

Pathologists create new ‘stretchy cell surface’ Putting a ‘spring’ in the step of cancer patients

Pathologists have discovered a way to expand the number of human blood-forming stem cells by growing them on a stretchy surface. This work paves the way for future treatments that may involve large numbers of therapeutic stem cells, according to experts at the Royal College of Pathologists of Australasia (RCPA).

Professor John Rasko, a haematologist and RCPA Fellow from the Centenary Institute and RPA Hospital, says that his team has discovered how to combine stem cells with tropoelastin in a laboratory, giving the cells a bed on which they can ‘spring’ with increased elasticity. It is thought that this may mimic the environment present in the bone marrow.

“What this means is that we are able to take human cells and actually expand their number, which means that down the track, we could use those cells for even more therapies than were previously possible,” says Professor Rasko.

“For example, it might mean that the cells harvested during a human bone marrow or umbilical cord blood cell transplant will be more-widely available than previously – meaning that we can treat more patients with the same amount of cells, or that less cells need to be used to provide the same level of treatment.”

The finding is good news for the many Australians who receive life-saving stem cell transplants (bone marrow and cord blood transplants) used in the treatment of various conditions such as leukaemia. The discovery was published in the leading biotechnology journal *Nature Biotechnology*.

“Our research will be used to improve the way blood-forming stem cells can be processed and hopefully lead to greatly improved outcomes for patients receiving stem cell transplants,” says Professor Rasko.

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