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## Patents Teresa Riordan

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A technique is said to ease attachment of tumors to mice, making them 'little cancer patients.'

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WASHINGTON  
**A**LTHOUGH the search for a way to mimic human cancers in laboratory animals has been under way for more than a century, scientists have been able to approximate the disease only crudely in mice and rats. The lack of a clinically relevant animal model is one reason that cures for cancer remain elusive.

But researchers with AntiCancer Inc., a small San Diego-based biotechnology company, said they had figured out how to make mice contract a wide range of human cancers: by sewing tiny bits of human tumors to a mouse's stomach or ovary or lung with silk sutures as slender as a butterfly's antenna.

"In essence, the mice become like little cancer patients," said Robert M. Hoffman, AntiCancer's president. "The transplanted human tumors grow, invade, spread and metastasize in the transplanted mice as the tumor did in the donor patient."

AntiCancer's researchers have used the technique to develop mouse models of a wide range of cancers, including colon, stomach, pancreatic, bladder, lung, ovarian, breast and prostate. The company received a patent for the technique last month.

The mice that AntiCancer uses are "nude" mice, which were first bred in the 1960's. Because of genetic mutations, they are bald and have little natural immunity to disease.

Researchers normally use these mice as cancer models by either inserting little chunks of human tu-

mor just under their skin or by breaking apart the tumor, mechanically and with enzymes, and then injecting it into the mouse's corresponding organ.

Both methods are imperfect. Although a subcutaneous tumor might grow quite large on the back of the mouse, it almost never spreads to other parts of the body, as cancer often does in humans. And the mice don't exhibit symptoms common to human cancer patients, like weight loss.

The second method is more effective but, Dr. Hoffman contends, the tumors often do not metastasize. "Tumors behave the way they do in part because of their architecture and because of neighbor cells," Dr. Hoffman said. "If you disrupt that, you change the behavior of the tumor very seriously."

Dr. Hoffman said that with the new procedure, surgeons operate on the mice under dissecting microscopes. Bits of tumor are first strung onto a suture, and then essentially tied to the outside of the organ.

The mice are already being used to test potential cancer drugs, some of which are now in clinical trials, Dr. Hoffman said.

"The survival rate of cancer hasn't increased significantly in 40 years or so," he said. "We hope this new mouse model will bring a more effective paradigm of drug discovery."

Ann Monosov and Xinyu Fu were granted patent 5,491,284, which was assigned to AntiCancer.