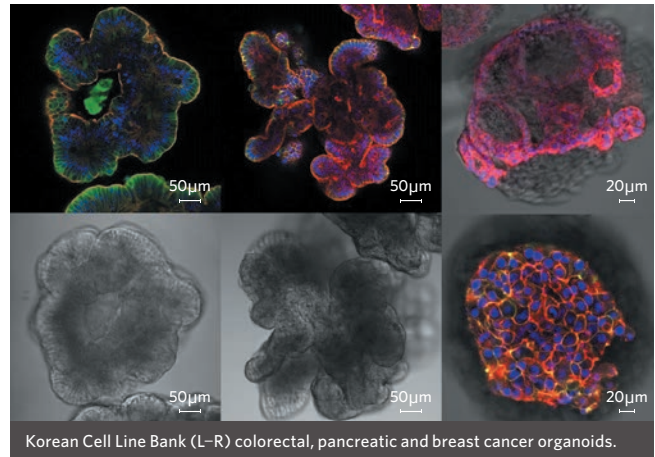


# A comprehensive approach to cancer

SEOUL NATIONAL UNIVERSITY'S preclinical research is rapidly translated into clinical trials, particularly in the field of therapeutic resistance.



**Close ties between basic and clinical researchers** at Seoul National University (SNU) drives its world-class cancer research.

Seoul National University Cancer Research Institute (SNU CRI) director, Professor Seock-Ah Im, heads a translational oncology team working to understand the mechanisms of carcinogenesis using cancer models generated from patient-derived bio-specimens. Her team identifies targets for proof-of-concept clinical trials, deciphers therapeutic resistance, examines bio-molecular imaging, and investigates tumour microenvironments, including tumour immunity.

SNU CRI research teams are exploring antitumour effects and the mechanisms of new targeted agents through preclinical

partnerships with pharmaceutical companies. These projects are focused on epidermal growth factor receptor inhibitors, human epidermal growth factor receptor 2 inhibitors, anaplastic lymphoma kinase inhibitors, and poly (ADP-ribose) polymerase inhibitors, as well as tumour immune-modulating agents and CAR-T cells.

By investigating specific genetic changes — including fusion, mutation and amplification — oncologists at SNU are also identifying predictive biomarkers for specific cancers or targeted agents to aid clinical drug development.

SNU CRI's multidisciplinary research teams use cancer models generated from patient-derived bio-specimens provided by the Korean Cell Line Bank

(KCLB). Based at SNU-CRI, the bank hosts more than 1,000 fresh archived cancer tissues, 1,600 normal or cancer cell lines, and 400 living cancer organoids.

Cancer patient derived bio-specimens are also used for target identification, functional genomics research, drug screening, and for identifying the molecular mechanisms of targeted agents, leading to proof-of-concept clinical trials at the Seoul National University Hospital Clinical Trial Center (SNUH CTC).

Clustered together, SNU College of Medicine, SNU Hospital, SNU Cancer Hospital, SNU Genome Medicine Institute, SNU CRI and SNUH CTC are a hub for cancer research. "Our goal is to become a leading research-oriented medical college

based on fundamental basic science, cutting-edge clinical research, and multidisciplinary biomedical collaboration," explains Professor Chan Soo Shin, dean of SNU College of Medicine, Korea's oldest national medical school. Its historical counterpart, SNU Hospital, which has its roots in Korea's first large modern hospital 'Jejungwon', was founded in 1885.

Information feedback between basic and clinical researchers is made easier due to their proximity, says Im. For example, when the SNU CRI team come across a patient that shows resistance to a specific targeted agent, they can send a sample to the KCLB to make a resistant cell line. The cell line can be used to explore the mechanism, and find a way to overcome the resistance, using preclinical models. For promising strategies, collaborations with pharmaceutical companies then develop new biomarker-driven clinical trials, says Im. "We actively participate in early phase, first-in-human, biomarker-driven and multimodality clinical trials to find strategies for patients who have not responded to standard treatments." ■

## CANCER INSIGHT

Seoul National University (SNU), SNU Medicine and SNU Cancer Research Institute form part of a key global **CANCER RESEARCH COMMUNITY**.

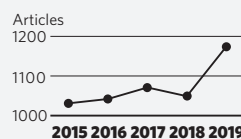
## SNU COLLABORATING INSTITUTIONS 2019\*

\*1 September 2018 to 31 August 2019



## CANCER ARTICLES

from Seoul National University on the Dimensions database



## SNU NO.1 INSTITUTION IN SOUTH KOREA

Nature Index 2015, 2016, 2017 and 2018

## SNU's TOP 5 INTERNATIONAL COLLABORATORS (2015–2018; bilateral collaboration scores)

1. Chinese Academy of Sciences (China) **23.39**
2. Harvard University (USA) **21.70**
3. National Institute for Nuclear Physics (Italy) **20.45**
4. Helmholtz Association of German Research Centres (Germany) **15.80**
5. The University of Tokyo (Japan) **15.40**



SNU MEDICINE

College of Medicine  
<http://medicine.snu.ac.kr/>  
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