PRESS RELEASE FOR IMMEDIATE RELEASE

SingHealth Duke-NUS Academic Medical Centre and Cordlife partner to advance stem cell technology to first-in-man clinical trial in Singapore

First-of-its-kind in Singapore, the clinical trial will test a technology that enables specific cell therapy products to be manufactured for use in patients.

SINGAPORE, 11 May 2021 – Institutes and centres under the SingHealth Duke-NUS Academic Medical Centre (AMC) are joining hands together with Singapore's first private cord blood bank, Cordlife Group Limited (Cordlife), to test a novel technology that expands the number of blood-forming stem cells from stored umbilical cord blood (UCB) in a first-in-man study in Singapore. This is the first time a home-grown UCB cell therapy is being tested on humans. The technology has the potential to increase treatment options for patients suffering from blood cancers or blood-related conditions.

One of the most effective treatments for patients with blood cancers, such as leukaemia, lymphomas and hereditary blood-related conditions, such as thalassaemia is to transplant haematopoietic stem and progenitor cells (HSPCs) harvested from UCB. However, the current applications of HSPCs are limited as the number of HSPCs that can be harvested from a UCB is typically low, yielding few useable units for adult transplant patients. Administering a UCB with low cell count often results in slower recovery and greater susceptibility to fatal infections.

The technology to be tested in this trial uses a laboratory-synthesised compound called C7 for ex-vivo expansion of HSPCs, which, in turn, enables specific cell therapy products to be manufactured for use in patients.

"Based on pre-clinical studies, C7 appears to be able to expand banked cord blood stem cells to generate sufficient quantity for adult transplant patients while maintaining their quality," said **Professor William Hwang** from Duke-NUS' Cancer and Stem Cell Biology Programme. Prof Hwang, who heads the SingHealth Duke-NUS Cell Therapy Centre, is also medical director of the National Cancer Centre Singapore (NCCS) and a senior consultant with the Department of Haematology at Singapore General Hospital (SGH). As a haematologist, he has dedicated his career caring for patients with blood cancers, one of the most common causes of cancer deaths, accounting for approximately 720,000 deaths globally every year. This accounts for 7 per cent of all cancer deaths, according to GLOBOCAN 2018 statistics. Prof Hwang and his laboratory team, together with researchers from NUS, discovered C7's ability to increase the numbers of blood-forming stem cells from UCB. "The effect of C7 on blood stem cells also seems to be better than anything else we have used in other clinical trials for cord blood expansion."

Leading this clinical trial is Dr Francesca Lim, a consultant at SGH's Department of Haematology and SingHealth Duke-NUS Blood Cancer Centre, who said, "The ability to expand UCB HSPCs for clinical use provides an opportunity to overcome cord blood transplants' short-term disadvantages of low total cell dose. This is an important step forward to improve treatment outcomes for transplant patients, especially those who rely on umbilical cord blood as the only source of grafts due to the lack of a fully matched bone marrow or peripheral blood stem cells."

Duke-NUS and SingHealth manage the patent for the application of C7 in expanding UCB HSPC through their Joint Centre for Technology and Development (JointCTeD), which sealed the industry partnership with Cordlife to enable this clinical trial.

Associate Professor Chris Laing, Senior Associate Dean for Innovation and Entrepreneurship at Duke-NUS, said, "This technology has the potential to significantly improve patients' treatment outcome. We are privileged to work with the inventors and industry partners to ensure this promising technology continues to advance. This landmark clinical trial – the first clinical trial of a Singapore stem cell expansion technology from UCB – is an example of our commitment in translating cutting-edge innovations into better patient care."

In preclinical studies, UCB treatment has been shown to be immunologically superior compared with other cell and gene therapies given its greater tolerance for human leucocyte antigen mismatch, reduced graft versus host disease and lower incidence of relapse.

"We are very excited to be a part of this revolutionary clinical trial in Singapore. This project is significant to us because different players across the ecosystem are coming together to create a paradigm shift in cellular therapies. Once the HSPC expansion technology is proven safe and effective, more patients can rely on cord blood for treatment," said Ms Tan Poh Lan, Group CEO and Executive Director of Cordlife.

This clinical trial is supported by the Singapore Ministry of Health's National Medical Research Council under its Clinical Trials Grant-Industry Collaborative Trials (CTC-ICT) Scheme and funding from Cordlife.

SingHealth Duke-NUS AMC was established through a partnership between Duke-NUS Medical School, Singapore's research intensive medical school, and SingHealth, Singapore's largest healthcare group with a network of acute hospitals and national specialty centres including the SGH and NCCS, as well as polyclinics and community hospitals.

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About SingHealth Duke-NUS Academic Medical Centre

About Singapore Health Services (SingHealth)

The SingHealth Duke-NUS Academic Medical Centre draws on the collective strengths of SingHealth and Duke-NUS Medical School to drive the transformation of healthcare and provide affordable, accessible, quality healthcare. With over 40 clinical specialties, a network of acute hospitals, national specialty centres, polyclinics and community hospitals, it delivers comprehensive, multi-disciplinary and integrated care. Beyond hospital walls, SingHealth works

closely with community care providers to ensure patients remain well-supported after their discharge and to empower the population to stay healthy and age in place.
For more information, please visit: www.singhealth.com.sg

Members of the SingHealth group
Hospitals (Tertiary Specialty Care):
Singapore General Hospital, Changi General Hospital, KK Women's and Children's Hospital, and Sengkang General Hospital

National Specialty Centres (Tertiary Specialty Care):
National Cancer Centre Singapore, National Dental Centre Singapore, National Heart Centre Singapore, National Neuroscience Institute, and Singapore National Eye Centre

SingHealth Polyclinics (Primary Care):
Bedok, Bukit Merah, Marine Parade, Outram, Pasir Ris, Punggol, Sengkang, Tampines, Eunos (expected completion: 2021) and Tampines North (expected completion: 2022)

SingHealth Community Hospitals (Intermediate and Long-term Care):
Bright Vision Hospital, Sengkang Community Hospital, and Outram Community Hospital

About Duke-NUS Medical School
Duke-NUS is Singapore's flagship graduate entry medical school, established in 2005 with a strategic, government-led partnership between two world-class institutions: Duke University School of Medicine and the National University of Singapore (NUS). Through an innovative curriculum, students at Duke-NUS are nurtured to become multi-faceted 'Clinicians Plus' poised to steer the healthcare and biomedical ecosystem in Singapore and beyond. A leader in ground-breaking research and translational innovation, Duke-NUS has gained international renown through its five signature research programmes and nine centres. The enduring impact of its discoveries is amplified by its successful Academic Medicine partnership with Singapore Health Services (SingHealth), Singapore's largest healthcare group. This strategic alliance has spawned 15 Academic Clinical Programmes, which harness multi-disciplinary research and education to transform medicine and improve lives.

For more information, please visit www.duke-nus.edu.sg

About Cordlife Group Limited
Established in May 2001, Singapore Exchange mainboard listed Cordlife Group Limited ("Cordlife", together with its subsidiaries, the "Group") owns the largest network of cord blood banks in Asia. Trusted by over 550,000 parents, the Group has AABB accredited facilities in Singapore, Hong Kong, Indonesia, India, Malaysia and the Philippines. The Group's facilities in Singapore and Hong Kong are also two of the four private cord blood banks in Asia, and eight in the world, to be accredited by both AABB and FACT. These quality achievements underpin the Group's commitment to providing reliable cord blood, cord lining and cord tissue banking services to expectant families. Through its majority-owned subsidiary in Malaysia, Cordlife holds an indirect stake in Thailand's largest private cord blood bank, Thai Stemlife. Cordlife has also established its presence in Myanmar, Vietnam, Macau, Brunei and Bangladesh.

For more information, please visit http://cordlife.listedcompany.com

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Media photo

Upon collection after the delivery of a baby, cord blood is processed to extract stem cells and to prepare it for long-term cryopreservation. (Credit: Cordlife Group Limited)