ADVERTISING FEATURE

Biotech and medical industry

Emeritus Professor Alan Trounson (above) is co-founder of Cartherics, which is poised for clinical trials of a universal ovarian cancer treatment in 2025.

Rearming the body to fight cancer

Advanced research into immunological cancer treatments is moving fast, with work under way around the world to refine how best to use a patient's own immune system to effectively attack solid tumours in the breast, gut, pancreas and other organs.

Traditional cancer treatments incorporating chemotherapy and radiation have extreme side-effects. As well as killing cancer cells, these treatments lay waste to healthy cells.

Looking for less harmful and more cancer-specific therapies, medical researchers have turned to regimes based on the body's own immune response.

Most recently, potentially revolutionary chimeric antigen receptor (CAR) T-cell therapy has proved successful in treating a range of blood cancers. CAR-natural killer (NK) cell therapy is now being tried in the more difficult solid tumours in a range of human organs.

CAR-NK cells can be engineered to overcome the natural defences that exist within these tumours and recruit the body's own immune system to help eliminate them.

Australian biotechnology company Cartherics has a portfolio of cell-therapy cancer CAR-NK treatments made from genetically modified induced pluripotent stem cells (iPSCs).

Unlike other cell-based therapies, the Cartherics products are based on gene-edited stem cells that are infinitely expandable, fully characterised and capable of being engineered with specific enhancements which make them more effective.

Cartherics technology is backed by a strong patent portfolio and can generate multiple types of gene-edited immune cell products, including NK cells, T cells and macrophages.

Existing CAR-T treatments are tailored to the individual patient which makes them extremely expensive, so Cartherics is developing a universal – or "off the shelf" – CAR-NK treatment for solid tumours that can be produced efficiently and on demand, at far less cost.

Manufactured in bioreactors, each dose of the universal treatment can be made at a fraction of the patient-tailored CAR-T therapy cost of $150,000 or more.

Cartherics also plans to develop this CAR-NK therapy to reduce debilitating fibrotic tissue, or scarring, in organs.

Co-founded by Monash University Emeritus Professor Alan Trounson, a pioneer of IVF research worldwide and since renowned for his ground-breaking work with stem cells, Cartherics is poised for clinical trials of a universal ovarian cancer treatment in 2025, followed by trials of CAR-T and CAR-NK treatments for the solid tumours that invade other organs – kidneys, lungs, pancreas, prostate, and liver.

"We're starting with ovarian cancer, because we think that's one of the worst of the cancers," Trounson says. "If a patient doesn't respond to initial treatment, she has pretty grim prospects."

Solid tumours, such as ovarian cancer, are contained within a micro-environment that fights off the body's immune cells with false messaging that signals the cancer is not a foreign invader and should be left alone. The body's squadrons of attacking white blood cells, which usually fight infections and cancers, are deflected by this defensive micro-environment.

> "We want to open up these solid tumours – ovarian and lung cancers, breast cancers, all those which are really quite difficult to remove ... and recruit the patient's own immune system to attack them."
> Alan Trounson

Cartherics' CAR-NK treatments are designed to recognise the cancer, overcome the immune suppression barriers and aim NK cells into the tumour to bind to it and kill the cancer, Trounson explains. "We want the killer cells to release molecules to disrupt that tumour micro-environment. This leaves the tumour open to attack by external treatment and it will also recruit the patient's own immune cells to get back on the job of destroying cancer."

Blood cancer treatments have already proved CAR-T treatments can kill kilograms of cancer within a couple of weeks, Trounson adds.

"We want to open up these solid tumours – ovarian and lung cancers, breast cancers, all those which are really quite difficult to remove," he says.

"We want to target these tumours and recruit the patient's own immune system to attack them. I think it's going to work."

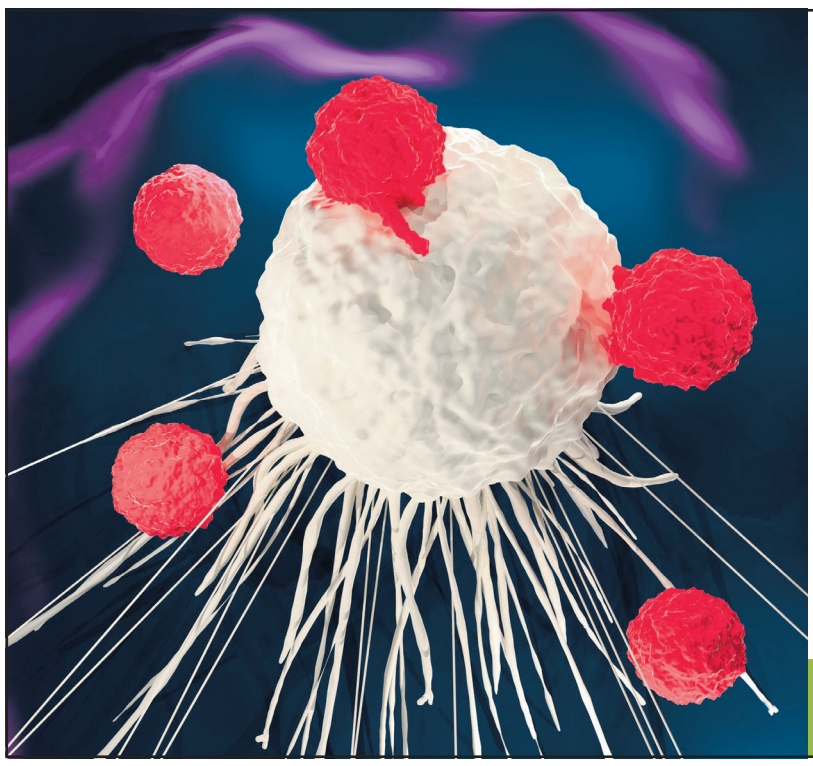
Immunology is the bold new frontier of cancer treatment, using the body's own defence mechanisms to fight abnormal cells, and the Cartherics CAR-NK cancer treatment takes immunological tumour treatment even further.

Treatments will comprise six doses over a couple of months, each comprising billions of gene-enhanced CAR-NK cells.

Trounson is optimistic the treatment will help beat a range of often fatal solid tumours, beginning with ovarian cancer. Difficult to diagnose and hard to treat, about 1000 Australian women die of ovarian cancer every year.

The international community has shown sustained interest in Cartherics' CAR-technologies for solid tumour treatment.

With animal model trials having shown that the company's ovarian cancer treatment works well, Cartherics plans to take the treatments into clinical trials for both CAR-T and CAR-NK cells in early 2025.



CARTherics

Rearming the body's immune system to fight cancer

- We're developing more precise and more cost-effective treatment options for patients with solid cancers
- Cartherics was established to leverage the founders' expertise and networks in stem cell biology, immunology and oncology to develop the next generation of cancer cell therapies
- Cartherics is currently undergoing a capital raise to support its ongoing development activities and to complete all regulatory and preclinical testing for the first clinical trials of its lead, "off-the-shelf" cell therapy for ovarian cancer that will begin in early 2025. Non-confidential IM available for download here: https://bit.ly/46crXcU or via QR code below
- Difficult to diagnose and hard to treat, about 1,000 Australian women die of ovarian cancer every year
- Cartherics presents a rare investment opportunity to gain exposure to both the near-term potential for individualised CAR-T products, the medium-term potential for off-the-shelf immune cell products and the possible future control of tissue fibrosis

Cartherics Pty Ltd
https://cartherics.com/
Phone: +61 3 9905 3990 Email: info@cartherics.com

Please scan QR code to download IM

G13B87535AA-141123