

N2CR INSIGHTS

THE QUARTERLY NEWSLETTER OF N2CR



Latest News



NUS-Kanagawa Symposium 2023: Advances in Cancer Research

On Sept 4th and 5th, N2CR and CSI Singapore had the honour of hosting a symposium with 5 institutes from Japan, including the Kanagawa Prefectural Government. Researchers from both Singapore and Japan came together to share their knowledge and research on onco-immunology, RNA biology, genomics and ageing.

Through this symposium, our researchers were able to find synergies with their counterparts in Japan, so as to foster greater collaboration in cancer-related fields across both countries.

TREX Grant Call

Translational Exchange (Trex) Club is a joint platform between N2CR, NCIS and CSI for clinicians and basic scientists to have open dialogues on clinical research questions for the development of collaborative projects.

August 2023 Awardees

A/Prof Chen Ee Sin | A/Prof Victor Lee

"Identification of additional markers for staging of giant cell tumor of the bone"



Welcome to our new members!



Prof John Wong
Isabel Chan Professor in Medical Sciences
Executive Director, Centre for Population Health, NUS
Senior Advisor, NUHS



A/Prof Mikael Hartman
Department of Surgery, NUS



Dr Cheong Jit Kong
Department of Biochemistry, NUS

HERE'S WHAT'S UP!

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October

- Post-Doc and Graduate Student Club Seminar
- N2CR TSC Seminar
- N2CR SSR Workshop

November

- N2CR FPM Asia Symposium 2023
- CanCycle 2024 Launch

Follow us on social media!



N2CR Invited Speaker Series with Dr Sophia Adamia

N2CR was delighted to host Dr Sophia Adamia, from the Beth Israel Deaconess Medical Center in Boston, who visited us on 5 Sept to give a talk titled 'RNA "backpack" : Targets for RNA-based Therapy in Hematological Malignancies' at the CRC auditorium. In her personable manner, Dr Adamia explained her incredible journey from Georgia to North America and how she ventured into biomedical science despite starting out as a documentary filmmaker.



Research News (Jul - Sept 2023)

Berberine: Fighting Breast Cancer's Spread through Gut Bacteria & Natural Chemicals (Pharmacological Research , *Yangfang S et. al.*)

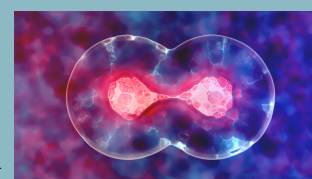
A team of researchers, led by A/Prof Gautam Sethi from N2CR, conducted a study investigating the therapeutic possibilities of berberine, a natural compound, for breast cancer. Their findings revealed that berberine has the ability to effectively hinder the growth and metastasis of breast cancer cells in an environment with low oxygen levels. Additionally, the researchers observed that berberine can modify the gut microbiome and regulate specific molecules within the body. The study presents compelling evidence supporting berberine's potential as an anti-cancer agent in combating breast carcinoma and holds great promise as a potential treatment option for breast cancer.

[Read More](#)**Targeting Wnt Signalling in Osteosarcoma**(International Journal of Molecular Sciences, *Chua K et. al.*)

Osteosarcoma, the most common bone cancer, usually affects children or adolescents during their pubertal growth spurt. Prognosis is poor for patients with advanced osteosarcoma, with low overall survival rates and limited therapeutic options. To identify better treatment options for osteosarcoma, the authors led by A/Prof Victor Lee, investigated the effect of ETC-159, a promising new drug which targets Wnt, a protein known to play an important role in cancer development and progression. Treatment with ETC-159 resulted in reduced tumour-associated blood vessel development and increased tumour cell death in preclinical osteosarcoma models. By describing the treatment effects of ETC-159, this study identifies potential avenues for the combination of ETC-159 with other therapies to enhance treatment efficacy for osteosarcoma.

[Read More](#)**PI3K/AKT/mTOR Signalling Transduction Pathway and Targeted Therapies in Cancer** (Molecular Cancer, *Glaviano, A., Foo, A.S.C., Lam, H.Y.et. al.*)

The PI3K/AKT/mTOR (PAM) signaling pathway is crucial in regulating cell survival, growth, and the cell cycle. Its complex connections with other pathways can lead to cancer when disrupted. This review in *Molecular Cancer*, led by N2CR member Dr Alan Prem Kumar, with a team of experts in the PI3K and cancer space, explores PAM pathway dysregulations in cancer and investigates the effectiveness of PI3K, AKT, and mTOR inhibitors alone and in combination with other therapies to combat treatment resistance. Additionally, it delves into the role of PAM signaling in immunology and immunotherapies.

[Read More](#)**Possible Reasons Behind the Resistance of Certain Cancer Cells to the Chemotherapy Drug 5-FU** (International Journal of Molecular Sciences, *Lim K.K. et. al.*)

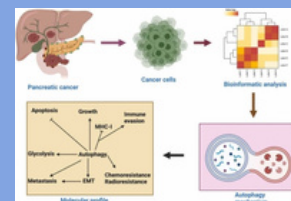
5-Fluorouracil (5-FU) is a common chemotherapy drug widely used around the world to treat cancer but development of resistance which compromises responsiveness remains a major hurdle to its efficacy. A team of researchers, led by N2CR member A/Prof Chen Ee Sin, explores the reasons behind the resistance of certain cancer cells to 5-FU. By studying fission yeast mutants, the researchers identified specific mutations that influence the cells' resistance to 5-FU. They also discovered that Ino80 complex proteins play a significant role in 5-FU resistance and could be targeted to reverse this resistance. The study's practical implications include providing insights into drug resistance mechanisms for 5-FU, a widely used chemotherapy drug. These findings may lead to the development of new strategies for managing drug resistance in cancer treatment, although further research on human cells is required for validation.

[Read More](#)

Research News (Jul - Sept 2023)

Understanding Autophagy in Pancreatic Cancer: From Bioinformatics to Clinical Insights (Pharmacological Research, Ashrafizadeh M. and Zhang W. *et. al.*)

Pancreatic cancer is a devastating illness with a poor five-year survival rate. A team of researchers, which includes A/Prof Gautam Sethi, explores the role of autophagy in pancreatic cancer and its influence on cancer hallmarks. It suggests new therapeutic strategies by targeting autophagy-related genes and proteins, emphasizing the potential for precision medicine. The findings offer practical implications for developing innovative treatments to control autophagy and improve pancreatic cancer management.



[Read More](#)

TAL1 Hijacks MYCN Enhancer that Induces MYCN Expression and Dependence on Mevalonate Pathway in T-cell Acute Lymphoblastic Leukemia (Leukemia, Tan, S.H., Tan, T.K., Yokomori, R. *et. al.*)



This study, co-led by A/Prof Takaomi Sanda and A/Prof Allen Yeoh, delves into T-cell acute lymphoblastic leukemia (T-ALL), a difficult to treat form of blood cancer. In T-ALL, the mutated TAL1 gene switches on the enhMYCN, a gene regulatory signal which increases MYCN gene expression. T-ALL cells rely heavily on MYCN to grow. Targeting this pathway may offer a potential treatment approach for T-ALL.

[Read More](#)

Upcoming Events



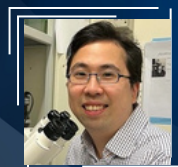
6TH SEMINAR
11 AM-12PM FRIDAY 13 OCT, 2023
LEVEL 12 CONFERENCE ROOM, MD6

Talk by: Dr Alvin Ng
Presidential Doctoral Fellow, NTU

**"EMBRACING SERENDIPITY IN
TRANSLATIONAL CANCER RESEARCH"**

POSTDOC &
GRADUATE
STUDENT CLUB
N2CR

N2CR THEMATIC SEMINAR TISSUE-SPECIFIC CARCINOGENESIS 13 October 2023



Tee Wee Wei
Assistant Professor
Department of Physiology, NUS

[Click for
Zoom
Details](#)



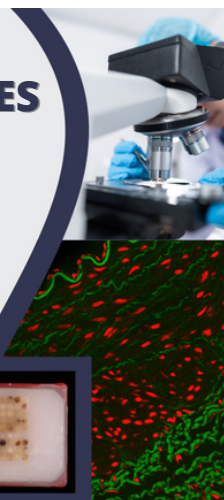
Goh Boon Cher
Professor
Department of Pharmacology, NUS

N2CR SITE - SPECIFIC RESOURCES WORKSHOP

Still confused about how you can benefit from N2CR's SSR repository? Join us at the N2CR SSR Workshop to learn more about the "head-to-tail" process and the services that SSR can provide for clinical sample requests.

17 October 2023, 3 - 4 pm
on ZOOM

[Click for more details](#)



N2CR FUNCTIONAL PRECISION MEDICINE ASIA SYMPOSIUM

14 Nov 2023, Tuesday @ 9 am

Venue: CRC Auditorium MD 11,
10 Medical Drive, Singapore 117597

[Register Now!](#)



CANCYCLE 2ND EDITION 2023 LAUNCH

CanCycle is back for its 2nd iteration!

Join us for the fundraiser launch at East Coast Park on 18 Nov 2023 and keep a lookout for interactive installations at the UTOWN Roadshow from 14 - 24 Nov 2023

[Learn more!](#)

