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Media Statement

**WA DISCOVERY A KEY TO BLOOD CELL DEVELOPMENT**

A West Australian research team has made the world-first discovery a ‘pied piper’ molecule within blood cells, called Liar, that leads other molecules into the nucleus of the cell, and could offer a key in treating prostate, breast and colon cancers as well as leukemia.

Uncovered by two research groups at the Western Australian Institute for Medical Research (WAIMR) led by Associate Professor Evan Ingley and Director Professor Peter Klinken, they have also identified the function of a known cellular enzyme, Lyn, as a switch that ‘turns on’ blood cell development.

The findings are published in the April 16 issue of *Blood*, the journal of the American Society of Hematology, the world's premier hematology journal.

Associate Professor Ingley said the findings were a leap forward in the understanding of how blood cells develop and divide, which could offer them a key to turning off cancerous cell growth.

“LIAR is like a key, which opens a pathway into the nucleus of a blood cell for a number of other molecules, allowing them to flow in – and these molecules are what signal the cell to develop and divide,” he said.

“From here, if we could control Liar, the hope is that we could use it to switch off the growth of abnormal, or cancerous, cells.

“Because Liar is present in every blood cell, this knowledge could help treat a huge range of conditions and diseases, but where it has most potential is in cancers of the prostate, breast, colon and blood where activity of the enzyme Lyn is heightened.”

The focus of the team’s investigations, Lyn has now been identified as an enzyme which modifies proteins that triggers the cell to develop further.

Associate Professor Ingley said in their investigations into blood cell development, Lyn became their main focus.

“We could see Lyn had a big influence on blood cell development, so to understand how it works, we looked at what it interacts with and the effects it has,” he said.

“What we then saw was Lyn interacting with Liar, and noticed it also interacted with other molecules that signal the cell to behave a certain way.

“Now we have identified Liar and Lyn and we know what they do, we’ll be looking at them more closely to find out how they may have the potential to help treat cancers.”

The research has been funded by the National Health and Medical Research Council, The Cancer Council WA and the Royal Perth Hospital Medical Research Foundation.

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