



## PRESS RELEASE

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### **NUS Medicine researcher wins prestigious Gabbay award for groundbreaking CAR-T cell immunotherapy work**

***NUH patients treated using CAR-T immunotherapy now cancer-free***

*Singapore, 31 July 2019* — NUS Yong Loo Lin School of Medicine's Professor Dario Campana is one of two researchers conferred an international award for groundbreaking work in immunotherapy. The Jacob and Louise Gabbay Award in Biotechnology and Medicine recognises scientists in academia, medicine or industry whose work hold outstanding scientific content and significant practical consequences in the biomedical sciences.

Prof Campana is one of the pioneers of CAR-T cell therapy, which has been recently used successfully to treat children and adults with Acute Lymphoblastic Leukemia (ALL) here in Singapore at the National University Hospital (NUH).

In CAR-T cell therapy, a patient's immune cells produced in the body are programmed in the laboratory to become cancer cell killers. The immune cells, known as T cells, are drawn from a patient's blood and equipped with a Chimeric Antigen Receptor (CAR), a special receptor that binds to a specific protein on the patient's cancer cells. Large numbers of the CAR-T cells are grown in the laboratory and then infused into the patient.

Prof Campana, Mrs. Lee Kong Chian Chair in Advanced Cellular Therapy and director of the Division of Immunopathology and Cell Therapy in the Department of Paediatrics, is also the founder of three biotech companies – Unum Therapeutics in Cambridge, Massachusetts, Nkarta Therapeutics in South San Francisco, California, and Medisix Therapeutics in Singapore. He shares the Gabbay award with another CAR-T cell researcher, Dr Michel Sadelain, director of the Center for Cell Engineering at the Memorial Sloan Kettering Cancer Centre in the US.

The Gabbay award, given out annually and to be presented to this year's winners on 2 October at Brandeis University in the US, consists of a medallion and a USD\$25,000 cash prize or USD\$30,000 to be shared between awardees. Recipients travel to Brandeis University in the fall of each year and present a lecture on their work, followed by a dinner at which the formal presentation takes place. Nominations are solicited

from selected scientists in industry and academia worldwide. They are considered by a panel of distinguished researchers representing the biotechnology and pharmaceutical industries, as well as universities and schools of medicine.

“The award is for scientific discoveries in the biotechnology area that have enabled medical breakthroughs. The CAR T-cell system is a prime example of this directive,” Brandeis University Harold and Bernice Davis Professor of Aging and Neurodegenerative Disease Dagmar Ringe, who oversees the Gabbay Award selection process, said in an announcement.

Prof Ringe added, “The advances developed by these researchers provide a broad platform to enhance CAR T-cell therapy, leading directly to the development of new CAR T-cell therapies that are showing increasing efficacy in patients.”

Expressing his appreciation, Prof Campana said, “I am pleased that the Gabbay committee identified CAR-T cells for recognition this year, and am honored to be a recipient of the award together with Dr. Sadelain. CAR-T cell therapy is having a dramatic impact on ALL treatment; we are currently working hard to improve this technology to extend it to other forms of cancer.”

It is a vitally important strategic programme, as Prof Campana’s work shows, said Professor Chong Yap Seng, Dean, NUS Yong Loo Lin School of Medicine. “Prof Campana is continuing to innovate at the forefront of cancer immunotherapy, bringing tremendous hope to cancer patients. Through his leadership of our clinicians, he has helped to establish a fledgling cellular immunotherapy program at the National University Hospital that is already helping patients with blood cancer. These contributions are immensely important.”

At the NUH, Prof Campana’s research has been used to treat 10 children and young adults with ALL for whom chemotherapy (the standard treatment for ALL) was not working effectively, said Associate Professor Allen Yeoh, VIVA-Goh Foundation Professor in Paediatric Oncology and Senior Consultant, Division of Paediatric Haematology and Oncology. All 10 patients are doing well after treatment.

“Prof Campana’s work brings hope to cancer patients. Working together with doctors in NUH, he started a cell-based immunotherapy programme for children and adults with refractory blood cancers. For the first time, without needing to go to the USA, Singaporeans with relapsed/resistant ALL that was previously considered incurable can now receive such life-saving treatment in Singapore.”

Assoc Prof Yeoh added, “We are glad to be able to provide compassionate CAR-T cell therapy for Singapore and ASEAN children with relapsed/resistant ALL. Alongside Prof Campana’s team, we hope to start CAR-T cell therapy trials in January 2020 for children and adults with high risk and relapsed/resistant ALL.”

The study of the CAR-T cell therapy is expected to involve about 100 patients over a period of five to 10 years. The expanded trials would not only involve children, but also include adults. Additionally, the trials will help train more doctors in the use of CAR-T cells and also examine other ways in which the CAR could be used to treat other forms of leukemia and cancers.

The Advanced Cellular Therapy programme at NUS Medicine is made possible by generous donations from the Goh Foundation; Children's Cancer Foundation; Mrs Lee Kong Chian Chair for Advanced Cellular Therapy and Viva Foundation for Children with Cancer.

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### **About the NUS Yong Loo Lin School of Medicine (NUS Medicine)**

Established in 1905, the NUS Yong Loo Lin School of Medicine is the first institution of higher learning in Singapore and the genesis of the National University of Singapore.

The School offers one of the finest undergraduate medical programmes in the Asia Pacific region and enjoys international recognition and respect. The Times Higher Education World University Rankings 2019 by subject and Quacquarelli Symonds (QS) World University Rankings by Subject 2019 list NUS Medicine as the leading medical school in Asia.

It admits 300 students to the MBBS degree programme annually and its principal missions are to educate and train the next generation of healthcare professionals, and foster research that will help to advance the practice of medicine.

The 18 NUS Medicine departments in the basic sciences and clinical specialties work closely with the Centre for Medical Education, the Centre for Biomedical Ethics, the Centre for Healthcare Simulation as well as the restructured public hospitals to ensure that teaching and research are aligned and relevant to Singapore's healthcare needs. The School is a founding institutional member of the National University Health System.

For more information about NUS Medicine, please visit <http://nusmedicine.nus.edu.sg>

### **About the National University Hospital**

The National University Hospital is a tertiary hospital and major referral centre with over 50 medical, surgical and dental specialties, offering a comprehensive suite of specialist care for adults, women and children. It is the only public hospital in Singapore to offer a paediatric kidney and liver transplant programme, in addition to kidney, liver and pancreas transplantation for adults.

The Hospital was opened on 24 June 1985 as Singapore's first restructured hospital. Each year, the Hospital attends to more than one million patients.

As an academic health institution, patient safety and good clinical outcomes are the focus of the Hospital. It plays a key role in the training of doctors, nurses, allied health and other healthcare professionals. Translational research is pivotal in the Hospital's three-pronged focus, and paves the way for new cures and treatment.

A member of the [National University Health System](#), it is the principal teaching hospital of the NUS Yong Loo Lin School of Medicine and the NUS Faculty of Dentistry.

For more information about the NUH, visit <https://www.nuh.com.sg/Pages/Home.aspx>