Prescient Licenses Technologies from University of Pennsylvania and Oxford University to Create Innovative Universal CAR Platform

Highlights:

- **PTX obtains global, exclusive licence from University of Pennsylvania ("Penn") for an innovative universal immune receptor platform for the development of innovative cell therapies.**
- **PTX also has a global, non-exclusive licence from Oxford University to use the novel molecular binding system that is complementary with the Penn technology.**
- **PTX plans to incorporate the technologies from Penn, Oxford University and other assets, to build a universal chimeric immune receptor platform termed OmniCAR for next generation cell therapy product development.**
- **OmniCAR will enable in-house development of next generation engineered cell therapies and create opportunities for collaboration and business development in the cell therapy field for PTX.**
- **PTX's long term goal is to harness OmniCAR's innate adaptability and control to develop novel cell therapy products for new indications, and improve the cost, time and of effectiveness of delivering cell therapy products.**

MELBOURNE 26 May 2020 – Prescient Therapeutics (ASX: PTX) ("Prescient" or "The Company"), a biotechnology company developing personalised medicines for cancer, has signed an exclusive global licensing agreement with the Trustees of the University of Pennsylvania ("Penn") for an innovative universal immune receptor technology platform. The platform, currently in the pre-clinical development stage, was invented at Penn by labs of Dr. Daniel J. Powell, Jr. and Dr. Andrew Tsourkas.

In addition to the Penn agreement, Prescient has also obtained a global, non-exclusive licence from Oxford University to use the SpyTag/SpyCatcher molecular binding system employed by the platform.

PTX will incorporate the universal immune receptor technology licensed from Penn, along with Oxford University's molecular binding system and other assets possessed by PTX to build a universal cell therapy platform termed OmniCAR for next generation cell therapy product development, including next-generation CAR-T.

Engineered cell therapies have heralded a genuine paradigm shift in cancer treatment, by genetically modifying a patient's own cells to recognise and kill cancer cells that are otherwise hidden from the patient's immune system. Penn is recognised as a pioneer and global leader in the field.

The OmniCAR program seeks to dramatically enhance the safety and efficacy of current generation CAR therapies and will enable PTX's in-house development of next-generation cell therapies. It will also create opportunities for collaboration and business development in the cell therapy field for PTX.

The terms of the licensing agreement are non-dilutive for Prescient shareholders with no immediate material financial impact for the Company as a result of the signing of the agreement. Licensing payments include an upfront fee, and industry standard milestones mostly linked to achievement of key steps in the clinical development and regulatory approval of resultant products, and royalties on future commercial sales. The initial pre-clinical development program for OmniCAR will be conducted within Prescient's current budget.

Prescient Therapeutics CEO Steven Yatomi-Clarke said, "This is a transformative achievement for Prescient that allows the Company to move quickly forward with the development of innovative new cell therapy products for oncology. There are significant medical and commercial benefits for companies that can develop improved cell therapy products. It is particularly exciting, for example, for us to progress this revolutionary technology for attacking solid tumours, as well as liquid cancers. We believe that OmniCAR technology is uniquely placed to help us advance development of better cell therapies for a wide range of cancers with unmet need."

"The license agreements with Penn and Oxford align perfectly with PTX's objective of developing personalised cell therapy medicines and complements our targeted therapy pipeline. We are already working on leveraging our targeted therapy expertise in other cell therapy applications."

Penn Associate Professor Daniel J. Powell, Jr said, "The innovations in cell therapy have proven to be a genuine turning point in the history of medicine, but it is not without its challenges. We believe that this universal immune receptor platform technology has the potential to overcome many of the challenges currently faced in cell therapy product development. The technology is designed to target multiple antigens with the one cell therapy product, as well as giving clinicians more ability to control cell therapy product activity post infusion. Accordingly, this could open up new applications for engineered cell therapies."

Penn Professor Dr. Andrew Tsourkas, said, "This unique technology was born from a collaboration between experts in diverse fields, from biomedical engineering to T-cell biology. Prescient now brings additional diversity and experience to the advancement of this program, and we look forward to the next stages of translational development of this exciting platform technology."

Background

In recent years, engineered cell therapies have heralded a genuine paradigm shift in cancer treatment, by genetically modifying a patient's own cells to recognise and kill cancer cells. Cell therapy treatments have generated unprecedented response rates for patients with certain types of haematological cancers. However, many of the current cell therapy approaches also face considerable challenges, including manufacturing, safety and adaptability, that can limit their broader use. In particular, clinicians have no control over conventional cell therapy products after they are infused into a patient, creating significant safety concerns if toxicities are observed. Furthermore, many conventional cell therapies can only be directed to target a single cancer antigen, limiting their effectiveness when the cancer further mutates or where cancers express different antigens, which is especially relevant in solid tumours.

How the OmniCAR platform works

The OmniCAR platform seeks to overcome several shortcomings of current cell therapies. OmniCAR creates modular chimeric immune receptor cells that decouple antigen recognition from downstream signalling (Figure 1). Cells expressing a portion of the chimeric immune receptor and the targeting ligand (or "binder") can be administered separately, and then covalently bind after infusion to form a fully armed cell therapy product (Figure 2). It employs the unique SpyTag/SpyCatcher covalent binding system – akin to molecular velcro – which has also been licensed by Prescient from Oxford University for use in the OmniCAR system.

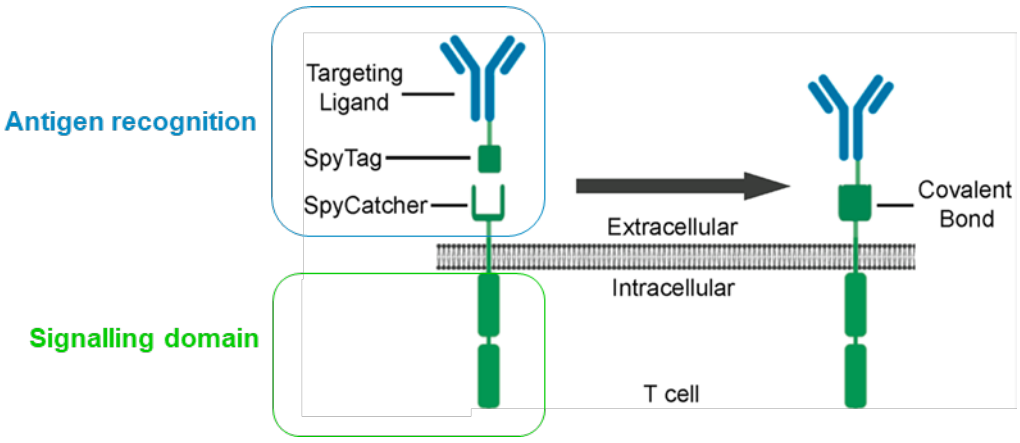

Figure 1: OmniCAR's modular cell therapy product. Targeting ligand (binder) can be loaded separately to engineered immune cells. The binder is tagged with SpyTag that covalently binds to the counterpart SpyCatcher on the surface on the engineered cell therapy product (e.g. a T-cell).[1]

[1] Adapted from Powell, DJ *et al*, JACS; 2020

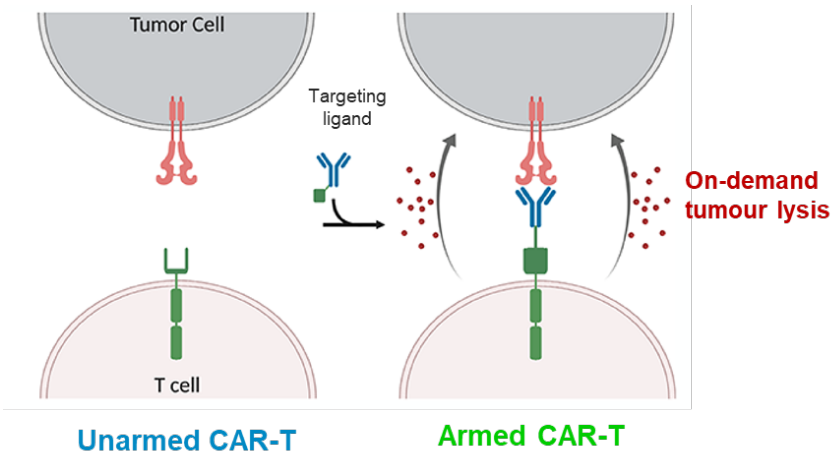

Figure 2: OmniCAR creates on-demand tumour killing. Unarmed T-cells remain inactive until the binder is administered. Once armed, the CAR-T cell is capable of binding to and killing tumour cells[2].

OmniCAR benefits

OmniCAR is designed to offer control and flexibility that is beyond the reach of current cell therapies like CAR-T. OmniCAR is being developed to provide clinicians with control over cell therapy expression in vivo, by allowing them to tune cell therapy activity either up or down post-infusion, and to also enable them to switch off cell therapy activity altogether by ceasing administration of binders (i.e. a built-in "kill switch").

OmniCAR cell therapy products are being designed to be armed against multiple targets sequentially or simultaneously by simply switching out the binder, which may be especially important in cell therapies making better headway into the challenging field of solid tumours.

As the industry attempts to drive down the cost and time of delivering cell therapy products to patients, OmniCAR's flexibility and control will be an increasingly valuable tool, by seeking to eliminate the need for multiple manufacturing runs per patient, and its potential compatibility with allogeneic ("off the shelf") cell therapy products. OmniCAR is potentially compatible with many cell therapy approaches including T-cells, NK cells; macrophages and stem cells.

Investor call

Prescient will host an investor call on 26 May at 11am AEST. Those wishing to participate can click the link below:

https://prescienttherapeutics.investorportal.com.au/live-investor-briefing/

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About Prescient Therapeutics Limited (Prescient)

Prescient Therapeutics is a clinical stage oncology company developing personalised medicine approaches to cancer, including targeted and cellular therapies.

Cell Therapies

OmniCAR: is a universal immune receptor platform enabling controllable T-cell activity and multi-antigen targeting with a single cell product. OmniCAR's modular CAR system decouples antigen recognition from the T-cell signalling domain. It is the first universal immune receptor allowing post-translational covalent loading of binders to T-cells. OmniCAR is based on technology licensed from Penn; the SpyTag/SpyCatcher binding system licensed from Oxford University; and other assets.

The targeting ligand can be administered separately to CAR-T cells, creating on-demand T-cell activity post infusion and enables the CAR-T to be directed to an array of different tumour antigens.

OmniCAR provides a method for single-vector, single cell product targeting of multiple antigens simultaneous or sequentially, whilst allowing continual re-arming to generate, regulate and diversify a sustained T-cell response over time.

Cell Therapy: Prescient has several other initiatives underway to develop new cell therapy approaches.

Targeted Therapies

PTX-100 is a first in class compound with the ability to block an important cancer growth enzyme known as geranylgeranyl transferase-1 (GGT-1). It disrupts oncogenic Ras pathways by inhibiting the activation of Rho, Rac and Ral circuits in cancer cells, leading to apoptosis (death) of cancer cells. PTX-100 is believed to be the only RhoA inhibitor in the world in clinical development. PTX-100 is currently in a PK/PD basket study of hematological and solid malignancies, focusing on cancers with Ras and RhoA mutations. In a previous Phase 1 trial in advanced solid tumours, PTX-100 was well tolerated and achieved stable disease.

PTX-200 is a novel PH domain inhibitor that inhibits an important tumour survival pathway known as Akt, which plays a key role in the development of many cancers, including breast and ovarian cancer, as well as leukemia. Unlike other drug candidates that target Akt inhibition which are non-specific kinase inhibitors that have toxicity problems, PTX-200 has a novel mechanism of action that specifically inhibits Akt whilst being comparatively safer. This highly promising compound has encouraging Phase 2a data in HER2-negative breast cancer; Phase 1b/2 in relapsed and refractory AML and Phase 1b in recurrent or persistent platinum resistant ovarian cancer:

Find out more at ptxtherapeutics.com, or connect with us via Twitter @PTX_AUS and LinkedIn.

The Board of Prescient Therapeutics Limited have approved the release of this announcement.

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Supplemental COVID-19 Risk Factors

Please see our website : Supplemental COVID-19 Risk Factors