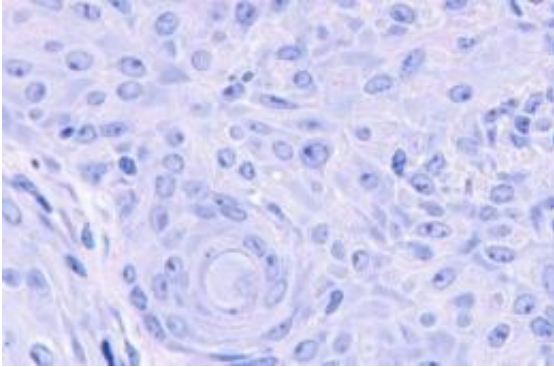


Stop signal discovered for skin cancer

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Developing SCC on the skin. Cells are growing in an uncontrolled fashion after damaging the tumour suppressor.

(Medical Xpress) -- An extraordinary breakthrough in understanding what stops a common form of skin cancer from developing could make new cancer treatments and prevention available to the public in five years.

In research published today in the leading international cancer journal, *Cancer Cell*, an international team of scientists led by Professor Stephen Jane and Dr Charbel Darido of Monash University's Department of Medicine at the Alfred Hospital, has discovered a gene that helps protect the body from squamous cell cancer (SCC) of the skin.

The Cancer Council estimates that two in three Australians will be diagnosed with [skin cancer](#) before the age of 70 with SCC being one of

the most common forms. Up until now, its genetic basis has not been well understood, with surgical treatments the only option.

Professor Jane said the team discovered that a gene with an important role in skin development in the foetus is missing in adult SCC tumour cells. Although the researchers initially focused on skin cancer, they found that the protective gene is also lost in SCC that arises in other tissues, including head and neck cancers, that are often associated with a very poor outcome for the patient.

"Virtually every SCC tumour we looked at had almost undetectable levels of this particular gene, so its absence is a very profound driver of these cancers," Professor Jane said.

In collaboration with Associate Professor Rick Pearson from the Peter MacCallum Cancer Center, the Monash researchers showed that loss of this particular gene knocks out the signal to stop skin cells from growing. Without this stop signal, the cells keep increasing in number and eventually forms a cancer.

Identifying this driver of cancer in skin and other organs provides a clear direction for developing strategies for both prevention and treatment in the relatively near future.

"Our research indicates that drugs already in clinical trials for other cancers may actually be effective in treating SCC - they just need to be applied to skin or head and neck cancers.

"This means that a number of the usual hurdles in getting therapies to trial have already been cleared, so patients could be reaping the benefits of this research in under five years," Professor Jane said.

"It's a similar case with prevention. There are strategies by which we

could increase the expression of this gene that will likely afford some protection from skin cancer, for example in the form of a supplement in sun-cream. The molecules that would increase this expression, are very well validated, so there would be few barriers to applying them in clinical trials."

Collaborating institutions on the paper include the Polish Academy of Sciences, Royal Melbourne Hospital, Walter and Eliza Hall Institute, Harvard Medical School, Peter MacCallum Cancer Centre, and the Alfred Hospital.

Provided by Monash University

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