



CRC for Cell Therapy Manufacturing – feel-good work



CTM CRC's work is exciting for the field of regenerative medicine and cell therapy

Customer Story

Stem cell treatment for chronic wounds

The Australian Government's Cell Therapy Manufacturing Cooperative Research Centre (CTM CRC) has created a dressing to deliver adult stem cells to wounds and will, in the first instance, be used for the treatment of chronic foot ulcers in diabetics.

CTM CRC determined that the delivery of stem cells directly to the wound site was a key to producing an economical treatment for chronic ulcers and wounds. The brilliance of this targeted delivery approach is the use of a unique coating to the surface of the dressing, so that it can grow and detach therapeutic adult stem cells, and the dressing can then be applied directly to the ulcer or wound.

Normally, a cell therapy approach would necessitate the injection of a large number of stem cells around a fragile and painful wound. CTM CRC's dressing presents a kinder alternative to injections and is also more efficient since far fewer cells are required through this targeted approach. This means that the number of cells required for effective treatment can be reduced by hundreds of thousands, if not millions, resulting in significant cost savings.

The dressing developed by CTM CRC biomaterial scientists and cell biologists has been tested in a number of wound models – including small and large animals, with encouraging results. The adult stem cell being used with CTM CRC's patented dressing has been developed by one of CTM CRC's industry partners in the United States and is currently in clinical trials for a number of medical conditions.

“Diabetic foot and leg ulcers are a major problem in Australia and around the world and if untreated, will often lead to amputation. An efficient and cost effective cell therapy for these ulcers will mean more patients can be treated. It is a very exciting development for this type of condition.”

DR SHERRY KOTHARI, CHIEF EXECUTIVE OFFICER, CTM CRC

There are more than 200 million difficult-to-treat chronic wounds in individuals suffering from diabetic foot ulcers, pressure ulcers and chronic venous leg ulcers. In Australia, there are more than 400,000 chronic wounds at any given time.

The dressing is in the final phases of pre-clinical testing, which if successful, will lead to a first-in-man clinical trial in Australia in 2017.

CTM project to improve immune cell therapy process

CTM CRC's scientists and researchers are also working on the development of a 3-D scaffold for the safe and consistent production of a sufficient number of immune (T) cells for use in the treatment of a range of immune conditions.

Immunotherapies are one of the fastest growing areas of cell therapy and are being developed for the treatment of a range of conditions, including certain cancers. Cell-based immunotherapies require a patient's immune cells to be collected and grown in numbers large enough for a therapeutic dose before being administered back to the patient.

CTM CRC's novel technology aims to improve this process by providing a unique surface that can be integrated with existing commercial systems that are used to produce large numbers of immune cells. The technology, before being applied to human clinical use, is being tested in a number of commercial systems, through collaborations with public and private organisations in the United Kingdom and United States.

The testing phase of the immunotherapy cell therapies project involves collaborations with commercial and public sector organisations in Australia, the United States and the United Kingdom.

Visit [Cell Therapy Manufacturing CRC](#)

“These are very exciting times for the field of regenerative medicine and cell therapy and in three years, we have made significant progress. A core strength is our ability to tailor our technologies to any cell type, enabling CTM to be nimble in responding to the call for new therapies as the industry matures. Our manufacturing technologies could help to cement Australia’s position on the global map.”

DR SHERRY KOTHARI.

The Cooperative Research Centres (CRC) Programme

The Cooperative Research Centres (CRC) Programme is a competitive, merit-based grants programme that supports industry-driven multi-year research collaborations.

Since the programme's establishment, CRCs have developed important new technologies, products and services to solve industry problems and improve the competitiveness, productivity and sustainability of Australian industries.

CRCs bring together industry and research organisations to conduct and commercialise leading-edge research. They also produce graduates with hands-on industry experience. This is helping create a highly skilled workforce for the nation.

A new stream, CRC Projects or CRC-Ps, has been established for short-term industry-led research designed to benefit small and medium enterprises in particular. CRC-Ps will be smaller collaborations than a CRC, operating on shorter project timelines (up to three years) and smaller budgets than a CRC. CRC-Ps will have simpler governance and administration arrangements than a CRC.

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