Building “genetic circuits” in cells could kill tumors by depriving them of oxygen

Imagine having cells in your body that can actively repel cancer in a way that makes it theoretically impossible for you to suffer from it.

Researchers at the U.K.’s University of Southampton…have engineered cells with a so-called “built-in genetic circuit” capable of producing a molecule for inhibiting the ability of tumors to grow and survive in the body.

“There are various defense mechanisms built into human cells, such as proteins that spot DNA damage, but there are also gaps in this defense system that are exploited by disease,” Professor Ali Tavassoli, one of the lead authors of the paper…“We were wondering if it is possible to equip human cells with the ability to sense and respond to a disease marker….”

In particular, they were interested in a protein called hypoxia-inducible factor 1 (HIF-1), which helps tumors keep growing in low-oxygen environments.

…

At present, the research is still in the early stages, and nowhere close to ready for human testing. However, it still represents an exciting development which in time could allow scientists to study the effect of inhibiting HIF-1 at key stages of tumor development.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: A ‘Built-In Genetic Circuit’ Could Fight Cancer By Starving Tumors of Oxygen