New Cancer Treatment Shows Promise in Testing

By [NICHOLAS WADE 2009](http://topics.nytimes.com/top/reference/timestopics/people/w/nicholas_wade/index.html?inline=nyt-per)

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A new method of attacking [cancer](http://health.nytimes.com/health/guides/disease/cancer/overview.html?inline=nyt-classifier) cells, developed by researchers in Australia, has proved surprisingly effective in animal tests.

The method is intended to sidestep two major drawbacks of standard [**chemotherapy**](http://topics.nytimes.com/top/news/health/diseasesconditionsandhealthtopics/chemotherapy/index.html?inline=nyt-classifier) [the chemical therapy typically given to people with cancer: the treatment’s lack of specificity and the fact that cancer cells often develop resistance.

In one striking use of the method, [reported online](http://www.nature.com/nbt/journal/vaop/ncurrent/abs/nbt.1547.html) Sunday in Nature Biotechnology, mice were [given tumors]  that [were]  highly aggressive and resistant to many drugs. All of the treated animals were free of tumor cells after 70 days of treatment; the untreated mice were dead after a month.

The lead researchers, Jennifer A. MacDiarmid and Himanshu Brahmbhatt, say their company, EnGeneIC of suburban Sydney, has achieved a similar outcome in dogs with advanced brain cancer. “We have been treating more than 20 dogs and have spectacular results,” Dr. Brahmbhatt said. “Pretty much every dog has responded and some are in **remission** [the cancer has apparently disappreared].” These experiments have not yet been published.

Cancer experts who were not involved with the research say that the new method is of great interest, but that many treatments that work well in laboratory mice turn out to be ineffective in patients.

Bert Vogelstein, a leading cancer researcher at [Johns Hopkins University](http://topics.nytimes.com/top/reference/timestopics/organizations/j/johns_hopkins_university/index.html?inline=nyt-org), called the method “a creative and promising line of research,” but noted the general odds against success.

“Unfortunately our track record shows that far less than 1 percent of our promising approaches actually [wind up helping] patients,” he said.

The EnGeneIC researchers said they had conducted successful safety tests in a large number of monkeys and will start safety trials in patients with all kinds of solid [tumors](http://health.nytimes.com/health/guides/disease/tumor/overview.html?inline=nyt-classifier) in three Melbourne [hospitals](http://topics.nytimes.com/top/news/health/diseasesconditionsandhealthtopics/hospitals/index.html?inline=nyt-classifier) next month. They said they had discussed licensing their technology with large pharmaceutical companies and others.

Stephen H. Friend, head of cancer research at Merck until early this year, said he had been following EnGeneIC’s work for more than a year, and praised the company for trying a method that others had written off without trying.

“I consider the approach is remarkable and more than **intriguing** [                            ],” said Dr. Friend, who is now at Sage Bionetworks in Seattle. But he warned that cancer cells are very **versatile** [adaptable] and can “evolve around any pressure you put on them,” so that no single approach is likely to afford a cure.

The EnGeneIC method uses minicells to deliver a variety of agents to tumor cells, including both anticancer toxins and [systems] for suppressing the genes that make tumors resistant to toxins.

The minicells are generated from mutant bacteria which, each time they divide, pinch off small bubbles of cell membrane. The minicells can be loaded with chemicals and coated with [antibodies](http://health.nytimes.com/health/guides/test/antibody-titer/overview.html?inline=nyt-classifier) that direct them toward tumor cells….

The...treatment **arrested** [stopped] tumor growth in mice implanted with either human colon or human breast tumors, and enabled mice with drug-resistant human uterine tumors to eliminate the tumors altogether.

“The technology looks very good,” said Bruce Stillman, president of the Cold Spring Harbor Laboratory on Long Island. It provides a general method of delivering chemicals to tumors, he said, especially those that are usually degraded in the bloodstream….