

Socking it to cancer

August 2 2006

An Australian research team has identified a gene that could be used to stop tumours growing by blocking their blood supply.

A study led by Professor Peter Koopman, from the Institute for Molecular Bioscience at The University of Queensland, showed that tumours in mice with a mutant form of the gene SOX18 actually stopped growing and became benign, unlike the lethal tumours that grew in normal mice.

Tumours only grow and spread if they can form a blood supply, and SOX18 is a key regulator of blood vessel formation. Mice with the mutant form of the gene were unable to develop blood vessels to feed the tumour.

“We were absolutely staggered to see that the tumours in these mice just stopped growing altogether at such a small size,” Professor Koopman said.

“Tumours of an equivalent size in humans would not be fatal, so if this discovery could be transferred to people, we could basically starve tumours before they could do much harm.”

Professor Koopman said that this type of gene therapy would have benefits over existing cancer treatments.

“A key advantage of using SOX18 in treating cancer would be that it is very, very specific in its role, unlike chemotherapy which has such broad

side-effects.

“SOX18 acts in new blood vessels, not existing ones, so interfering with it will only cut off blood supply to the growing tumour, and not to the rest of the body.”

The next step is to develop a drug that can mimic the effects of the mutant SOX18 gene in humans.

A method also needs to be developed that would deliver such a drug directly to the SOX18 gene in the middle of the cell. Recent advances in targeted gene delivery have left Professor Koopman hopeful that this is not too far off.

“Once these technical hurdles are overcome, SOX18 will be an attractive target for human cancer therapy,” he said.

The results of the study, which also involved researchers from the Hanson Institute, Adelaide, and the Queensland Institute of Medical Research, will be published today (Wednesday 2 August) in the *Journal of the National Cancer Institute*, a prestigious American cancer journal.

Source: University of Queensland

Citation: Socking it to cancer (2006, August 2) retrieved 18 April 2024 from <https://medicalxpress.com/news/2006-08-socking-cancer.html>

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