

Twin Findings Raise Hopes Of Improved Anemia Treatments

The findings are reported in two papers published in *Blood*, the journal of the American Society of Hematology, by a group of Australian scientists, led by Western Australian Institute for Medical Research (WAIMR) Director Peter Klinken and his Laboratory for Cancer Medicine.

One of the papers shows how the gene Hls5, which was discovered by Professor Klinken's team, affects red cell production.

"We have established that Hls5 impedes the maturation of immature red blood cells which has provided us with a much better understanding of what Hls5 does and how it is linked with the development of leukaemias and cancers," he said.

"Another arm of our research has revealed that thyroid hormone, which it was already established affected metabolism, also contributes to red blood cell formation — which was previously unknown."

Professor Klinken said both findings opened the door to exploring new ways of treating a range of anaemias.

"Anaemias develop where a person's blood is low in red blood cells so the two discoveries we have made may provide an insight into how to turn these conditions around," he said.

"Our findings indicate that minor changes in Hls5 levels can have a big impact and so the possibility of modulating this gene to generate new treatments is significant.

"As a number of patients don't respond to erythropoietin (EPO) — the current form of hormone therapy for anaemias — this new knowledge will hopefully lead to alternative treatments."

The research being conducted by Professor Klinken and his team is funded by the National Health and Medical Research Council and ASX-listed Perth-based biotechnology company BioPharmica.

Anaemia occurs when the amount of haemoglobin (which is found in red blood cells) drops below normal. Haemoglobin is necessary for the transportation of oxygen throughout the body.

It can be caused by iron or vitamin deficiency, blood loss, a chronic illness, a genetic or acquired defect or disease or through the use of some medications.

Adapted from materials provided by Western Australian Institute for Medical Research, via EurekAlert!, a service of AAAS.