

Stealth technology could offer 'secure, selective and precise' delivery system for cancer drugs

Earlier this year, [researchers assembled an intelligent and autonomous nanostructure entirely out of DNA that delivered and released a cancer drug](#).

Cancer drugs are good at killing [cancer](#) cells, but they [hurt healthy cells too](#). By concealing the drug, like a tiny sword, in a nano-sheath made from DNA, the researchers have made a secure, selective, and precise carrier for medication, thanks to DNA's unique properties.

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It is a sticky but picky molecule. One strand of DNA is [made up of a chain](#) of different bases (the As, Gs, Cs, and Ts), and pairs with another DNA strand made from complementary bases (As stick to Ts, and Gs to Cs). Several studies have already exploited this selectivity for [cellular recognition by DNA molecules](#).

As such, any drug carriers made from DNA strands will be highly specific in where they bind to. This is the basis for the "smart" DNA drug carrier design. The idea is to feed a patient, in advance, short individual strands of DNA (called [aptamers](#)) whose ends are known to anchor onto cancer cell surfaces. Then, the researchers administer the drug carrier that has been assembled from DNA strands complementary to the aptamers. The aptamers draw the DNA drug carrier to the cancer cells like a beacon.

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