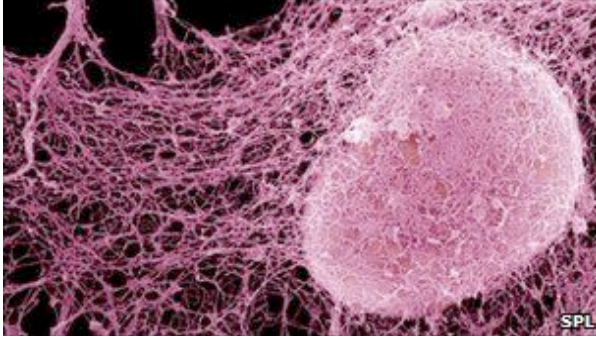


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# Blocking a gene stops cancer cells spreading

By James Gallagher Health reporter, BBC News



Blocking a gene could prevent cancer cells spreading

A gene which encourages cancer to move around the body has been discovered by the University of East Anglia.

Experiments on tissue cultures, published in [Oncogene](#), suggest that blocking it would prevent cancers spreading.

The researchers hope their work will lead to a new generation of cancer drugs within the decade.

Cancer Research UK said the study improved understanding of the disease, but was still at the laboratory stage.

There are treatments for primary cancers, but tumours have the potential to spread.

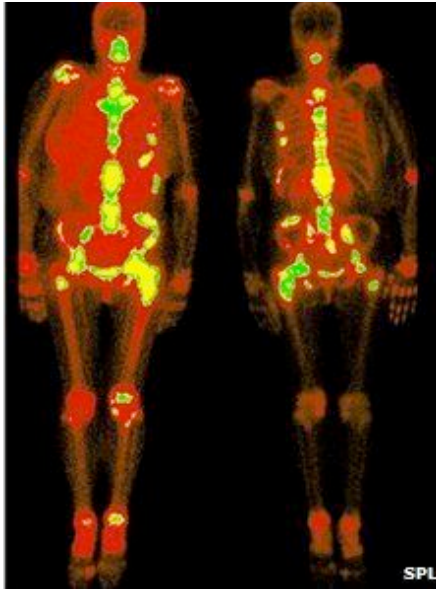
Cells can break off and travel around the body, through the bloodstream or lymph fluid, and start a new or secondary tumour where they land, a process known as metastasis.

Breast cancers are known to spread to lymph nodes, the bones and the lungs.

These secondary tumours are notoriously difficult to treat.

The rogue gene

The team at the University of East Anglia has found a gene which helps the cancer spread.



Breast cancer has spread to the spine, skull, pelvis, ribs, shoulders, hips and knees

The gene, WWP2, leads to the breakdown of an inhibitor that normally keeps cells in check.

The researchers showed, in tissue cultures, that without the inhibitor, Smad7, cancer progressed very quickly and spread.

Blocking the gene prevented that spread.

Dr Andrew Chantry, who led the study, said: "I think we're really onto something important if we can put a wall around a cancer and lock it in place.

"The discovery could lead to the development of a new generation of drugs within the decade that could be used to stop the aggressive spread of most forms of the disease."

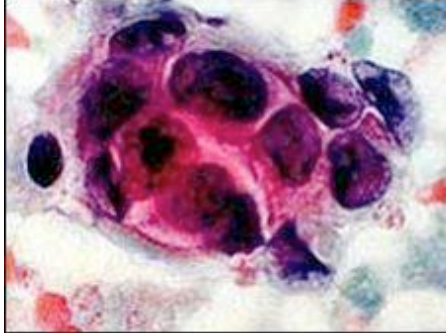
The team are now recruiting chemists to help them design a drug which could interrupt the gene's activity.

Dr Kat Arney, science information manager at Cancer Research UK, said: "Over recent decades researchers all over the world have discovered genes that drive the growth and spread of cancer, and this research adds one more to this ever-growing list.

"But, while these new results aid our understanding of the complexities of cancer and could point towards potential leads for future anti-cancer drugs, the work is still at the laboratory stage."

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## Enzyme behind cancer spread found



Breast cancer cells can spread to other parts of the body

**Scientists say they have identified an enzyme that helps cancer spread around the body.**

Cancer metastasis, where the cancer spreads from its original location, is known to be responsible for 90% of cancer-related deaths.

Institute of Cancer Research scientists have found that an enzyme called LOX is crucial in promoting metastasis, Cancer Cell journal reports.

Drugs to block this enzyme's action could keep cancer at bay, they hope.

The researchers studied breast cancer in mice, but are confident that their findings will apply to humans with other cancer types too.

**“ This new discovery provides real hope that we can develop a drug which will fight the spreading of cancer ”**

Lead researcher Dr Janine Erler

LOX (lysyl oxidase) works by sending out signals to prepare a new area of the body for the cancer to set up a camp. Without this preparation process the new environment would be too hostile for the cancer to grow.

Lead researcher Dr Janine Erler described the discovery as "the crucial missing piece in the jigsaw that scientists have been searching for."

She said it was the first time one key enzyme has been identified as responsible for effectively allowing the cancer to spread.

"If we can interrupt the body's ability to prepare new locations for the cancer to spread to, we can effectively prevent cancer metastasis.

"Cancer metastasis is very difficult to treat and this new discovery provides real hope that we can develop a drug which will fight the spreading of cancer," she said.

Dr Julie Sharp, Cancer Research UK's science information manager, said: "A better understanding of how cancer spreads is crucial to improving the treatment of the disease. This research takes scientists a step closer to understanding this major problem - the next stage will be to find out if the LOX protein can be switched off to stop cancer spreading."

