## For synthetic biology, 2023 was a very opportune year

Nature is an important source of bioactive products, and therefore often a <u>source of new therapeutics</u>; over the last 30 years most anticancer, anti-infective and anti-bacterial drugs originated from natural sources, <u>like plants, fungi or bacteria</u>, and their derivatives. But developing a new therapeutic is <u>time-consuming</u>, <u>expensive and challenging</u>; it can take 10 to 15 years from target identification to approval, and cost as much as \$2.9 billion per drug, with only 1 in 5,000 targets making it to market.

Synthetic biology can aid the design of new therapeutics in two broad ways, says [professor of experimental anatomy Dr. Jamie] Davies: "One is epitomized by CAR T cells used to treat cancer: engineering human cells to have new properties that are useful, for example, the ability to mount a ferocious attack on a patient's tumor, and put them back into the body to do that job."

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other 'disruptive' innovations. Subscribe to our newsletter. <u>SIGN UP</u>

The second way that synthetic biology can aid drug discovery, says Davies, is engineering cells to perform the physiological role of another, for example, non-pancreatic cells to make insulin in response to blood sugar. This application is currently experimental and not yet used in humans.

This is an excerpt. Read the full article here