

Drug kills prostate tumor cells

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U.S. scientists have developed an experimental RNA-based drug -- the first of its kind -- that kills prostate cancer cells, without harming normal cells.

The drug, developed at Duke University Medical Center, uses a type of genetic material, called targeting RNA, to enter cancer cells, and then another type, called silencing RNA, to stop the expression of a protein that keeps the cells alive.

In tests in mice with prostate cancer, the drug shrank the size of their tumors by half, while tumors in control mice continued to grow, said study co-author Bruce Sullenger, director of Duke's Translational Research Institute and chief of the Division of Experimental Surgery.

The mice showed no side effects from the treatment, Sullenger said.

"This study represents the first step in creating an RNA-based drug for cancer," said lead author James McNamara, a postdoctoral fellow in experimental surgery. "It provides a 'proof of principle' that an entirely RNA-based drug can work with minimal side effects, and it shows it is possible to overcome many of the obstacles that have hampered the development of RNA-based drugs."

The study is reported in the current issue of Nature Biotechnology.

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