ICC INNOVATION & COLLABORATION CENTRE

The Innovation & Collaboration Centre (ICC) is the University of South Australia's startup incubator.

The ICC engages with the community through the delivery of community events, workshops and programs which draw on the research and professional expertise of UniSA and our partners, to support the generation of new startups and the growth of existing companies.

The ICC is headquartered in Adelaide and has a regional centre in Whyalla, South Australia.

icc.unisa.edu.au

FURTHER INFORMATION

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carina biotech

Creating a future that defeats cancer

BENEFITS

- Empowering patients to fight their cancer through next-generation CAR-T technologies.

BACKGROUND

Carina Biotech was formed in 2016, as a spin-out of the highly successful CRC for Cell Therapy Manufacturing. Founding CEO, Dr Justin Coombs, conceived the idea of making a CAR-T cell targeted to a molecular marker described in the scientific literature as being present on many cancer cells but largely absent from healthy cells. He approached Professor Simon Barry's lab at the Women's & Children's Hospital and asked him if he could make this CAR-T cell, and gained seed funding from the Women's & Children's Hospital Foundation. Despite Professor Barry's lab having never made a CAR-T cell before, their expertise in T cell biology enabled them to successfully construct this CAR-T cell, which went on to demonstrate anti-cancer activity in a number of cancers in vitro and in small animal models.

Later, Dr Jane Rathjen joined the Carina team and she and Justin secured government grants and private equity investment, expanding the company. In mid 2020, Carina successfully sold the IP rights to its first lead CAR-T cell to UK/Australian biopharmaceutical company Biosceptre. Shortly after this, Justin chose to step down from the role of CEO and the company welcomed Dr Deborah Rathjen as its new CEO. Justin took on the role of Head of IP and Technology Development.

Carina Biotech now employs four staff in its corporate team and funds several positions in laboratories across the Women's & Children's Hospital, UniSA and the University of Adelaide. Carina's second CAR-T technology, targeted at a cancer stem cell, has shown promise as a potential therapeutic for a number of cancers. Carina is currently raising capital to take this CAR-T cell into the clinic – through the US FDA in a Phase I/II clinical trial for patients with advanced colorectal cancer.

CARINA BIOTECH

Dr Deborah Rathjen
Chief Executive Officer
and Managing Director

Prof. Shaun McColl
Vice President, Chemokine
Receptor Program

Dr Jane Rathjen
Head of Business
Development

Dr Justin Coombs
Head of IP & Technology
Development

Kathy Sharrad
Communications Manager

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TECHNOLOGY

CAR-T cell therapy has produced some stunning results against blood cancers, particularly paediatric acute lymphoblastic leukaemia (ALL). There is a large international research effort to apply this success to solid cancers, the majority of cancers diagnosed worldwide. So far, results have been mixed and there is yet to be a "breakthrough" in this field. Few companies in this space are producing a CAR-T cell targeted at a cancer stem cell marker. Many cancers, including colorectal cancer, are initially responsive to standard treatment (chemotherapy, radiotherapy, etc.) but very often return. It is thought this is in part due to the presence of cancer stem cells, that act as "seeds" of cancer that are resistant to chemotherapy/radiotherapy and are able to "re-seed" cancer.

This CAR-T cell is targeted at a marker found on a number of cancers as well as colorectal cancer.

This CAR-T cell has demonstrated improved tumour access and cell survival versus competitors; the in vivo (mice) studies show highly promising results. We have a tight timeframe to Phase I/II readiness (~18 months).

POTENTIAL MARKETS

There is a large initial target market (colorectal cancer) and numerous other potential indications.

PARTNERING OPPORTUNITIES

Carina has pending patent applications and trade secret proprietary technologies for CAR-T cell manufacturing.

IP STATUS

Carina has pending patent applications and trade secret proprietary technologies for CAR-T cell manufacturing.

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Government of South Australia

University of South Australia