

Prostate tumours can be 'jammed'

Oliver Moody Science Correspondent

Men whose prostate cancer has become untreatable with ordinary drugs may have a lifeline in the shape of tumour-jamming molecules.

The resistance breaker, which is already in clinical trials against cancers of the breast, lung and blood, appears to show promise as a way of treating the most stubborn and aggressive cases of prostate cancer.

Although most of the 48,000 men a year in Britain who have the disease diagnosed survive, it still kills about one in six.

When prostate cancer spreads to other parts of the body, it is extremely difficult to eradicate. Doctors often prescribe chemotherapy with hormone therapy to deprive the cancer of the testosterone it needs to grow. In most of

these patients, however, the cancer cells find some way of short-circuiting the body so that they can carry on loading up on testosterone.

These defences rely heavily on a long string of "chaperone" molecules called heat shock protein 90 (Hsp90), which helps cancers to stop their own biochemistry from running out of control and protects them against changes in temperature.

Scientists at the Institute of Cancer Research (ICR) in London have found that cracking down on this protein means that human cancer cells struggle to build the pipelines to suck up testosterone, making them much more vulnerable to conventional drugs.

When they injected cells from a drug-resistant human prostate tumour into mice and then gave them a dose of Hsp90 inhibitors, they found that the

molecules scrambled several key-cellular messages in the cancer — including the one that programmed its mechanism for grabbing testosterone.

The research is still at an early stage and Hsp90 inhibitors have been tried before against this tenacious form of cancer without much success, but scientists said they were encouraged.

Paul Workman, chief executive of the ICR and one of the paper's lead authors, said the molecules' great strength was that they silenced a whole range of lines of communication in cancer cells.

"It's an exciting discovery which adds a string to the bow of these cancer drugs, and means they could work against prostate cancers that have otherwise stopped responding to treatment," he said.

The study was published in the journal *Cancer Research*.

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