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Media Statement

**WA DISCOVERY COULD AID CANCER TREATMENT**

West Australian researchers have discovered that a newly-identified type of microRNA could be used to tackle aggressive cancers by helping kill off cancerous cells.

A team led by Western Australian Institute for Medical Research (WAIMR) Deputy Director Professor Peter Leedman has revealed microRNA-7 (miR-7) can significantly reduce the growth of some cancer cells, as well as killing off others – particularly in cancers of the brain, lung, breast and prostate.

“MicroRNAs are very small, newly-identified RNA elements of the cell, and we’ve shown that one in particular – microRNA-7 (miR-7) – can play a profound role in reversing cancer cell growth,” he said.

“We’ve found miR-7 can knock-out an essential growth receptor for cancer, known as the epidermal growth factor receptor (EGFR), but it also has the ability to take-out multiple other parts of the EGFR growth pathway that promote cancer development.

“What’s special about this discovery is that we’ve shown, on a cellular level, that we can inhibit cancer cell growth and kill-off some cancerous cells very effectively with miR-7.”

Professor Leedman said the research showed miR-7, which is normally found in some healthy cells, especially the brain and pancreas, can be almost undetectable in cancerous cells.

“Without miR-7, some cancer cells have free-rein to grow, but when we add miR-7, the cancer cells start to die-off, which has the potential to assist current treatments, especially in rapid-growing, fatal cancers like brain tumours,” he said.

“In many patients, cancers don’t respond to treatments well enough or fast enough to totally eradicate the cancer, so what we are continuing to investigate is if miR-7 has the potential to make cancer cells respond better to these treatments - we still have a long way to go, but it’s a very exciting discovery.”

EGFR is a major target for cancer therapy because it is often associated with disease progression, resistance to chemotherapy and radiation therapy.

The discovery has been published in the *Journal of Biological Chemistry* on February 27.

WAIMR Director Professor Peter Klinken congratulated the team on their finding, which he said was a good demonstration of the global impact of medical research in WA.

“This is an exciting discovery for Professor Leedman’s team, WAIMR and the State, because it’s such a new area of research with great potential to help patients in the not-too-distant future and I look forward to its progress,” he said.

This work was supported by the National Health and Medical Research Council of Australia.

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