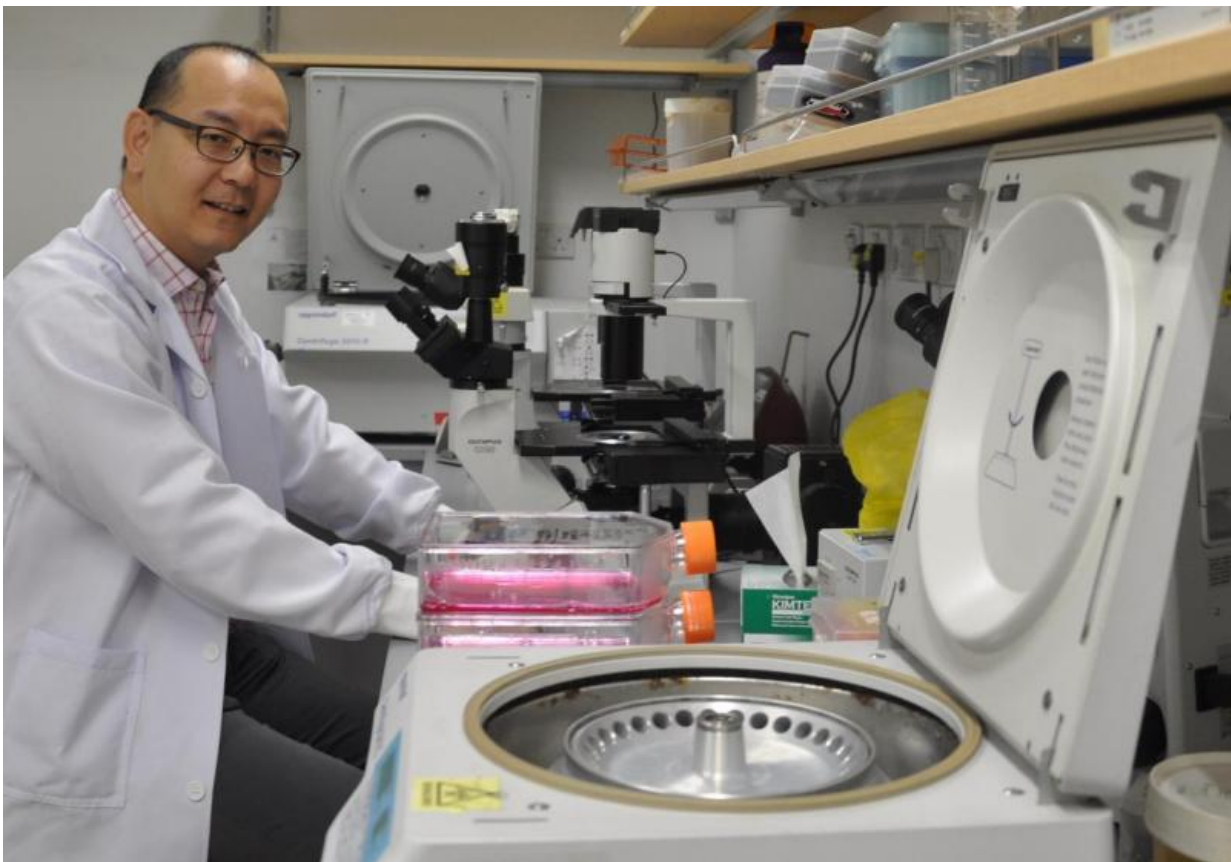


# Small molecule drug combined with chemotherapy may deliver a synergistic benefit for colorectal cancer patients

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A study led by researchers from the Cancer Science Institute of Singapore (CSI Singapore) at the National University of Singapore (NUS) has demonstrated the efficiency of a small molecule drug, PRIMA-1met, in inhibiting the growth of colorectal cancer cells. Colorectal cancer is the cancer of the large intestine (colon and rectum) and is the most common cancer in Singapore.

PRIMA-1met is a compound that has been shown in previous studies to activate mutant p53, a tumour suppressor gene, and promotes death of [cancer](#) cells. The compound has demonstrated promising preclinical activity in various cancer types and shown good drug safety profiles.

"Colorectal cancer is known for its poor long term survival rates among adults. Given the excellent safety profile of PRIMA-1met, coupled with its minimal and fully reversible side effects, we are optimistic that the development of this drug as a targeted therapeutic approach against [colorectal cancer](#), together with chemotherapy, holds good potential for patients," said Professor Chng Wee Joo, Deputy Director and Senior Principal Investigator at CSI Singapore, who led the research.

The NUS team published their findings online in October 2015 in the journal *Oncotarget*.

## **Reactivating the "Guardian of the genome"**

[p53 gene](#) is also known as the "Guardian of the genome" as it codes for an important protein that helps to stabilise and repair genomes. When mutations occur in p53, the cells become more susceptible to damage and hence turn cancerous. Nearly half of colorectal cancer patients have mutations in the p53 gene. In this study, the NUS team found PRIMA-1met to be most effective in killing colorectal cancer cells that contain the mutated p53.

Unlike most anti-cancer drugs which works by inducing damage to DNA and often has serious side effects, PRIMA-1met is more favorable as it restores the structure and function of the mutated p53 and specifically promotes the death of [cancer cells](#).

Currently, PRIMA-1met is part of a Phase I/II clinical trial in hematologic malignancies and prostate cancer. In such clinical trials, the drug of interest is given to a group of patients with hematological and solid cancers to test for its safety, efficacy, and effectiveness, as well as to identify the dosage range and potential side effects.

Moving forward, Prof Chng and his team plan to test if the combination of PRIMA-1met, with anticancer drugs such as Fluorouracil and Oxaliplatin, which are commonly used for the treatment of colorectal cancer, will optimise the results of chemotherapy.

**More information:** PRIMA-1<sup>met</sup> (APR-246) inhibits growth of colorectal cancer cells with different p53 status through distinct mechanisms [DOI: 10.18632/oncotarget.5385](https://doi.org/10.18632/oncotarget.5385)

Provided by National University of Singapore

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