Medical Xpress

Altering how cancer cells respond to stress could lead to new anticancer drugs, research shows

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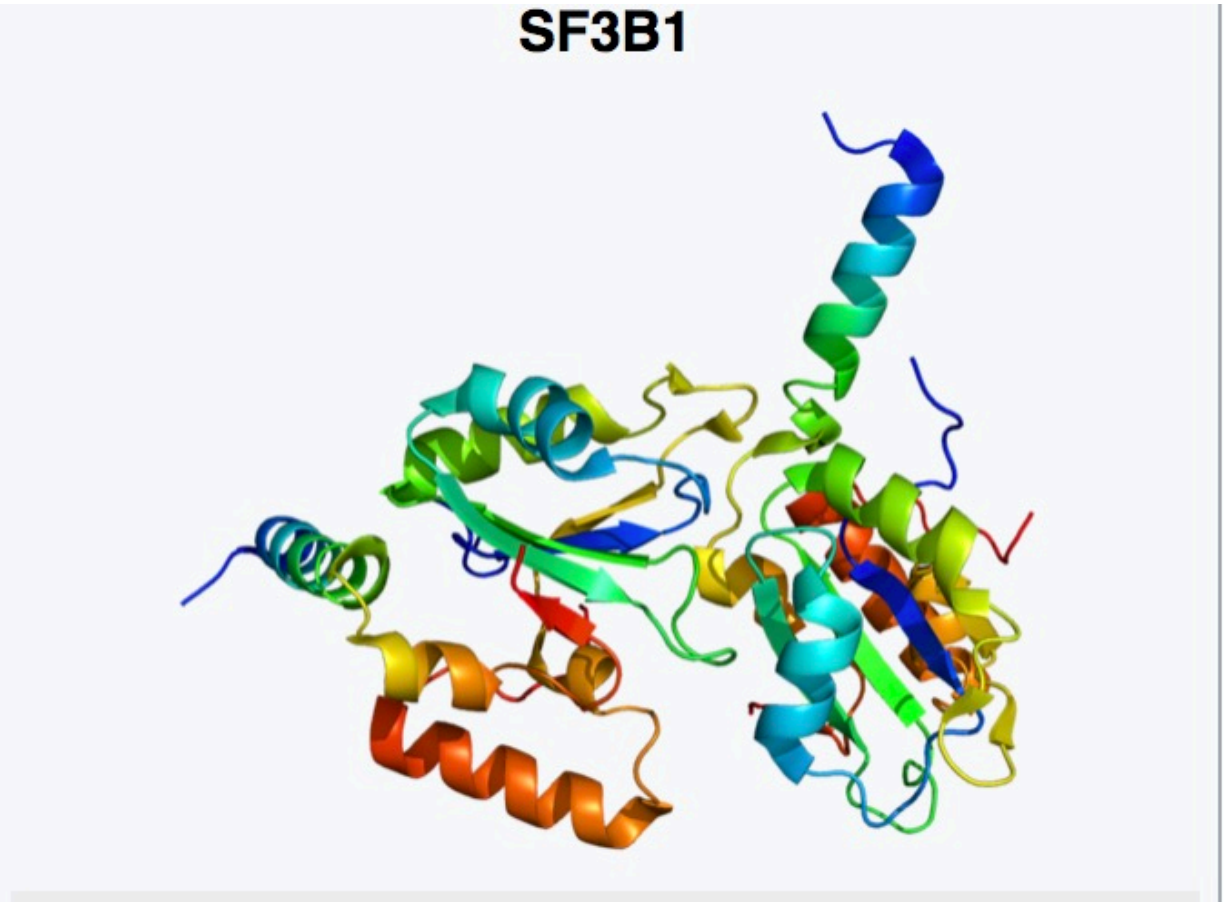

Gene SF3B1. Credit: Wikipedia

Cells exposed to stressful situations respond with precise defense mechanisms programmed in their genes. In breast cancer, these defenses are altered so that they are always on, but how that happens is unknown. Florida Institute of Technology scientists have now found one way cancer cells might manipulate these defenses.

New research recently published in the journal *PLOS ONE* by Florida Tech's Eric Guisbert, assistant professor of biological sciences, and Karen Kim Guisbert, a research scientist, highlights a new link between stress responses and cancer through the gene SF3B1.

SF3B1 mutates in breast cancer, chronic lymphocytic leukemia, and other forms of cancer. The new research shows that SF3B1 controls how cells respond to stress and could be a missing link explaining activation of stress defenses in cancer.

"The way SF3B1 regulates stress defenses is unlike any we have seen before," said Eric Guisbert, who is senior author of the study. "We are very excited about this new connection because it gives us a novel strategy for developing anticancer drugs."

Building on this research, Guisbert's laboratory, working in research collaboration with the Sanford Burnham Prebys Medical Discovery Institute in Orlando, is developing a method to find new drugs that disrupt cancer cells' ability to respond to stress. The project is funded by the Florida Translational Research Program and a medical research grant from the Community Foundation for Brevard, a Florida-based philanthropic organization.

Find the full *PLOS ONE* report here:
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0176382

More information: *PLOS ONE*: journals.plos.org/plosone/arti … journal.pone.0176382