Medical Xpress

Vitamin A could prevent the spread of prostate cancer

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(Medical Xpress)—Vitamin A could help treat and prevent the spread of prostate cancer, according to research published today (Monday, April 15th) in *Oncogenesis*.

Scientists funded by Yorkshire Cancer Research at the University of York have discovered that retinoic acid – a chemical made from vitamin A which is supplied in our diet by carrots, green vegetables and liver – can turn specific genes within prostate cancer stem cells back on, reducing the ability of the cancer to invade surrounding tissue.

The findings suggest that Vitamin A related compounds could be used to enhance clinical treatments for prostate cancer.

Professor Norman Maitland, Director of the YCR Cancer Research Unit in the Department of Biology at York, said: "Cancer arises from healthy cells going wrong. Certain controls can be turned off which allows the cancer to progress. For example, normal cells gain the ability to grow and invade the surrounding tissues.

"We have found that specific 'twin' genes are turned off in malignant prostate cancer stem cells. When we turn them back on using retinoic acid, the cancer becomes less aggressive.

"All-trans retinoic acid is already used treat another type of cancer called acute promyelomcytic leukaemia (APL) and has been hugely successful in improving survival rates. For prostate cancer, our work suggests that

retinoic acid would not need to kill the cancer stem cells, but simply switch them to a more treatable form. Our discovery suggests a clinical use of this compound to treat prostate cancer."

Nearly 41,000 men are diagnosed with prostate cancer every year in the UK, and although around 80% survive for five years, more than 10,000 men die annually from the disease.

Professor Maitland added: "It has been known for many years that low vitamin A in samples of men's blood is associated with prostate cancer, but nobody knew the mechanisms involved. This is an exciting new development which links an element from our diet to prostate cancer stem cells."

Provided by Yorkshire Cancer Research

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