

Enhancing arrest of cell growth to treat cancer in mice

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A team of researchers, led by Pier Paolo Pandolfi, at Beth Israel Deaconess Medical Center, Boston, has identified a new type of cellular senescence (i.e., irreversible arrest of cell growth) and determined a way to enhance it to suppress prostate tumor development and growth in mice.

Previous work by Pandolfi and colleagues determined that inactivation of the protein Pten leads to a senescence response that opposes tumorigenesis.

In this study, Pten-loss-induced cellular senescence (PICS) was found to be distinct from another form of cellular senescence known as oncogene-induced senescence in that it did not cause cellular proliferation and [DNA damage](#). This was important because these two consequences of oncogene-induced senescence mean that enhancing this process for the treatment of cancer is not a viable option.

As pharmacological inhibition of PTEN was found to drive senescence and inhibit [tumor development](#) and growth in vivo in a human xenograft model of [prostate cancer](#), the authors suggest that enhancing PICS might provide a new approach for cancer prevention and therapy.

More information: A novel type of cellular senescence that can be enhanced in mouse models and human tumor xenografts to suppress prostate tumorigenesis. View this article at:
www.jci.org/articles/view/4053...9b25621b73ed2877356a

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