A tumor-suppressing gene can be harmful in some cancers

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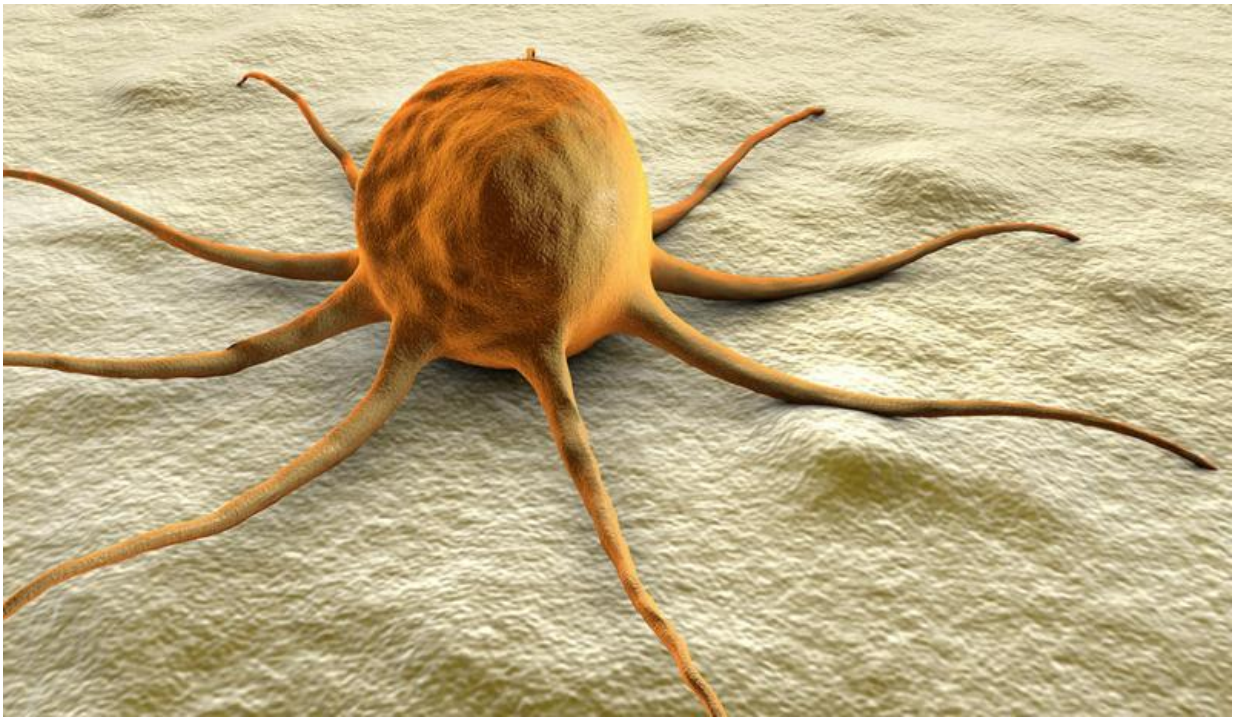

A cancer cell. Credit: stock.adobe.com

The TET2 tumor suppressor gene helps guard against blood cancers and perhaps protects against heart disease. Mutations in the gene affect about 1% of people over the age of 65, making them more susceptible to those diseases. But a new Yale-led study suggests there is a surprising flip side to the story: Knocking out the gene appears to help combat solid tumors.

TET2 suppresses the anti-tumor ability of the immune system, explained senior author Jun Lu, associate professor of genetics at the Yale Stem Cell Center and Yale Cancer Center.

In mouse models of cancer, eliminating the gene frees the immune system to attack solid tumor cells and reduce their size. Lu said targeting the gene in aggressive forms of cancer might make sense even if it slightly increases risk of contracting leukemia or atherosclerosis. The paper was published Aug. 15 in the journal *Immunity*.

More information: Wen Pan et al. The DNA Methylcytosine Dioxygenase Tet2 Sustains Immunosuppressive Function of Tumor-Infiltrating Myeloid Cells to Promote Melanoma Progression, *Immunity* (2017). DOI: 10.1016/j.immuni.2017.07.020

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