



## Leow Chiuan Herng

**Address:** Institute for Research in Molecular Medicine  
(INFORMM)

**Country:** Malaysia

### Academic qualifications

- Mar 2014      Ph.D. Degree (Medicine)  
The University of Queensland, Australia  
Thesis – Improving Malaria Rapid Diagnostic Tests (RDTs) by Developing Novel Binders of Malaria Antigens
- Aug 2006      M. Sc Degree (Pharmacy)  
Universiti Sains Malaysia, Malaysia  
Thesis – Method Development of Proteomic Analysis in Human Colon Carcinoma
- Oct 2002      B.Sc. (Hons) Degree (Microbiology)  
Universiti Putra Malaysia, Malaysia  
Thesis – Growth Performance and Enzymatic Studies of *Pleurotus ostreatus* and *Pleurotus sajor caju*
- Nov 1998      High School Degree  
Jit Sin Secondary School, Malaysia

### Employments

Senior Lecturer, Institute for Research in Molecular Medicine, Universiti Sains Malaysia, Malaysia

27<sup>th</sup> Aug 2013 to Present

Duties: Responsibilities include undergraduate teaching, research and supervision, and other administrative duties.

- To plan, coordinate and conduct applied and exploratory research projects with specialized focus on new antibody and adjuvant development.
- To enhance the reputation of university as a leading research institution by undertaking good quality research.
- To design the project direction and manage the financial of all research grants awarded.
- To engage in the teaching and practicals of graduate and undergraduate in university.
- To undertake the responsibilities of administration in the school's management system.
- To prepare technical documentation of required to achieve ISO 13485 for in vitro diagnostics (IVD) facility
- To coordinate collaboration with industry, community and university for enhancing innovation through knowledge exchange.

Achievement: I was awarded the “Award for Publication Excellence” by the University in 2015.

### **Honours & awards**

- 2017 UBU Travel Fund by Ubon Rachathani University
- 2015 Sanggar Sanjung Award by Universiti Sains Malaysia  
(Excellence in Publication Award)
- 2015 Travel Award by APEC Young Scientist
- 2013 Travel Award by QIMR Berghofer
- 2012 Travel Award by Australian Society for Parasitology
- 2011 Travel Award by Australian Society for Parasitology
- 2010 Travel Award by Australian Society for Parasitology
- 2009 PhD Top Up Scholarship by QIMR Berghofer Medical Research Institute, Australia
- 2009 Academic Staff Training Scheme PhD Fellowship by Universiti Sains Malaysia
- 2008 Best Research Academic Staff by Universiti Teknologi MARA Malaysia
- 2002 Undergraduate Dean List Award by Universiti Putra Malaysia
- 2001 Undergraduate Dean List Award by Universiti Putra Malaysia

### **On-going grants**

Universiti Sains Malaysia Short Term Grant – As principal investigator  
 Project Grant 304/CIPPM/6313191: Generation and characterization of shark synthetic VNAR against malaria PfHRP2 protein (1/6/2015 – 30.11.2017, RM 38,688.40).

Universiti Sains Malaysia Research University Grant – As principal investigator  
 Project Grant 1001/CIPPM/811296: Development of human antibody fragments directed towards Japanese encephalitis virus NS1 using a semi-Synthetic scFv phage display library  
 (31/12/2014 – 31/05/2018, RM 170,700.00).

Ministry of Education Knowledge Transfer Grant – Principal Investigator  
 Project Grant 203/CIPPM/6750068: Knowledge Transfer of Producing Fungus Myceliated Grains as Natural Feed Supplements to Improve Animal Immunity and Growth Promotion  
 (1/10/2015 – 30/9/2017, RM 159,900.00) - Completed

Universiti Sains Malaysia Short Term Grant – As co-investigator  
 Project Grant 304/CIPPM/61313175: Characterization of Adjuvant Effects of Pleurotus Polysaccharides on Immunomodulatory Activities of Macrophages (1/4/2016-31/3/2018, RM 40,000.00).

### **Publications**

Herng Leow, Katja Fischer, Katleen Braet, Qin Cheng, James McCarthy (2018). Selection of Malaria Biomarkers Specific Binder From Shark VNAR Immunized Library by Phage Display (Manuscript under reviewed)

Warren Lee, Ali Syed Atif, Chiuann Yee Leow, Soo Choon Tan, Chiuann Herng Leow (2018). Isolation and characterization of a novel anti-salbutamol chicken scFv for human doping urinalysis. Analytical Biochemistry. (Article Accepted)

Kazi Ada, Candy Chuah, Abu Bakar Abdul Majeed, Chiuan Heng Leow, Boon HuatLim, Chiuan Yee Leow (2018). Current Progress of Immunoinformatics Approach Harnessed for Cellular and Antibody-dependent Vaccine Design. *Journal of Pathogens and Global Health*. <https://doi.org/10.1080/20477724.2018.1446773>.

Kho, H.P., Leow, C.Y., Shueb, R.H., Leow, C.H., Lim, B.H. and Chuah, C. (2018). A hypothetical oxidative stress regulatory role of alpha giardins in the protozoan parasite *Giardia intestinalis*. *Tropical Biomedicine*. 35(1): 41–49

Subramanion Lachumy Jothy, Tamio Saito, Jagat Rakesh Kanwar, Subramaniam Kavitha, Leow Chiuan Heng, Yeng Chen, Leong Yin-Hui, and Sreenivasan Sasidharan (2017). Bioassay-Guided Isolation and Antioxidant Evaluation of Rutin from Leaf of *Polyalthia longifolia*. *Asian Journal of Applied Sciences*. 5(1): 138 – 148

Chiuan Heng Leow, Katja Fischer, Chiuan Yee Leow, Qin Cheng, Candy Chuah and James McCarthy (2017). Single Domain Antibodies as New Biomarker Detectors. *MDPI Diagnostics*. 7:52

Warren Lee, Ali Syed Atif, Soo Choon Tan, Chiuan Heng Leow (2017) Insights into the chicken IgY with emphasis on the generation and applications of chicken recombinant monoclonal antibodies. *Journal of Immunological Methods*. 447, 71-85.

Heng C. Leow, Martina L. Jones, Qin Cheng, Stephen M. Mahler, James S. McCarthy. (2014). Production and Characterization of a Specific Monoclonal Antibody binding the *Plasmodium falciparum* Diagnostic Biomarker, Histidine-Rich Protein 2. *Malaria Journal*. 13:277, 1-12. (PMID: 25037150) (IF=3.11; CI=1)

Gam, L.H., Leow, C.H., Man, C.N., Gooi, B.H., Manjit, S. (2006). Analysis of differentially expressed proteins in cancerous and normal colonic tissues. *World J. Gastroenterol*. 12(31): 4973-4983. (PMID: 16937492) (IF=2.369; CI=8)

#### Book chapters

Chiuan Heng Leow, Qin Cheng, Katja Fischer and James McCarthy (2018). The Development of single Domain Antibodies for Diagnostic and Therapeutic Applications. In Book: INTECH – Antibody Engineering. Chapter 8. 175 – 204

Sreenivasan Sasidharan, Shanmugapriy, Subramanion Lachumy Jothy, Mei Li Ng, Nowroji Kavitha, Chew Ai Lan, Khoo Boon Yin, Soundararajan Vijayarathna, Leow Chiuan Heng and Chern Ein Oon (2017). Natural Polyphenols and its Potential in Preventing Diseases Related to Oxidative Stress as an Alternative Green Nutraceutical Approach. In Book: Biotechnology for Sustainability - Achievements, Challenges and Perspectives. 141 – 170

#### Presentations

Heng Leow, Martina Jones, Stephen Mahler, Qin Cheng, James McCarthy (2012). Antibody Engineering – Approaching to Develop New Binders for Detection *Plasmodium falciparum* Histidine Rich Protein 2 in Malaria Rapid Diagnostic Tests. In: QIMR Student Symposium 2013, 12 April 2013, Brisbane – Oral Presentation

Herng Leow, Katja Fischer, Katleen Braet, Qin Cheng, James McCarthy (2013). Exploiting the potential of ancient antibodies: Shark Antibodies as binders in malaria rapid diagnostic tests. In: Keystone Symposia - Antibodies as Drugs, 27 January - 1 Feb 2013, Fairmont Hotel Vancouver, Vancouver, British Columbia, Canada. Pg 80 - Poster Presentation

Herng Leow, Martina Jones, Stephen Mahler, Qin Cheng, James McCarthy (2012). Characterization of recombinant monoclonal antibodies isolated from human single chain variant fragment libraries targeting against Plasmodium falciparum Histidine Rich Protein 2. In: 3 Brisbane ECR Poster Symposium, 20 Nov 2012, The University of Queensland, Brisbane. Pg 47 - Poster Presentation

Herng Leow, Katja Fischer, Katleen Braet, Qin Cheng, James McCarthy (2012). "Ancient Antibodies Newly Discovered" - Exploitation of new antigen binders from shark antibodies towards Malaria RDTs improvement. In: 21<sup>st</sup> Annual Royal Brisbane Woman Hospital Healthcare Symposium, 8 - 12 October 2012, Herston, Brisbane - Oral Presentation

Herng Leow, Katja Fischer, Katleen Braet, Qin Cheng, James McCarthy (2012). Using an immunised shark VNAR phage display library to screen for binders to malaria antigens for improvement of malaria RDTs. In: Australian Society of Parasitology Conference, 2 - 4 July 2012, Launceston, Tasmania. Pg 24 - Oral Presentation

Herng Leow, Martina Jones, Stephen Mahler, Qin Cheng, James McCarthy (2012). Selection and generation of high binding phage antibodies targeting Plasmodium falciparum Histidine Rich Protein 2 from human single chain variant fragment libraries. In: 4<sup>th</sup> Australasian Vaccines and Immunotherapeutics Development Meeting, 2 - 4 May 2012, Brisbane. Pg 53 - Poster Presentation

Herng Leow, Martina Jones, Stephen Mahler, Qin Cheng, James McCarthy (2012). Selection and generation of high binding phage antibodies targeting Plasmodium falciparum Histidine

Rich Protein 2 from human single chain variant fragment libraries. In: 2<sup>nd</sup> Northern Australia Malaria symposium, 23 Apr 2012, Kedron, Brisbane. Pg 29 - Oral Presentation

Herng Leow, Martina Jones, Stephen Mahler, Qin Cheng, James McCarthy (2012). An approach to developing new binders for detection of Plasmodium falciparum Histidine Rich Protein 2 using phage display technology. In: QIMR Student Symposium, 4 Apr 2012, Herston, Brisbane - Oral Presentation

Herng Leow, Katja Fischer, Katleen Braet, Qin Cheng, James McCarthy (2011). Generation of Shark IgNAR Library as a New Antigen Binder in Malaria RDTs. In: QIMR Student Retreat, 8 Sep 2011, Tangalooma, Brisbane. Pg 16 - Poster Presentation

Herng Leow, Martina L. Jones, Stephen, M. Mahler, Qin Cheng, James McCarthy (2011). Development of recombinant single chain variant (scFv) antibodies targeting

Plasmodium falciparum Histidine Rich Protein 2. In: Australian Society of Parasitology Conference 10 - 13 July 2011, Cairns. Pg 66 - Oral/ Poster Presentation

Herng Leow, Martina Jones, Stephen Mahler, Qin Cheng, James McCarthy (2011). Development of new binders against Plasmodium falciparum Histidine Rich Protein 2 for Improving Malaria Rapid Diagnostic Tests (RDTs). In: Australian Society of Medical Research Medical Research Week – Postgraduate Student Conference, Brisbane, 31 May 2011 – Conference – Poster Presentation

Herng Leow, Katja Fischer, Katleen Braet, Qin Cheng, James McCarthy (2010). Establishing a shark IgNAR library against malaria antigens as a means of finding better antigen for use in malaria rapid diagnostic tests (RDTs). In: The Inaugural Brisbane Inter-Institute Poster Symposium, 8 Oct 2010 - Symposium- Poster Presentation

Herng Leow, Martina L. Jones, Stephen, M. Mahler, Qin Cheng, James S. McCarthy (2010). An approach to developing new binders for detection of Plasmodium falciparum Histidine Rich Protein 2 using Phage Display Technology. In: XIIth International Congress Parasitology (ICOPA) Conference, 15 – 20<sup>th</sup> August 2010, Melbourne Pg 63 – Oral Presentation

### **Invited speaker**

7<sup>th</sup> December 2017

Improving malaria rapid diagnostic using shark VNAR antibody  
 The annual Joint International Tropical Medicine Meeting (JITMM)  
 Amari Watergate, in Bangkok, Thailand

17<sup>th</sup> August 2017

Exploration of Natural Single Domain Antibodies in Current Biomedical Platform  
 Bay view Hotel, Georgetown, Penang, Malaysia

27<sup>th</sup> Mar 2017

Beta-Glucan: An alternative substance for cancer therapy  
 Faculty of Science Ubon Rachathani University, Thailand

28<sup>th</sup> Mar 2017

Ancient single domain antibodies for current biomedical applications  
 Faculty of Science Ubon Rachathani University, Thailand

23<sup>rd</sup> Apr 2015

Power Foods To Boost Your Immunity  
 Dewan Seminar, Universiti Sains Malaysia, Engineering Campus, Transkrian

8<sup>th</sup> Apr 2015

Power Foods To Boost Your Immunity  
 Pusat Sejahtera, Universiti Sains Malaysia, Penang Campus

4<sup>th</sup> Feb 2015

Development of Shark Single Domain Antibodies in Cancer Diagnostics and Therapeutics.  
 Cancer Research Initiatives Foundation (CARIF), Subang, Kuala Lumpur