Statins starve cancer cells to death
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More than 35 million Americans take statin drugs daily to lower their blood cholesterol levels. Now, in experiments with human cells in the laboratory, researchers at Johns Hopkins Medicine have added to growing evidence that the ubiquitous drug may kill cancer cells and have uncovered clues to how they do it.

The findings, say the researchers, enhance previous evidence that statins could be valuable in combating some forms of cancer. In unrelated studies, other Johns Hopkins Medicine researchers have studied how statins may cut the risk for aggressive prostate cancer.

"There have been epidemiological indications that people who take statins long term have fewer and less aggressive cancers, and that statins can kill cancer cells in the laboratory, but our research was not initially designed to investigate possible biological causes of these observations," says Peter Devreotes, Ph.D., Issac Morris and Lucille Elizabeth Hay Professor of Cell Biology.

Results of the new research appeared Feb. 12 in the Proceedings of the National Academy of Sciences.
cells' environment.

Normal human cells glowed brightly with the fluorescent tag, suggesting that these cells ingested protein from their surroundings regardless of whether the scientists added statins to the mix of nutrients and cells. However, human cancer cells with PTEN mutations took in almost no glowing proteins after the scientists added statins. The inability of the statin-treated cancer cells to make the protrusions needed take up proteins leads to their starvation.

Devreotes says his team plans further research on the effects of statins in people with cancer and compounds that block GGPP.