Headline	NUS researchers find new way to suppress virus-induced cancers
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NUS researchers find new way to suppress virus-induced cancers

RESEARCHERS at the Cancer Institute of Singapore (CSI Singapore) at the National University of Singapore (NUS) have found a novel molecular pathway by which a suppressor, TIP60, prevents the growth of cancer cells.

The study led by principal investigator at CSI Singapore Dr Sudhakar Jha and PhD student at NUS Deepa Rajagopalan paves the way for the development of new therapeutic strategies that could delay the spread of virus-induced cancers.

TIP60, which exists in regular cells, is known to play an important role in suppressing virus-induced cancers such as cervical cancer, which typically develops from an infection by the human papillomavirus (HPV).

While several anti-cancer roles of TIP60 have been discovered, the mechanism through which the protein inhibits telomerase in cancer cells was unknown.

Telomerase is an enzyme that functions to add on telomeres, which are protective caps, to the ends of chromosomes.

Dr Jha, who is an assistant professor at NUS' Department of Biochemistry told tabla!: "Telomerase is very important to cancer cells since it enables them to become 'immortal' and grow indefinitely. Therefore, when TIP60 is active in these cancers it can shut down the telomerase expression and thus prevent the growth of cancer-causing cells.

Revolutionary... Dr Sudhakar Jha and Ms Deepa Rajagopalan identified a novel molecular pathway by which a tumour suppressor, TIP60, inhibits the growth of cancer cells. PHOTO: NUS

"This is very important because 85 per cent of cancers are telomerase positive and thus if we can activate TIP60 in these cancers, we can potentially reduce their growth."

Although several anti-cancer roles of TIP60 have been discovered, this study has made a novel discovery that TIP60 inhibits a new partner molecule "Sp1" by modifying it and thereby preventing the activation of telomerase in cancer cells.

The identification of this novel molecular pathway opens a new window of hope for therapeutic interventions against cancers.

"It would be exciting for us to explore this new pathway in these other cancer types, and hope that further study into targeting TIP60-Sp1 axis may offer a window for therapeutic intervention for cancer," said Dr Jha.

The findings of the study were published in prestigious scientific journal PLOS Pathogens on Oct 18.