

Personality Focus

In October 2006, Dr Jean Paul Thiery, an internationally-renowned developmental and cancer biologist joined the Institute of Molecular and Cell Biology (IMCB) to focus on Biophysics and Developmental Biology research. His Biophysics-oriented research looks at the fundamental principles driving cell adhesion, an area that he has been interested in for decades. Dr Thiery was responsible for discovering the first cell adhesion molecule in 1977. Biomed Singapore finds out more.

Why did you decide to come to Singapore?

One of the reasons why I chose to come here was because I wanted to pursue research in an exciting environment. Everything is concentrated here in the Biopolis – the funds are available, there are excellent animal facilities and plenty of opportunities to set up collaborations. I have already established or am hoping to establish collaborations within IMCB, for example with Neal Copeland and Nancy Jenkins as well as outside of IMCB, for example with research institutes, hospitals, the National University of Singapore, Nanyang Technological University and a network of surgeons.

Studying cell adhesion

What are you working on at IMCB?

I am keen to know the function of adhesion molecules in-vivo. I have been studying the migration of neural crest cells and the role of cell adhesion molecules in this embryonic structure. Using knock-out mice, I have been able to show the importance of the neural crest in migration and consequences for morphogenesis and differentiation, as well as to study normal development and diseases. Part of my translational research will involve looking at breast cancer and ovarian carcinoma. I am also developing a new microscope to allow scientists to study cell adhesion molecules better.

What are some of the interesting scientific development happening in your area?

I believe that therapeutic strategies for cancer will diversify over the next 10 years and a lot of these will be based on antibodies. Because of this, it is a good time to be launching programmes at the Experimental Therapeutics Centre. It will help us to better treat diseases. IMCB is very good at developmental biology. This will be crucial in understanding how a disease works and figuring out ways to tackle it. Developmental biology has already provided many indicators for cancer research. ♦

Dr Jean Paul Thiery



Upcoming Events

30 Jul – 1 Aug

Bioprocess Technology

This is the 4th annual meeting and will cover the development and production of antibodies, vaccines and gene vectors.
<http://www.wilbio.com>

19 – 12 Sep

Biomarkers World Asia 2007

This conference highlights the important role of biomarkers in boosting R&D efforts for drug discovery, diagnostics and other applications.
http://www.terrinn.com/2007/bma_sg

24 – 27 Sep

2nd Annual BioPharm Asia

This conference will provide a comprehensive update on bioprocess development, production, operational strategies, regulatory hurdles and the ever-growing biosimilars market.
<http://www.abc-asia.com/biopharmasia>

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International Collaborations

New Partnership for A*STAR and University of Cambridge

The Agency for Science Technology & Research (A*STAR) and the University of Cambridge have entered into a partnership for PhD training in the areas of biomedical sciences, physical sciences and engineering. Scholars under this A*STAR-Cambridge Partnership PhD programme (ACP) will be co-supervised by researchers from A*STAR research institutes and professors at Cambridge. They will be conferred a PhD degree from the University of Cambridge.

The partnership between A*STAR and Cambridge firmly places A*STAR scholars in one of the world's leading learning and research environments where they can imbibe new knowledge and research skills. The linkages and collaborations between A*STAR researchers and Cambridge professors will reinforce and deepen Singapore's international research connections. ♦

Promoting healthcare cooperation between Singapore and Cambodia

Singapore and Cambodia signed a memorandum of understanding to promote healthcare cooperation. This MOU was signed by Health Minister Khaw Boon Wan and his Cambodian counterpart Nuth Sukhom. Both countries agreed to work together to prevent the spread of infectious diseases across borders and share experiences in border control measures. In addition, they will cooperate in the training of healthcare professionals. ♦



Dr Lim Chuan Poh, Chairman A*STAR and Prof Alison Richard, Vice-Chancellor, University of Cambridge at the MOU signing ceremony

Biomec Singapore

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The Singapore Pavilion at BIO 2007

Making a splash at BIO 2007

Singapore participated in BIO 2007 which attracted over 22,000 attendees interested in getting the latest updates in global biotechnology issues. During the event, Singapore continued to demonstrate how it is the choice location for biomedical science activities – in particular how the nation continues to attract top scientific talents, major biologics manufacturing investments and leading pharmaceutical companies to expand R&D operations here. The Singapore pavilion consisted of EDB, A*STAR, Bio*One Capital, A-Bio Pharma, Albany Molecular Research, Cell Research Corporation, CombinatorX, Exploit Technologies, i-DNA, JTC Corporation, Maccine, Rockby biomed and S*BIO. ♦

Genentech broke ground on a US\$140 million commercial scale microbial-based biologics manufacturing facility which is its first manufacturing investment in Asia. This plant will manufacture Lucentis, a drug that treats wet age-related macular degeneration.

MerLion Pharmaceuticals has been included in the annual FierceBiotech "Fierce 15" list, designating it as one of the top biotech companies of 2007. The editors of FierceBiotech evaluated hundreds of privately-held firms based on company vision, revenue potential, quality of deals, strength of technology, partnerships, and competitive market position. MerLion was determined to be one of the "fiercest," proven by their creativity, rapid corporate development and innovations in the industry.

S*BIO has partnered with the **National University Hospital-National University of Singapore Tissue Repository** (NUH-NUS TR), to conduct biomarker research and evaluate tumours' responsiveness to S*BIO's proprietary anti-cancer compounds. S*BIO is working with Dr Robert Hewitt,

Director of the NUH-NUS TR, on this two-year partnership project, which will allow S*BIO to better understand its compounds and their effects, before being used in a clinical setting. While S*BIO focuses on research and clinical development of novel targeted small molecule drugs for the treatment of cancer, NUH-NUS TR will provide the researchers with high quality and well-documented biomaterials. S*BIO is Singapore's first biotechnology company to initiate clinical trials. Phase I clinical trials have begun at the National University Hospital for S*BIO's anti-cancer compound, SB939. This study will evaluate the safety and tolerability, as well as determine the pharmacokinetic and pharmacodynamic profile of SB939 in cancer patients, with either solid or haematological tumours.

In line with the focus on its rapidly growing cord blood banking business, **Cygenics Ltd** has been renamed **CordLife Ltd**. CordLife is a healthcare company focused on tissue and cord blood banking. The company plans to partner out its stem cell therapy and technology development businesses. Listed



MerLion Pharma is positioned to be at the forefront of natural product-based drug discovery activities

on ASX, CordLife will now trade under the code CBB. Separately, CordLife received notification from the Indonesian Government of a conditional license and approval for the company's umbilical cord blood (UCB) bank. This makes it the only licensed and approved UCB operator in Indonesia. ♦

Industry Highlights (continued)

Medtech Updates



From left: Mr Robert Wells, Vice President, International Markets Group & Corporate Affairs, Affymetrix, Inc.; Mr Warren Kocmond, Senior Vice President, Global Operations, Affymetrix, Inc.; Ms Aw Kah Peng, Assistant Managing Director, EDB; Mr Kevin King, President, Life Sciences Business & Executive Vice President, Affymetrix, Inc.; and Mr Choy Kem-Wah, Vice President & General Manager, Singapore Operations, Affymetrix Pte Ltd

Affymetrix opened its state-of-the-art manufacturing facility in Singapore, its first outside the U.S. This facility will enable the company to better serve and support its growing business in microarray technology. One of the reasons why Affymetrix chose Singapore was because a number of their valued customers are already based here conducting cutting-edge research. Affymetrix plans to shift about 40% of its microarray production to Singapore by end 2007.

Another company to open a manufacturing facility is **Bio-Rad Laboratories** whose 20,000 sq ft facility will manufacture a variety of life science instruments used in medical and biological research labs worldwide. Bio-Rad is a multinational manufacturer and distributor of life science research and clinical diagnostics products. The company's life science products are based on technologies used to identify, separate, purify and analyse biological materials such as protein and DNA. This new facility joins Bio-Rad's Singapore-based Asia Pacific regional headquarters.

West Pharmaceutical Services will be investing \$545 million to expand its Singapore facility in order to meet its growing Asia Pacific business. This expansion

will include the addition of manufacturing capacity that meets cGMP requirements for pharmaceutical and medical device component manufacturing. The expansion is expected to be completed in 2010 creating over 100 new jobs and increasing West's Singapore production by 30%. West is a leader in closure systems and syringe components for use with injectable drugs. Currently, West's Singapore plant manufactures Westar RS ready-to-sterilise stoppers, FluroTec laminated components, Flip-Off and other packaging components used for injectable drug delivery and diagnostic systems. ♦



Mr Ron van Dijk, Managing Director & Vice President Asia Pacific, West Pharmaceutical Services, Mr Yeoh Keat Chuan, Executive Director, Biomedical Sciences Group, EDB

Policy Updates

Protecting personal information in biomedical research

As biomedical research activities in Singapore ramp up, there will be increased research participation and use of personal information. Hence, it is important that measures are taken to govern access and safeguard the proper use of such information. With this in mind, the Bioethics Advisory Committee released a report on "Personal Information in Biomedical Research". This covers ethical issues relating to the use of personal information in biomedical research and makes recommendations on the appropriate use of such information through proper safeguards. The report made 11 recommendations in a number of areas including consent, proportionality, protection of personal information, confidentiality, vulnerable persons, withdrawal of consent and predictive genetic information. For more details, visit <http://www.bioethics-singapore.org> ♦

Changes in Pharmacists Registration Act afoot

The Health Ministry and the Singapore Pharmacy Board are proposing changes to the current Pharmacists Registration Act. This is to bring the profession in line with new developments in the industry. It is compulsory for pharmacists to undergo continuing professional education where they will have to fulfil 50 hours of retraining over a 24-month period. There are also plans to set up a Pharmacists Specialist Register and to introduce a more rigorous disciplinary proceedings framework. The Ministry of Health is conducting a public consultation on the draft Pharmacists Registration Bill. For more details, visit <http://www.moh.gov.sg> ♦

Research Highlights

Developing clinical sciences in Singapore

The Singapore Institute of Clinical Sciences (SICS) and its new building, the Brenner Centre for Molecular Medicine, were officially opened in April 2007. SICS will have one set of research facilities at the Brenner Centre which is located at the NUS Kent Ridge campus in between the Yong Loo Lin School of Medicine and the National University Hospital. The Brenner Centre was named after Dr Sydney Brenner to honour his commitment in

From left to right: Dr Tan Choh Chuan, Mr Philip Yeo, Dr Sydney Brenner, Mr Lim Chuan Poh, Prof Judith Swain and Prof John Wong at the opening of the Singapore Institute of Clinical Sciences and Brenner Centre for Molecular Medicine

developing Singapore's biomedical sciences sector.

SICS currently has research programmes in Infectious Diseases and Genetic Medicine, and will be initiating another programme in Metabolic Diseases. The institute will build a bridge between the bedside and the laboratory bench. This reflects Dr Sydney Brenner's belief in the power of basic research that is inspired by questions and

ideas of clinical researchers and physicians who are at the front line of patient care. It will also develop technologies that would facilitate investigational medicine, studying man as the model system.

SICS will have another set of labs located within Biopolis. This will enable SICS to have close links with both the clinical and basic science communities to promote translational and clinical research. ♦

Singapore and Japan build upon each other's strengths



From left to right: Mr Lim Chuan Poh, Chairman A*STAR, Dr Kenji Takeda, Executive Director RIKEN and Dr Masaru Taniguchi, Director, Research Center for Allergy and Immunology at the A*STAR-RIKEN Symposium

A*STAR and RIKEN co-organised a joint symposium which highlighted research in the areas of immunology and developmental biology that is ongoing at their respective research institutes. The topics and speakers were chosen to reflect the complementary capabilities and shared interests of the two organisations. This symposium arises from an MOU which aims to encourage research collaborations between Singapore and Japan. RIKEN is a network of public research institutes supported by the Japanese government, and is well recognised for its work in immunology, molecular biology, genetics and clinical medicine.

A*STAR and RIKEN currently have several joint projects. For example, researchers from A*STAR's Singapore Immunology Network and RIKEN Research Center for Allergy and Immunology are looking into immune cell development. Another joint project is a study revealing the profile of the control system of mammalian genes, which is conducted by the Genome Institute of Singapore, the Institute of Infocomm Research and RIKEN Yokohama Institute, the Genome Science Laboratory, Discovery Research Institute. It is hoped that this symposium will help increase the number of such collaborations in the near future. ♦

Proposed setup of NTU bioengineering research centre

The Nanyang Technological University (NTU) officially opened its Buona Vista campus which consists of nine floors of clubhouse facilities for graduates and members. NTU also announced that it plans to set up a bioengineering research centre at this campus which will house some 200 researchers who will work with the Biopolis and tap on existing biomedical research facilities. NTU's Office of Research hopes to come out with ground-breaking devices and innovations that would put Singapore at the forefront of science and technology breakthroughs. ♦

Healthcare Updates

The **National Cancer Centre Singapore (NCCS)** launched the **Humphrey Oei Institute of Cancer Research (HOICR)**, bringing together its medical scientists, researchers and research divisions. This common identity will help to strengthen NCCS' research as well as attract top talent from Singapore and abroad. With both private and public funding, these funds will be used to recruit top calibre staff and fund some 250 cancer research projects at NCCS, of which the majority are focusing on basic research.

The **Duke-NUS Graduate Medical School Singapore (GMS)** has appointed Dr Ranga Krishnan as its Executive Vice Dean. Dr Krishnan is an internationally-recognised researcher and will maintain his role as Chairman of the Department of Psychiatry at Duke. Dr Krishnan will complement the existing management team at GMS with his solid background in the medical sciences, his rich experience as a physician-scientist and in-depth knowledge in the management of healthcare. Dr Krishnan is an excellent example of a Duke physician-scientist and leader. ♦