

**Cartherics Pty Ltd**  
*Rearming the body's immune system to fight cancer*

A large, light grey, stylized version of the Cartherics logo is centered in the background. It consists of two vertical bars with horizontal bars extending from their tops, forming a shape reminiscent of a caduceus or a stylized 'C'.

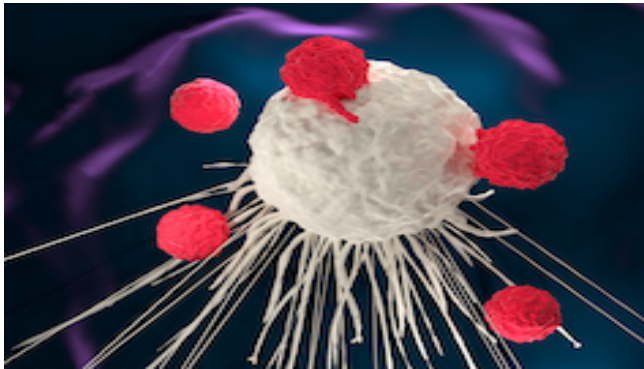
# **Non-confidential Investment Memorandum November 2023**

This Investment Memorandum contains forward-looking statements regarding the Company's business & the therapeutic & commercial potential of its technologies & products in development. Any statement describing the Company's goals, expectations, intentions or beliefs is a forward-looking statement & should be considered an at-risk statement. Such statements are subject to certain risks & uncertainties, particularly those risks or uncertainties inherent in the process of developing technology & in the process of discovering, developing & commercializing drugs that can be proven to be safe & effective for use as human therapeutics & in the endeavor of building a business around such products & services. Actual results could differ materially from those discussed in this document.

## Cartherics Pty Ltd

### *Rearming the body's immune system to fight cancer*

#### Cellular therapies – the latest advance in cancer treatment



While cancer remains one of the greatest challenges to human health and well-being, the past decade has seen the emergence of cell-based therapies as a powerful new treatment modality. Major advances have been made in manipulating and expanding key cells of the immune system, such as T cells and natural killer (NK) cells. Chimeric antigen receptor (CAR)-T cells, generated by modifying a patient's own T cells, have shown exceptional results (in some cases, apparent cures) in late-stage patients suffering from a range of blood-based cancers (leukemias, lymphomas and multiple myeloma). There are now six FDA approved patient-derived ("autologous") CAR-T cell products.

Despite these impressive results, the prospects for autologous CAR-T cells to fundamentally change the nature of cancer treatment are constrained. This is because the products are: difficult to manufacture; extremely expensive; only suitable for treating a single patient; and, to date, largely ineffective in solid tumors.

To address the limitations of autologous CAR-T cells, a number of companies are developing allogeneic immune cell therapies. These products are derived from sources other than the patient's own cells, such as healthy donors, cord blood or stem cells. The types of immune cells being developed include T cells and NK cells; both cell types play a significant role in eradicating tumor cells and virally-infected cells. These allogeneic immune cell products can be manufactured in batches sufficient to treat tens to thousands of patients and, when generated from stem cells, product supply is potentially unlimited.

*Cartherics presents a rare investment opportunity to gain exposure to both the near-term potential for autologous CAR-T products and the medium-term potential for allogeneic immune cell products.*

#### Cartherics

[Cartherics](#) is a private biotechnology company based in Melbourne, Australia. It was founded by Prof Alan Trounson (IVF pioneer, ex-President, California Institute for Regenerative Medicine), Prof Richard Boyd (expert immunologist, ex-Monash University), Dr Ian Nisbet (ex-CSL Ltd, ex-Millennium Pharmaceuticals, Inc), Mr Bob Moses (ex-CSL Ltd) and Dr Peter Hudson (antibody expert, ex-CSIRO), all of whom remain actively involved with the Company. To date, Cartherics has raised a total of ~AU\$44M in private investment and competitive grant funding. It employs around 35 highly skilled scientists and support staff, located in a state-of-the-art R&D facility opened by the Company in mid-2022.



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. The Company has a portfolio of "off-the-shelf" cell therapy products for the treatment of cancer, derived from genetically modified induced pluripotent stem cells (iPSCs). The initial product focus is on NK cells due to their natural cytotoxicity and favorable safety profile but the Company's technology is readily applicable to other immune cells, such as T cells and macrophages.

#### Cartherics' development product portfolio

##### 1. Autologous CAR-T product – CTH-004 [clinical trials in Australia and China due to commence in 2024/25]

Although Cartherics' primary focus is directed towards its portfolio of "off-the-shelf" products, in validating its CAR and gene editing technology, it demonstrated that autologous CAR-T cells bearing the same gene modifications as CTH-401 (below) were extremely effective in animal models of ovarian cancer. The Company has entered into an R&D collaboration with the Peter MacCallum Cancer Centre (PMCC) to scale up the manufacturing process for this product (CTH-004) and conduct an initial clinical trial in ovarian cancer patients (at no cost to Cartherics). It has also licensed Chinese development and commercialisation rights for CTH-004 to Shunxi Holding Group Ltd (Shunxi).

## 2. Lead allogeneic product – CTH-401 [clinical trials in Australia due to commence in 2025 under US IND]

CTH-401 is an NK cell product generated by the differentiation of iPSCs that have been genetically modified to (i) introduce a CAR, and (ii) inactivate two genes involved in a key immunosuppressive pathway. The CAR targets TAG-72, a well-validated tumor marker that is widely expressed in a range of solid tumors, including ovarian, gastric, colorectal and pancreatic cancers. Cartherics has demonstrated that CTH-401 is very effective in killing ovarian cancer cells in both tissue culture and animal models. These studies demonstrate that addition of the CAR and removal of the immunosuppressive genes to create CTH-401 enhances the efficacy of Cartherics' iPSC-derived NK cells. The Company has developed a process for differentiating NK cells from iPSCs for scalable manufacture and is in the early stages of technology transfer to its contract manufacturer, Cell Therapies Pty Ltd, to commence work on manufacturing product for initial human clinical trials. Cartherics has had initial discussions with the US FDA on its development plans for CTH-401 and intends to file an investigational new drug (IND) application in 2025.

## 3. Allogeneic product pipeline

In addition to progressing CTH-401 towards the clinic, Cartherics is expanding its R&D pipeline to generate NK cells with additional modifications to enhance function and/or direct activity against tumor targets other than TAG-72. These modifications include dual CARs to prevent tumor escape and potentially recruit the patients' own immune cells to enhance tumor destruction. In addition, the Company has developed a differentiation process for generating functional T cells from iPSCs, which will form the basis for a further set of immune cell products.

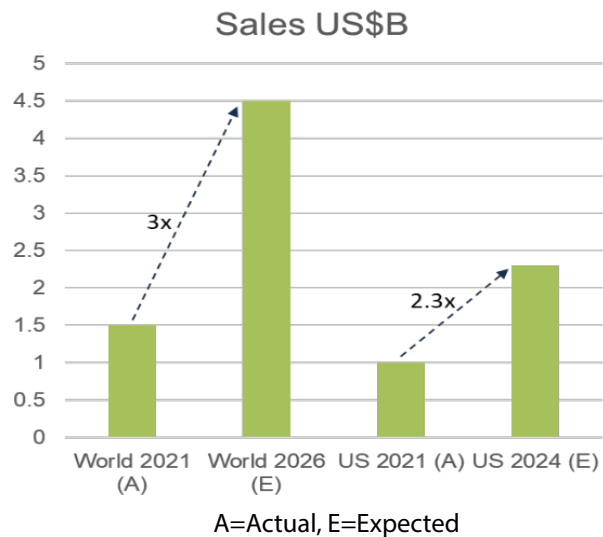
## Target cancers



Cartherics' initial target indication is ovarian cancer, which is the second most common gynecological cancer and the fifth leading cause of cancer death in women. TAG-72, the Company's initial tumor target, is present on 85-90% of ovarian cancers. Most cases are diagnosed in the later stages of disease with a poor prognosis. The 5-year survival rate for ovarian cancer is 48% but, for patients with metastatic disease, this drops to just 30%. The need and market potential for new treatments is substantial.

In addition, TAG-72 (and other Cartherics tumor targets) are expressed in a range of solid tumors beyond ovarian cancer, including gastric, colorectal and pancreatic cancers). Therefore, the potential market for Cartherics' products is much greater than ovarian cancer alone.

Market for branded drugs in ovarian cancer



## Competition

"Off-the-shelf" immune cell products for the treatment of cancer is a highly competitive field, with a number of companies worldwide developing such products. Cartherics is strongly positioned, since it is working on novel gene modifications protected by international patents and patent applications. Also, unlike almost all other companies in the field, Cartherics is focusing its efforts solely on solid tumours, where there is the greatest medical need and market potential.

## Investment opportunity

Cartherics is seeking to raise AU\$20M to support its ongoing development activities. This capital will allow the company to file its IND for CTH-401 and complete all activities in preparation for the first CTH-401 clinical trial in late 2025. By this time, the Company expects that PMCC and Shunxi will have commenced clinical trials for CTH-004 in Australia and China, respectively. Filing of the CTH-401 IND and commencement of the CTH-004 clinical trials should drive an appreciable increase in the Company's valuation. Therefore, investors in the current capital raising not only have the opportunity to invest in a leading company in the development of cutting-edge cancer treatments but also to do so at an attractive valuation ahead of major "value inflection points".

## Further information

A detailed Investment Memorandum (IM) is available under cover of a confidential disclosure agreement (CDA).

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