

Gene circuit triggers immune system to battle cancer

A research team at MIT has used synthetic biology to create a gene circuit that triggers the immune system to attack cancer when it first detects the signs of the disease.

The circuit works by only activating the immune response when two specific cancer biomarkers are detected. The new [study](#) was published in the journal Cell ... and represents an exciting step forward for synthetic biology and cancer research.

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When the circuit is activated, it secretes proteins that attract the cells of the immune system and directs them to attack the tumor cells. This includes surface T cell engagers, which direct the T Cells to destroy the cancer cells. Additionally, the circuit expresses a checkpoint inhibitor that removes the barrier to T cell activity, allowing it to spot the cancer cells and move in for the kill.

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Lastly, the team demonstrated that the circuit could be easily converted to target other kinds of cancer cells by changing the required inputs to trigger it. They identified promoters that were selective for breast cancer, which allowed the immune system to focus on that type of cancer over others.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: How Creating a Gene Circuit Could Help to Combat Cancer