

Cancer cures come and go, yet many [cancers](#) are now fully treatable with impressive results. On 5 May 1998 the Head of the US National Cancer Institute Dr Richard Klausner declared a major breakthrough in research with two new drugs, endostatin and angiostatin. Endostatin prevents growth of cancer cells, while angiostatin stops blood vessel formation in or next to cancer growths. (For latest news read on).

This followed Dr Judah Folkman's discovery that these two drugs wiped out all kinds of different cancer growths in mice. Dr Folkman is a professor and researcher at Boston's childrens hospital. He is concerned that his results will lead to false hope, although he is very encouraged.

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For years doctors have noticed that when a large cancer growth is removed, several new tumours often emerge. It is as if a group of cancer cells is making a cancer suppressant. They identified a cancer preventer in the urine of mice with large tumours, angiostatin, a well-known chemical used by the body as part of a blood clotting mechanism. They then extracted human angiostatin from human blood and tested it on mice with cancer. Ten mice were given salt water, and ten were given angiostatin. All had large cancer growths, which were removed. There was no recurrence in all ten with angiostatin treatment, while all the other mice developed fresh cancers.

But will this cancer cure work in humans? The answer is that we have no idea. The biology of mice is very different. However we do know that cancer in humans has a similar characteristic, where one growth seems often to prevent other growths developing. It would seem likely therefore that there are very similar mechanisms even if they operate in slightly different ways. All tumours have to stimulate normal tissue to make thousands of new blood vessels to supply the growth. Without this the tumour cannot enlarge. Any drug which targets this process will at the very least slow cancer growth.

Unfortunately laboratory tests are no substitute for human trials. Expect the first clinical tests in the next few months.

Whenever there is a story like this, those for whom time is running out rush to try anything, willing to take enormous risks. There will be no shortage of volunteers. One could argue that

even without further animal tests for toxicity, those with advanced cancer that wish to do so should be allowed, at their own risk, to try endostatin and angiostatin. If results are as dramatic as in mice, we will begin to see answers within weeks.

The likely outcome is that we will find these two drugs are effective against some tumours at a particular stage in the disease process. However, they may have terrible longer term side effects and would need (probably) to be taken for life.

Latest gene research has helped us understand that cancer is not a one-off accident to a single cell which divides forever, but is often a body condition where large numbers of cells become progressively unstable. These drugs are preventing new growths in mice where the original is removed - as well, perhaps, as preventing tiny offshoots of the original tumour from progressing. We will see.

In the meantime, expect the share price of Entromed Inc to settle back further after a sixfold jump to \$51.81, with further wobbles downwards as side effects and other problems emerge in the next 24 months. In any event it will be several years before the drugs could be widely approved because it will take that time to be certain of longer term effects.

In summary then, encouraging news for those with advanced cancer and those who care for them, but unlikely to provide a practical treatment in the next two to three years. In the longer term, with other advances in [genetics](#) and treatments like tamoxifen for women at risk of breast cancer, the outlook for cancer cure is improving all the time.

□ **Latest news:** □ Other scientists fail to reproduce endostatin and angiostatin results. However experiments were complex and further studies are needed to try to understand the differences in results in different laboratories. Observer: 15 Nov 1998. Moral: caution is always needed before over-reacting to individual headlines - see cancer news summary and Web TV on how to make sense of recent reports. Endostatin frenzy continues from cancer patients wanting the treatment. First human studies on safety have shown very few side effects but data on tumour response not released. These are still early days for clinical trials. Milwaukee Journal Sentinel 15 May 2000