

# N2CR INSIGHTS

THE QUARTERLY NEWSLETTER OF N2CR

# N2CR MEMBERS AMONG TOP CITED SCIENTISTS WORLDWIDE

## Latest News

**Congratulations to the N2CR members who were featured in this year's round up of top cited scientists worldwide by Stanford University.**

These members were in the top 2% of cited scientists, calculated based on 2021 citation metrics from Scopus.

[Read more about this achievement here!](#)



## ST Singaporean of the Year nominee : Associate Professor Too Heng-Phon

For the past two decades, A/Prof Too has played a tremendous role in strengthening life sciences research and development in Singapore. Congratulations to A/Prof Too!

[Click here to read more about his dedication to biomedicine](#)



Picture courtesy of NUS Medicine

## Hope for blood cancer patients with new stem cell technique

A/Prof Koh Liang Piu helped to develop a cell selection technique that gives blood cancer patients a higher chance of finding a match for blood stem cell transplants. Since named the Haplo-2017 protocol, this technique widens the pool of available donors and reduces transplant-related complications.

[Read more about this life-saving technique here](#)



Picture courtesy of The Strait Times

## HERE'S WHAT'S UP!

Latest News

Pages 1 - 2

Research News

Pages 2 - 3

Highlights of 2022

Pages 3 - 5

Upcoming Events

Pages 5

January

CanCycle 2023

February

PCM Thematic Seminar

Follow us on social media!



## ISEH Outstanding Mentor Award 2022



*Prof Toshio Suda*

This award honours outstanding scientific mentorship of young investigators and early career researchers in experimental hematology.

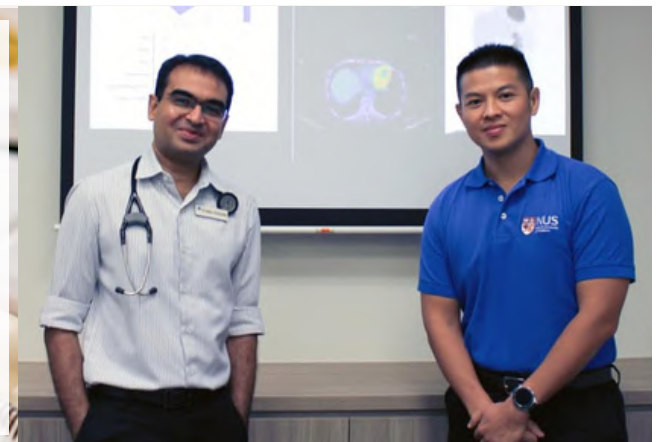
[Read more](#)

## Latest News

### N2CR members find a way to create bespoke treatments for cancer patients

Dr Anand Jeyasekharan and A/Prof Edward Chow, from the Precision Cancer Medicine Thematic Programme, use a digital medicine platform called Quadratic Phenotypic Optimisation Platform (QPOP) to formulate more specific drug combinations for cancer patients. Using AI and robotics, the platform predicts which drug combinations would be most effective in treating each individual patient.

[Read more about this groundbreaking work](#)



Picture courtesy of CSI Singapore

### Novel, non-invasive method to predict and reduce childhood cancers

Neuroblastoma is known to cause a disproportionate number of childhood cancer deaths, especially for patients who relapsed. N2CR member Assoc Prof Chen Zhi Xiong was part of the team who have discovered a non-invasive way to predict and reduce the relapse of such cancers.

[Read the article to learn more about this novel method to make cancer treatment more painless for children.](#)



### N2CR member wins NRF Investigatorship for 2023

Congratulations to A/Prof Tam Wai Leong on receiving the NRF Investigatorship for 2023!

The National Research Foundation (NRF) awards this Investigatorship to scientists doing groundbreaking and high-risk research, setting them apart as leaders in their field. Through their work, NRF aims to build a strong scientific foundation in Singapore.

[Read more about A/Prof Tam's research and the award here](#)



## Research News (Oct - Dec 2022)

### Personalised therapy for relapsed/refractory lymphoma

(Science Translational Medicine, 19 Oct 2022)

Non-Hodgkin's lymphoma is a common form of blood cancer with a high proportion of patients either developing treatment resistance or relapsing after initial treatment. The combination of multiple therapies is commonly used to treat treatment-resistant/relapsed patients. However, response rates can be poor, necessitating the development of patient-specific approaches for therapy selection. This study led by Dr Anand Jeyasekharan with A/Prof Edward Chow, describes the application of quadratic phenotypic optimization platform (QPOP), in the context of non-Hodgkin's lymphoma, where QPOP is a patient-specific drug testing platform that allows drug combinations to be tested and selected based on efficacy against individual patient tumour samples obtained by biopsy. In addition to demonstrating that QPOP is feasible for application in a clinical setting, QPOP-guided treatment regimens were also shown to provide benefit to treatment-resistant/relapsed patients, warranting the evaluation of this approach in future clinical trials.



[Read More](#)

## Colorectal cancer surveillance in the community (BMC Public Health, 18 Nov 2022)

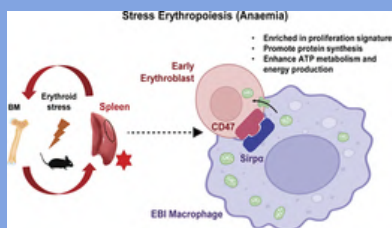
Early-stage colorectal cancer (CRC) patients are recommended to get a review every 3-6 months for 5 years after operation for the detection of cancer recurrence. As an increasing number of CRC patients require review post-operation, a greater burden may be placed on specialist clinics. With the availability of standardised surveillance protocols and low risk of cancer recurrence, the transfer of post-operative review to the community and primary healthcare settings might serve to reduce the burden on specialist clinics. This study led by A/Prof Tan Ker-Kan, investigated the perception of CRC patients towards shifting post-operative care to the community and primary healthcare setting. Overall, the authors found that patients were reluctant to be reviewed outside of the specialist clinics and that more needs to be done to encourage patient acceptance of cancer surveillance care in community and primary care institutions.



[Read More](#)

## Mitochondria transfer mediates stress erythropoiesis

(Journal of Experimental Medicine, 5 Dec 2022)



[Read More](#)

Mitochondria are specialised compartments of the cell that function as powerhouses by playing a crucial role in metabolism. The transfer of mitochondria between cells is a biological phenomenon implicated in diverse biological settings, including cancer. In this study led by Dr Spencer Yang Chong and Prof Toshio Suda, the authors investigated the physiological role of mitochondria transfer between immature red blood cells (erythroblasts) and their erythroblastic island macrophage niche in the context of different modes of anaemic stresses and found that mitochondria transfer plays a significant role in the enhancement of erythroid recovery from stress. This may suggest the active mitochondria transfer between cancer cells and niche cells, which should be investigated.

## Targeting microRNAs in cancer using flavonoids

(Translational Oncology, 5 Dec 2022)

Flavonoids are a family of naturally occurring compounds commonly found in plants. In this article authored by A/Prof Gautam Sethi and colleagues, the authors review and discuss the anti-cancer effects associated with flavonoids and their potential for development as novel cancer therapeutic agents. In particular, the authors examine the effect of flavonoids on microRNA activity in cancer cells, highlighting it as the mechanism underlying the anti-cancer effects associated with flavonoids.



[Read More](#)

## Highlights of 2022

### A promising new drug therapy for controlling advanced breast cancer

Senior Principal Investigator at CSI Singapore and N2CR Tissue Specific Carcinogenesis member, Prof Lee Soo Chin, together with N2CR Precision Cancer Medicine member, Dr Joline Lim and a team of researchers have developed a novel drug combination to tackle breast cancer in a minimally invasive manner with less pain. A combination of two drugs, this new therapy could help to treat patients with advanced stage metastatic breast cancer for whom other treatments have proved ineffective.

[Read more about this novel therapy here](#)



Picture courtesy of The Straits Times

## First Scientific Advisory Board (SAB) Meeting at N2CR

N2CR had its first SAB from 21 - 22 Nov 2022 since its inception in October 2020. SAB Chairman Prof Robert Bristow and committee members Prof Alex Adjei and Prof Patrick Casey met Prof Ashok and many of N2CR's executive committee members. And so we kicked off two fruitful days of discussions and reviews on how we can further the impact and potential of N2CR in South East Asia and the international arena. The meeting culminated in a short meet and greet session with PhD students and early career researchers.

Thank you all for helping us grow N2CR these past two years and may we continue onward to greater scientific excellence together.

## Welcome to our new N2CR members!



**Constantinos Anastassiades**

Department of Medicine, NUS



**Liu Boxiang**

Department of Pharmacy, NUS



**Alfredo Franco-Obregón**

Department of Surgery, NUS



**Rajeev Parameswaran**

Department of Surgery, NUS



**Sriram Sridharan**

Cancer Science Institute of Singapore



**Tay Kah Ping Andy**

Department of Biomedical Engineering, NUS



**Zhou Jianbiao**

Cancer Science Institute of Singapore

## Research highlights



**“GAGE mediates radio resistance in cervical cancers via the regulation of chromatin accessibility”** – Cell Reports, Volume 36, Issue 9, 31 August 2021

This study proposes a role for GAGE as both a predictive biomarker for response to radiotherapy and target for therapeutic development.

**Associate Professor Deng Lih Wen**

[Read More](#)



**“TRAIL sensitivity of nasopharyngeal cancer cells involves redox dependent upregulation of TMTC2 and its interaction with membrane caspase-3”** – Redox Biology, Volume 48, December 2021

The findings made in this study re-establishes the therapeutic potential of TRAIL for the treatment of nasopharyngeal cancer and highlights the potential of TMTC2 as a biomarker of TRAIL sensitivity.

**Professor Shazib Pervaiz**

[Read More](#)



**“Black cardamom (*Amomum subulatum* Roxb.) fruit extracts exhibit apoptotic activity against lung cancer cells”** – Journal of Ethnopharmacology, Volume 287, 6 April 2022

This study investigated the cytotoxic potential of black cardamom on cancer cells and how black cardamom extract can be developed for use as a novel therapeutic for lung cancer.

**Associate Professor Gautam Sethi**

[Read More](#)



**“Low Programmed Death-Ligand 1–Expressing Subgroup Outcomes of First-Line Immune Checkpoint Inhibitors in Gastric or Esophageal Adenocarcinoma”** - Journal of Clinical Oncology, Volume 40, Issue 4, 1 February 2022

This study revealed a lack of survival benefit with the addition of immune checkpoint inhibitors to chemotherapy for first-line treatment of gastric or esophageal adenocarcinoma patients with low Programmed Death Ligand-1-expressing tumours, providing an impetus for further investigation into the role of immunotherapy in combination with chemotherapy for first-line treatment of this patient subgroup.

**Dr Raghav Sundar**

[Read More](#)



**“Pan-cancer pervasive upregulation of 3’ UTR splicing drives tumourigenesis”** – Nature Cell Biology, Volume 24, 26 May 2022

The findings made in this study highlight the importance of 3’UTR splicing in cancer and may spur the development of novel approaches in RNA-based anti-cancer therapeutics.

**Assistant Professor Yvonne Tay**

[Read More](#)



**“Advances in quantifying circulatory microRNA for early disease detection”** – Current Opinion in Biotechnology, Volume 74, April 2022

This review discusses and highlights recent advances in miRNA detection technology as well as the clinical utility of circulatory miRNAs for early disease detection and the key considerations involved in developing miRNA-based assays for clinical use.

**Associate Professor Too Heng-Phon**

[Read More](#)

## Upcoming Events



# CanCycle

**BETTER RESEARCH • BETTER TREATMENT • BETTER LIFE**

## CanCycle 2023

N2CR, Cancer Science Institute of Singapore and National University Cancer Institute (NCIS) are jointly organising CanCycle 2023! This cyclethon fundraiser intends to raise money and awareness for the research done in the lab and how it translates to better care and treatment for cancer patients.

**Registration is open now until 31 Jan 2023!** Let us come together to participate and donate, so as to pave the way to end cancer as we know it.



NUS Centre for Cancer Research  
Yong Loo Lin School of Medicine

