

## SCIENCE ON LINE

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### **New Cancer Therapy Kills Blood Vessels**

Like all animal tissues, cancerous tumors need blood to survive, and one of the hottest areas in cancer research is finding ways to block that blood supply. Now scientists have created a new therapy that destroys the blood vessels feeding tumors in mice, while leaving other blood vessels unharmed. Scientists say that the findings could eventually lead to new cancer therapies in humans.

Cancer researchers had high hopes when scientists reported in 1997 that two new drugs, angiostatin and endostatin, had prevented blood vessel growth and dramatically shrunk tumors in mice. Several of these so-called anti angiogenesis drugs are in clinical trials, and early results look promising. But these drugs all share a major drawback: Although they stop or slow tumor growth, they don't destroy existing blood vessels on the tumor. This ought to be possible because the inner walls of tumor vessels are covered with a protein called tissue factor (TF) not present in normal blood vessels.

Yale University biochemists Zhiwei Hu and Alan Garen exploited this discrepancy to create a new drug that seeks out tumor blood vessels and destroys them. The drug, known as icon, is a single compound consisting of two parts, one that recognizes blood vessels coated with TF and another that provokes the immune system to attack them. The researchers theorized that these two components together should attack tumor vessels without harming normal ones. To test icon, they injected a virus genetically engineered to produce it into seven mice with human prostate cancer.

In the 2 October early edition of the Proceedings of the National Academy of Sciences, they report that the tumors in the mice steadily shrank over about 200 days with only a \*small sliver remaining at the end of the experiment. In contrast, the tumors in seven control mice grew rapidly and they died within 63 days. The therapy was effective against human melanoma tumors in mice as well, and the scientists think that it can fight a broad range of cancers.

Harvard cancer biologist Judah Folkman, who studies anti angiogenesis drugs, says the researchers' "novel and elegant" approach may lead to new therapies that can be tested for human cancers. "This is

a very important paper," Folkman says.

--JOSH GEWOLB