use of MAC against Dengue in children
16:00 – 16:30	Speaker (Australia)	Mr. Allan Ashton Director, Australia & International Training Institute	Rapid Diagnostic kits for Dengue and other Diseases
16:30 – 17:00	Speaker (Vietnam)	Prof. Chu Quoc Truong National Hospital of Traditional Medicine, Vietnam Administration of Preventative Medicine	The Experiences of Vietnam on using Medicinal Plants to deal with Dengue Fever

# PROGRAM

## Tuesday, 18<sup>th</sup> September 2007

Time	Theme	Speaker	Papers
09:00 – 12:00	<b>Discussion: Issues Relating to Future Research and Development on Dengue Fever: Methodological Challenges and The Way Forward</b>		
09:00 – 10:15	<p><b>Panel Discussion</b>  <i>Issues relating to future research and development on dengue fever: methodological challenges and the way forward</i>            Chair: Prof. Cordia Chu, CEPH</p> <p><b>Speakers:</b>            Prof. Umar Fahmi Achmadi  <i>“Community-based Dengue Elimination Study Using MAC: A Proposal for a Multi-Centre Study in Indonesia”</i>            Dr. Leonard Nainggolan  <i>“Field Diagnostic Kit Using NS1 for the Clinical Trial?”</i></p> <p><b>Comments from other Panel Members</b>            Prof. Lukman Hakim  <i>University of Gadjah Mada, Yogyakarta, Indonesia</i>            Prof. Lifang Jiang  <i>Director of Department of Microbiology, Zhongshan School of Medicine, Sun Yet-sen University, China</i>            Prof. Huan-Yao Lei  <i>Department of Microbiology &amp; Immunology, College of Medicine, National Cheng Kung University, Taiwan</i>            Dr. Max Reynolds  <i>Director, Australasia Botanical Medicine for Population Health, Centre for Environment &amp; Population Health, Griffith University, Australia</i>            Prof. Sutaryo  <i>Paediatrician, consultant Clinical Tropical Dengue Children, Gadjah Mada University, Indonesia</i>            Prof. Chu Quoc Truong  <i>Director, National Hospital of Traditional Medicine, Vietnam</i>            Dr. Arief Witarto  <i>Centre for Emerging Disease &amp; Environment, University of Indonesia</i></p> <p><b>Discussion:</b> All participants</p>		

# PROGRAM

## Tuesday, 18<sup>th</sup> September 2007

<b>13:30 – 17:00</b>	<b>SECTION 3: Potential Application of MAC for other Population Health Challenges</b>		
13:30 – 14:00	Speaker (China)	Prof. Wang Guiqiang M.D., Chairman, Department of Infectious Diseases, Peking University First Hospital, China	HBV Infection and Present Management in China
14:00 – 14:30	Speaker (Australia)	Dr. Steve Ralph School of Medical Sciences, Griffith University, Australia	Novel Approaches to Cancer Therapy: Vaccination and MegaBac
15:30 – 15:45	Speaker (Australia)	Dr. Max Reynolds CEPH, Griffith University, Australia	A look at Virus Disease in General and Herpes Simplex 2 in particular
15:45 – 16:15	Speaker (Australia)	Mr. Mark Webb	A Report on Clinical Trials of Herpes Simplex 2
16:15 – 16:45	Speaker (Australia)	Mr. Paul Haslam NeuMedix Health Australasia Pty Ltd	The use of MAC in Decontamination of Medical Devices: A Spinal Implant Model

# PROGRAM

## Wednesday, 19<sup>th</sup> September 2007

Time	Theme	Speaker	Papers
<b>09:00 – 10:30</b>	<b>Applications of MAC: Pain Killing, Wound Dressing and Animal Health</b>		
09:00 – 09:30	Speaker (Taiwan)	Prof. Mike Tz-Chong Chou Department of Physiology, National Defense Medical Centre	Evaluation of Wound Healing Effect of MAC using Animal Model
09:30 – 10:00	Speaker (Australia)	Dr. Max Reynolds CEPH, Griffith University, Australia	Use of MAC in Replacement of Anti- Biotic in Feed Lots, Specifically in Chickens
10:00 – 10:30	Speaker (China)	Prof. Yuchang Qin Deputy Director, Feed Research Institute, The Chinese Academy of Agricultural Sciences	Animal Feed Research in the Chinese Academy of Agricultural Sciences and Potential Areas for Research Collaboration on the Application of MAC
<b>14:00 – 15:00</b>	<b>Workshop and Discussion on Research Collaborations</b>		
14:00 – 14:15	Report from Groups		
<b>15:40 – 16:40</b>	<b>Round Table Discussion: Network Building and Future Collaboration</b> Chair: Prof. Cordia Chu, CEPH		
	All participants		
16:40 – 16:50	Conclusion	Prof. Cordia Chu	Forum Summary and Recommendations
16:50 – 16:55	<i>A word from the Sponsor</i>	Mr. Michael Issakidis Director, NeuMedix Bio-Technology	Thanks and Future Commitment
16:55 – 17:00	Closing	DEAN Research SEET, Griffith University, Australia	Farewell speech