

### Building a pipeline of expertise

Chimeric Therapeutics (ASX:CHM) is a clinical-stage cell therapy company focused on developing and commercialising a range of chimeric antigen receptor T (CAR T) cell therapies targeting haematological cancers and solid tumours. CHM was founded in 2020 by its Executive Chairman, Paul Hopper, and listed on the ASX on 18 January 2021, raising A\$35m from the sale of 175m shares at A\$0.20/share. At the time of the IPO, CHM had licensed from the City of Hope (COH) Cancer Centre in Los Angeles the CLTX CAR T targeting solid tumours. CHM has subsequently expanded its portfolio to include CDH17 CAR T, secured from the University of Pennsylvania, which is being studied for use in the treatment of gastrointestinal cancers and neuroendocrine tumours. CHM intends to develop and commercialise its CAR T therapies for its own use, for a possible licensing or distribution arrangement, or possible sale to a leading global pharmaceutical company. We have valued CHM at a mid-case of A\$243m or A\$0.74/share (A\$0.67/share fully diluted for all options), using a risked NPV based on our assumptions for CLTX CAR T therapy for recurrent GBM, which is currently in Phase I trials. Our valuation range is from A\$0.50/share to A\$0.93/share on the current share count. We expect to revisit the portfolio valuation as the company progresses these assets beyond the pre-clinical stage.

### Two world-class partners in discovery

CHM is the only company listed on the ASX conducting human clinical trials with CAR T cell therapy. CHM has licensed the CLTX CAR T from the City of Hope Cancer Centre in Los Angeles for the treatment of patients with glioblastoma, as well as to research additional indications for the CLTX CAR T. The CLTX CAR T therapy is in a Phase I clinical trial which has been designed with four dose levels and studies both single and dual routes of administration of cells. In addition, CHM has exclusively licensed the pre-clinical phase CDH17 CAR T from the University of Pennsylvania, the leading university for cell therapy patents. CDH17 CAR T is being studied in treatment of gastrointestinal cancers and neuroendocrine tumours. The CHM strategy is to build a pipeline of therapies which can help mitigate the high risk associated with biotechnology discovery, development and commercialisation. CHM has assembled a team with significant depth of experience in CAR T cell therapies, including experience with four of the five CAR T cell therapies currently approved by the FDA. The company is also actively looking for additional opportunities.

### Several milestones reached since IPO

Since listing, CHM has passed several milestones including: adding significant expertise to the leadership team; receiving US FDA Investigational New Drug (IND) approval to begin Phase I trials with its CLTX CAR T cell therapy; commencing the CLTX CAR T Phase I trials including the successful first dose cohort of four patients with a 75% disease control rate with up to eight weeks of durability, no dose limiting toxicities, and tumour recurrence prevented at sites where CLTX CAR T cells were infused while tumour recurrence occurred at sites without CLTX CAR T cell infusion (ASX announcements, 15 and 22 November 2021); initiating the second dose cohort for the CLTX CAR T Phase I trial following early encouraging results from the first dose; licensing a new CAR T therapy from the University of Pennsylvania; having its patent covering CLTX technology used in CHM 1101 approved by the EU patent authority; and has commenced manufacturing of its CDH17 plasmid (the first step toward readiness for a Phase I trial).

### Mid-case valuation of \$0.74/share, range of \$0.50-\$0.93/share

We have applied a risk-weighted valuation to our forecasts for the GBM opportunity, arriving at a valuation range of \$0.50-\$0.93/share with the mid-point at \$0.74/share, based on the current share count. On a fully diluted basis for all options on issue, the mid-point valuation is \$0.69/share. Our valuation is solely based on the opportunity for CHM 1101 for recurrent glioblastoma. Further upside could be obtained from the advancement of CHM 1101 to Phase II with GBM; the commencement of a Phase I frontline GBM study; the application of CHM 1101 to other indications; the advancement of CDH17 CAR T from pre-clinical stage to Phase I and beyond; and from the acquisition of additional portfolio opportunities.

Biotechnology

29<sup>th</sup> November 2021

#### Share Details

ASX code	CHM
Share price	\$0.26
Market capitalisation	\$86.1M
Shares on issue	331M
Net cash at 30-Sept 21	\$17.4M
Free float	~25.8%

#### Share Performance (Since Listing)



#### Upside Case

- Positive result from Phase I trial with CHM1101
- Approval to commence Phase I trial with CHM2101
- Success with additional pre-clinical studies to advance an indication for IND approval

#### Downside Case

- Underperformance in safety or efficacy of CHM1101 in Phase I trial
- Not receiving IND approval for CHM2101
- Patent applications rejected for pipeline IP

#### Board of Directors

Paul Hopper	Executive Chairman/ Founder
Jennifer Chow	Managing Director/ CEO
Leslie Chong	Non-Executive Director
Dr Lesley Russell	Non-Executive Director
Cindy Elkins	Non-Executive Director
Dr George Matcham	Non-Executive Director

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## Chimeric Therapeutics Limited

**Chimeric Therapeutics is a cell therapy company involved with the discovery, development and commercialisation of novel cell therapies. The company is currently focused on CAR T cell therapies primarily with indications for solid tumours. CHM has licensed two technologies from two world-leading research centres: CLTX CAR T (CHM 1101) from the City of Hope Cancer Centre in Los Angeles; and CDH17 CAR T (CHM 2101) from the University of Pennsylvania. Since listing on the ASX in January 2021, the company has advanced on several fronts including: expanding its C-suite capability in cell therapy development and commercialisation; securing US FDA approval to begin Phase I trials of its CLTX CAR T cell therapy; receiving encouraging results from the first dose of the four-dose programme designed for Phase I of its CLTX CAR T clinical trial including no dose-limiting toxicities, a 75% disease control rate with up to eight weeks durability, persistence of CLTX CAR T cells shown throughout treatment and tumour recurrence prevented at sites where CLTX CAR T cells were infused (ASX releases, 15 and 22 November 2021); and expanding its portfolio range with its CDH17 CAR T licensing arrangement. CHM is currently running a Phase I trial with CHM 1101 targeting recurrent glioblastoma, and pre-clinical studies with CHM 1101 for additional solid tumour indications. CHM 2101 is in pre-clinical studies for a range of gastrointestinal cancers. CHM has also received patent approval from the European Patent Office for its CLTX CAR T cell therapy.**

### Investment Case

In our view, CHM has the opportunity to achieve success for the following reasons:

- The company has assembled a highly-experienced and -credentialed team, with specific expertise in cell technology development and commercialisation of CAR T cell therapies at established biotech firms. Members of the senior management team have been involved in four of the five CAR T cell therapies currently in commercial use;
- More broadly, the board and senior management have experience in advancing and on-selling or out-licensing therapies to major pharma;
- The company's pipeline covers a number of potential avenues for partnerships, licensing and commercialisation, having partnered with two world-leading research groups in CAR T cell therapy;
- The company's intellectual property is targeted at growing areas of research in CAR T cell technology, with a large and growing total addressable market;
- The company is well-capitalised to fund the current Phase I CLTX CAR T trial and potentially to expand its pipeline with strategic acquisitions;
- The GBM market is growing globally, with significant investment in finding treatments that extend survival rates; and
- There is significant corporate activity in the CAR T space, highlighting the value of a pipeline with multiple therapies and expertise.

### Valuation

We are initiating coverage of Chimeric Therapeutics with a range of \$165m-\$307m or \$0.50-\$0.93/share (\$0.46-\$0.85/share fully diluted for in-the-money options) using a risk-adjusted net present value (NPV) model focused solely on the CLTX CAR T Phase I programme. We attribute a 10% chance of success to the programme, our standard probability of success for a Phase I programme, and we have applied a discount rate of 10.29% to the estimated cashflows generated from the programme. Our mid-case valuation is \$243m or \$0.74/share (\$0.67/share fully diluted for options on issue) and is based on 50% of recurrent glioblastoma patients meeting the criteria for treatment and that 52% of these have the capacity to afford the treatment or elect to have the

treatment. Our modelling commences with the assumption that 10% of this target market in year one takes up the treatment, with this rising to 95% over 10 years. We have also applied an upside case, which assumes 82% of qualifying glioblastoma patients go ahead with the treatment; while our low-case valuation assumes that the programme is delayed until 2027.

Further upside to our valuation could be obtained from the advancement of CHM 1101 for recurrent GBM to Phase II; taking CHM 1101 to a Phase I frontline trial; and advancing CHM 1101 to clinical trials in other indications. The company identified melanoma, colorectal and prostate cancers as potential further targets but these are in the pre-clinical stage. Additionally, the advancement of CDH17 CAR T (CHM 2101) to Phase I trials would see potential further upside to our valuation. CHM 2101 has set initial indications of colorectal, pancreatic, gastric and neuroendocrine cancers for its pre-clinical studies. Chimeric has also indicated that it is seeking to expand the portfolio with additional acquisitions, which depending on their level of advancement, could add to our valuation range.

**Exhibit 1: Risked Net Present Value (rNPV) for CHM**

	Discount Rate	Value (A\$m)	Value per undiluted share	Value per diluted share
Mid-case valuation	10.3%	243	\$0.74	\$0.67
An upside-case valuation	10.3%	307	\$0.93	\$0.85
A delayed-case valuation	10.3%	165	\$0.50	\$0.46
Ordinary shares on issue (undiluted) (M)		330.9		
Ordinary shares on issue (fully diluted including options) (M)		360.5		

Source: RaaS analysis

## Origins of Chimeric Therapeutics

CHM was originally formed as a company and listed on the ASX to fund its License Agreement with City of Hope Cancer Center in Los Angeles, as well as Phase I clinical trials for the CLTX CAR T cell therapy targeting glioblastoma. COH has clinical care, research and production facilities all on one campus, with resources available to enable discovery, translational research, clinical development, manufacturing, quality assurance and delivery of treatments for patients. Professors Christine Brown and Michael Barish at COH have been developing CLTX CAR T for more than five years. In November 2019, the FDA allowed the IND (Investigational New Drug) application, enabling the initiation of a clinical trial in treating glioblastoma. In September 2020, COH commenced dosing of patients with glioblastoma as part of Phase I clinical trials. Since then, Chimeric has licensed the City of Hope technology with worldwide exclusivity.

### City of Hope agreement – key terms

Chimeric has entered into a license agreement for the CLTX CAR T technology with City of Hope and Dr Christine Brown. CHM holds the exclusive, worldwide, sub-licensable right to develop and commercialise CLTX CAR T cells in the field of human therapeutics relating to, “The Chimeric Antigen Receptors containing a Chlorotoxin Domain”, International Application Number PCT/US2016/056901, and a non-exclusive license to certain related know-how (CHM Prospectus 2020). CHM will be able to develop the technology combining its resources with COH pursuant to a separate Sponsored Research Agreement between CHM and the Beckman Research Institute of the City of Hope.

CHM signed the COH license agreement in September 2020. An initial payment of US\$10m in (six) instalments over 30 months was reliant on IPO funding, and the group successfully raised A\$35m in January 2021 at \$0.20/share. To date, there have been two instalments totalling US\$4m paid (Source: CHM FY21 Annual Report). In the interim, CHM must meet certain development milestones, pay royalties and commercialisation milestone payments including marketing approval in the US and Europe. The management team was appointed in November 2020 and first IND clearance received from the FDA in August 2021, allowing additional trial sites to be added.

Under the License Agreement, CHM has agreed to pay City of Hope upfront license fees in the form of cash and shares of US\$10m, an annual license fee of US\$150,000, annual maintenance fees which are creditable against future royalty payments, performance-based consideration linked to the achievement of certain value inflection development milestones and commercial outcomes, as well as net sales-based royalty payments (<10% ) and sub-licensing fees (US\$3m for change of control).

<b>Exhibit 2: Development milestone payments</b>		
<b>Milestones</b>	<b>Requirement</b>	<b>Payment US\$M</b>
1	Dosing of fifth patient in the first Phase I clinical trial anywhere in the territory	0.35
2	Dosing of first patient in the first Phase II clinical trial anywhere in the territory	0.75
3	Dosing of first patient in the first Phase III clinical trial anywhere in the territory	2.00
4	Receipt of the first Orphan Drug Designation for each licensed product or licensed service	1.00
5	Upon marketing approval in the USA	6.00
6	Upon marketing approval in Europe	6.00
7	Upon marketing approval in each of the first five jurisdictions other than the US and Europe for each applicable licensed product or licensed service	1.00

Source: Company data

### Exhibit 3: Sales milestone payments

Milestones	Requirement	Payment US\$M
1	Upon net sales of licensed product or licensed service first totalling US\$250m in a license year	18.75
2	Upon net sales of licensed product or licensed service first totalling US\$500m in a license year	35.50

Source: Company data

### Initial Public Offering and capital structure

CHM listed on the ASX on 18 January 2021, having issued 175m shares at A\$0.20/share as part of its initial public offering. Following the IPO, the company had \$36.4m in cash. At 30 June 2021, the company had A\$22.4m in cash. At 30 June 2021, the company had 330.86m shares on issue. The company has a number of shares in voluntary escrow as well as a number of options on issue as set out in the following tables.

### Exhibit 4: Securities subject to voluntary escrow as at 30 June 2021

Securities	Escrow Date	Number of Shares
Ordinary shares	29-Sept-2021	6,106,996
Ordinary shares	12-Jan-2022	5,526,338
Ordinary shares	18-Jan-2022	115,226,336
Ordinary shares	30-Jun-2022	524,972
Ordinary shares	30 Jun-2023	524,972
Ordinary shares	30 Jun-2024	525,128
<b>TOTAL</b>		<b>128,434,742</b>

Source: Company data

### Exhibit 5: Restricted and unrestricted options as at 30 June 2021

Options	Expiry Date	Exercise Price (A\$)	Number of Options
CHMAC exp restricted	18 -an-2024		4,957,897
CHMAD exp restricted	18-Jan-2025		5,500,000
CHMAE option ex 0.20	18-Jan-2025	0.20	6,280,002
CHMAF option ex 0.20	18-Jan-2026	0.20	6,280,002
CHMAG option ex 0.29	30-Jun-2026	0.29	4,265,444
CHMAH option ex 0.29	8-Mar-2026	0.29	695,552
CHMAI option ex 0.29	1-Jul-2026	0.29	700,000
Omnibus Incentive Plan ex 0.32	27-Aug-2024	0.32	1,000,000
<b>Total</b>			<b>29,678,897</b>

Source: Company data

## Progression Since The IPO

At IPO, CHM had licensed the CLTX CAR T from COH and since that time CHM has:

- Expanded its management team and board of directors (see table on page 27);
- Licensed a second CAR T therapy from University of Pennsylvania (Penn) (CDH17);
- Received the IND clearance from the FDA for CLTX CAR T cell therapy for patients with recurrent/progressive glioblastoma;
- Progressed to the second stage of the dosing in the Phase I trial, with no dose-limiting toxicities, a 75% disease control rate with up to eight weeks of durability, and tumour recurrence prevented at sites where CLTX CAR T were infused while tumour recurrence occurred at sites without CLTX CAR T infusion (ASX releases, 15 and 22 November 2021);
- Signed a deal with OncoBay to expand the Phase I trial sites for CH 1101;
- Completed early pre-clinical research to support moving CLTX CAR T into melanoma;
- Received patent approval for its CH 1101 technology by the European Patent Office; and
- Commenced manufacturing of the plasmid for CDH17, a first step toward vector manufacturing needed for the development of its Phase I trial.

## Building Out The Portfolio / Key Asset Update

CHM currently has its CLTX CAR T (CHM 1101) targeting recurrent glioblastoma in a Phase I trial. CHM is planning a second Phase I clinical trial for CLTX CAR T (CHM 1101) in solid tumours leading with melanoma in 2022. In addition, CHM is planning a Phase I clinical trial with CDH17 CAR T in 2022 in colorectal cancer, gastric cancer, pancreatic cancer and neuroendocrine tumours.

**Exhibit 6: CHM pipeline for CHM 1101 and CHM 2201**

	CHM Pipeline (Solid Tumours)	Pre-Clinical	Phase 1	Phase 2/3*
CHM 1101 (CLTX CAR T)	Glioblastoma	Stage 2 dose trial		
	Melanoma	Preclinical		
	Colorectal	Preclinical		
	Prostate	Preclinical		
CHM 2101 (CDH17 CAR T)	Neuroendocrine	Preclinical		
	Colorectal	Preclinical		
	Pancreatic	Preclinical		
	Gastric	Preclinical		

Source: Company presentations

CHM is actively looking to build out its pipeline and is focused on three areas of cell therapy development:

- 1) Novel CAR designs;
- 2) Allogenic cell sources; and
- 3) Alternative cell types for patients with solid tumours and blood cancers.

We believe CHM is looking for strategic deals that fit into its pipeline with respect to timing of development, indications, and intellectual property portfolio. CHM has hired a Vice President, Business and Corporate Development, Dr. Eliot Bourk, to lead this process. The first deal that has been done, announced 28 July 2021, was a licensing deal with the University of Pennsylvania.

### License agreement with University of Pennsylvania

On 22 July 2021, CHM entered into an exclusive license agreement with The Trustees of the University of Pennsylvania (Penn) for the novel third-generation CDH17 CAR T cell therapy for solid tumours which is being developed by Xianxin Hua MD, PhD, and his team. CHM has agreed to pay upfront licence fees of US\$350,000 in cash, and annual maintenance fees, performance-based consideration linked to the achievement of certain value inflection development milestones and commercial outcomes, as well as net sales-based royalty payments and sub-licensing fees. A three-year commitment for further research and development has been made to Dr Hua and Penn as part of the deal. The first FDA-approved CAR T therapy was developed at Penn, and has launched more than 10 start-ups in the cell and gene-therapy space since; and ranks first amongst global universities for cell therapy patents according to 'Nature' magazine, and as such it is a globally recognised leader in cellular immunotherapy. (Source: Company announcements, 28 July 2021 and 21 August 2021).

### CDH17 (CHM2101) pre-clinical studies

The CDH17 CAR T has demonstrated the complete eradication of tumour cells with no evidence of toxicity in pre-clinical studies. CHM is planning a Phase I clinical trial in 2022. The pre-clinical study is in progress to determine the first indication for CHM2101, by researching the impact on neuroendocrine tumours and the most common gastrointestinal tumours including colorectal cancer, pancreatic cancer and gastric cancer. (Source: company announcement, 28 July 2021). Pre-clinical studies in mice have also demonstrated

promising efficacy with complete eradication of tumour cells, no relapse of tumour cells 49 days after CAR T cell injection, and increased potency of the third-generation CAR T cells versus second-generation CAR T cells. (Source: Company presentation, August 2021).

### **CHM1101 pre-clinical studies**

In addition to the Phase I trial under way for CHM1101, CHM is also studying the potential additional indications for CLTX CAR T cell therapy, including such cancers as melanoma, colorectal and prostate cancer.

## **CAR T Cell Therapy – An Explanation**

Understanding CAR T technologies is critical in understanding the risks and potential of the CHM portfolio. Cell therapy is the transfer of intact, live cells into a patient to help lessen or cure a disease. There are two types of cell therapies: autologous and allogeneic. Autologous cell therapy is when the cells that are used for the therapy originate from the patient. Allogeneic cell therapy is when the cells that are used for the therapy originate from a donor.

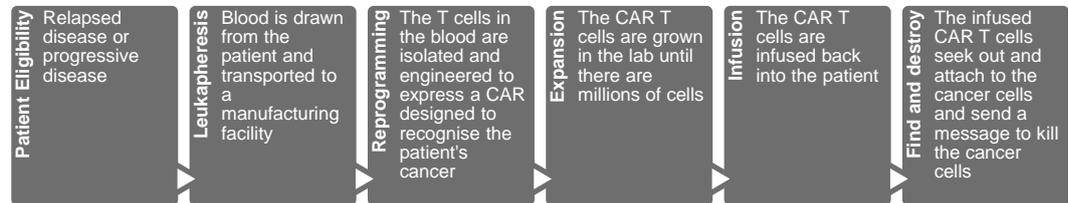
Chimeric Antigen Receptor (CAR) technology is a personalised therapy that contains patients' autologous T cells reengineered to fight cancer cells. T cells are lymphocytes, a type of white blood cell that fights infection as part of the immune system. CAR (Chimeric Antigen Receptor) is a new kind of protein that can bind to a cancer cell. CAR-T cell therapy is a gene therapy because genes in the patient's T cells are reprogrammed to make CARs.

As CAR T cell therapy is personalised, each individual patient has their own cells extracted (leukapheresis) and frozen before being sent to a manufacturing facility where the cells are reengineered (reprogrammed) to have a CAR on their surface and multiplied and then sent back to the treatment centre where the individual has the reengineered cells infused into their system. The T cells continue to exist in the body and combat cancer long after its infusion, thus it is considered a "living drug", and only one dose is needed. The entire process from identifying the patient to the first therapy is around one-two months depending on the manufacturing time.

Steps summarised:

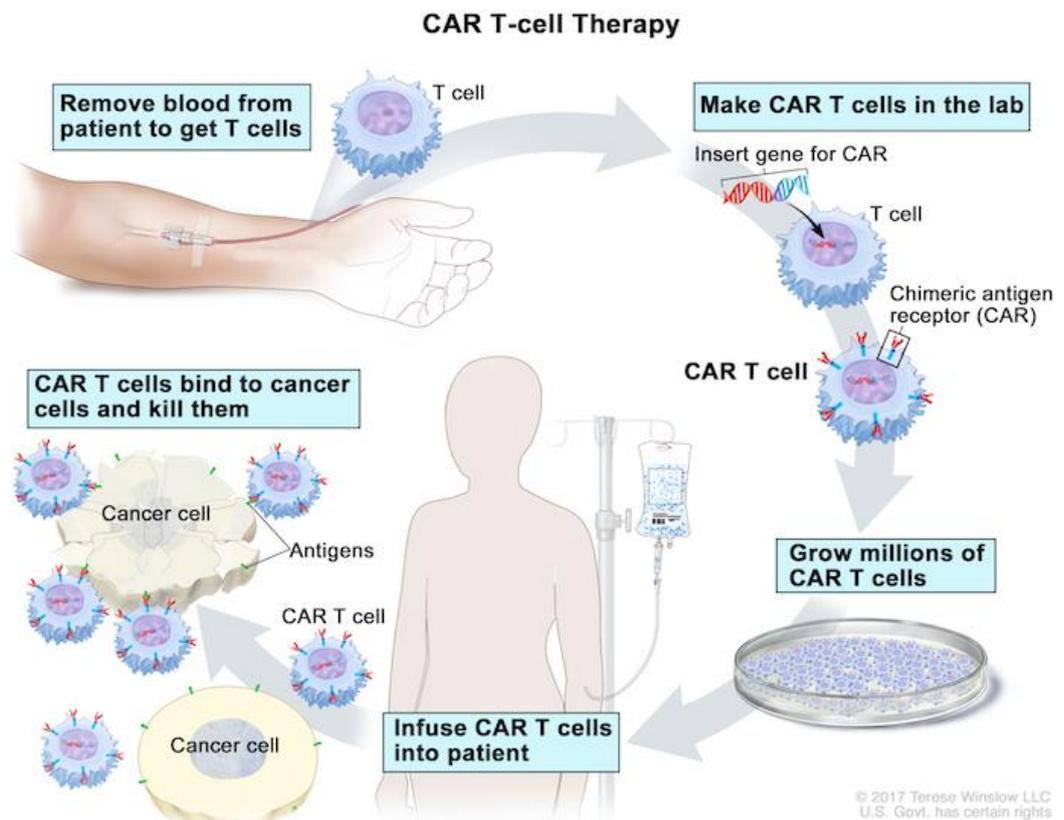
- 1) Determining patient eligibility;
- 2) Leukapheresis;
- 3) Reprogramming of T cells;
- 4) Expansion of T cells;
- 5) Infusion of cells back into the patient; and
- 6) Find and destroy.

**Exhibit 7: Autologous CAR T cell therapy process**



Source: Company data

**Exhibit 8: Autologous CAR T cell therapy**



Source: <https://www.ohsu.edu/knight-cancer-institute/car-t-cell-therapy-cancer>

**Key risks in CAR T cell therapy**

At each step of the process there are a number of risks which need to be carefully managed. Beyond safety and efficacy risks, there are risks involved in patient selection, logistics along the supply chain, manufacturing, and reinfusion, as well as regulatory risks which come from documenting and adherence to the processes outlined in the trial design. For the process to meet required approvals a chain of custody must be shown at any point of the process, which requires careful planning and management. Any changes to or deviations from the processes outlined in the trial design will trigger a regulatory review before the trial can continue.

## To date CAR T cell therapy has been a second- or third-line therapy

Historically, the medical community treated potential CAR T cell therapies as a second- or third-line therapy in treating different cancers. In the case of glioblastoma, it is currently being trialled on recurrent cases. As such, the population eligible to be screened for the treatment may be smaller or may not have the ability to finish the treatment due to failing health. Additional time might be needed to show the efficacy in enough patients to be considered for reimbursement as a first-line therapy, if indicated by trial outcomes.

### Patient selection

Identifying patients that fit the criteria for either the trial or treatment is critical. Patients may have side-effects to the therapy. The therapy may only work if certain characteristics are expressed in the cancer cells homogeneously.

### Manufacturing

The manufacturing process is complex and expensive as it is people intensive. Transportation must be arranged to the facility including temperature control of the frozen samples and the process has very specific steps for reprogramming and expansion. This can take anywhere from three weeks to three months if there is availability at the manufacturing centre. Currently there are 160 CAR T treatment facilities in the US<sup>1</sup> but only a handful of manufacturing centres (ie Novartis has seven manufacturing facilities globally) and further limited facilities in the rest of the world, though we expect the number of manufacturing centres to continue to grow globally. Ideally, samples get sent to the closest facility. Risks in manufacturing include:

- There is no guarantee each patient's cells will expand enough in the manufacturing process to produce the required yields for treatment;
- Out-of-spec manufacturing; and
- Drug approval and patents are tied to the manufacturing process. Industry sources have advised that any change of manufacturer can involve a tech transfer that can take up to 15 months.<sup>2</sup>

### Drug administration

Drug administration is usually a systemic process, including CHM 1101 for other solid tumours (excluding GBM) and CHM 2101. For CHM 1101 for glioblastoma patients, the administration is intra-tumoral and intraventricular. Cells are accessed from a needle through the skull, which is being done on an outpatient basis. Patients must be monitored for any reaction to the treatment.

Having people on the team experienced in these processes with chain of custody and manufacturing details and supply is beneficial to planning things correctly from the start and avoiding costly delays and errors. Regulatory bodies require a review if any changes are made versus the study design submitted for approval. Therefore, preparation of the study and careful management through the process is important.

### Side-effects

There are a number of common and product-specific side-effects involved in the CAR T process including:

- CRS (Cytokine Release Syndrome) which involves a rapid and massive release of cytokine into the blood stream on transfusion, resulting in high fever and low blood pressure; and
- Cerebral edema, which is the swelling of the brain.

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1 <https://www.bmtinfonet.org/medical-centers-offering-car-t-cell-therapy>

2 In the course of our research we conducted discussions with industry experts on the processes, benefits and risks of CAR T technology

## Why CAR T Is A Space That Is In Focus

### Growth drivers

The cell therapy market is growing, and we highlight what we think are key growth drivers in the CAR T space:

- A high volume of clinical trials in progress;
- Accelerated pathways for product approvals available;
- Growing number of regulatory approvals of CAR T therapies globally; and
- High levels of activity among biotechnology and pharmaceutical companies in cell therapy partnerships, including research agreements and licensing deals.

### A small but growing list of approvals

Currently, there are five CAR T therapies approved for use by the FDA. Novartis partnered with the University of Pennsylvania to develop the first approved CAR T cell therapy in any disease state, Kymriah®, to treat acute lymphoblastic leukaemia and adult r/r diffuse large B cell lymphoma (DLBCL).

Kite Pharmaceuticals and Gilead Pharmaceuticals developed two CAR T cell therapies currently approved: Yescarta®, which was approved in October 2017; and Tecartus® to treat B-cell lymphoma, which was approved in July 2020. Juno Therapeutics' developed therapy Breyanzi®, now owned by Bristol Myers Squibb, which also treats B cell lymphoma, was approved in February 2021.

As of March 2021, Yescarta® is also approved to treat follicular lymphoma and Tecartus® is approved to treat relapsed mantle cell lymphoma. In October 2021, Tecartus® was approved to treat adults with relapsed or refractory B-cell acute lymphoblastic leukaemia. The fifth CAR T cell therapy to receive approval is Abecma®, approved in March 2021, to treat multiple myeloma, which was co-developed by Bristol Myers Squibb and US biotech bluebird bio (NASDAQ:BLUE).

(Sources: <https://www.ohsu.edu/knight-cancer-institute/car-t-cell-therapy-cancer>; <https://www.thepharmaletter.com/article/ec-green-light-for-abecma-in-multiple-myeloma> accessed 29 Sept 2021)

**Exhibit 9: FDA approved CAR T cell therapies**

Name	Description	Cost
Axicabtagene ciloleucel (Yescarta®):	A CD19-targeting CAR T cell immunotherapy; approved for subsets of patients with lymphoma	US\$373,000 per treatment regimen
Brexucabtagene autoleucel (Tecartus™):	A CD19-targeting CAR T cell immunotherapy; approved for subsets of patients with lymphoma	US\$373,000 per treatment regimen
Idecabtagene vicleucel (Abecma™):	A BCMA-targeting CAR T cell immunotherapy; approved for subsets of patients with advanced multiple myeloma	US\$419,500 per treatment regimen
Lisocabtagene maraleucel (Breyanzi®)	A CD19-targeting CAR T cell immunotherapy; approved for subsets of patients with lymphoma	US\$428,363 per 1 suspension
Tisagenlecleucel (Kymriah®)	A CD19-targeting CAR T cell immunotherapy; approved for subsets of patients with leukaemia and lymphoma	US\$475,000 for leukaemia US\$373,000 for lymphoma

Source: <https://www.cancerresearch.org/en-us/immunotherapy/treatment-types/adoptive-cell-therapy>, accessed 28 September 2021 and internet searches

### Competition

There are a number of studies ongoing in the CAR T space for the treatment of glioblastoma and other solid tumours, as well as therapies being studied to treat those same cancers utilising other technologies. It is a growing and significant market, and therefore crowded. The Acuity Technology report within the CHM Prospectus suggests there are at least 150 CAR Ts currently under development, involving almost 150 clinical trials. Acuity also found that there are at least 30 CAR T therapies being evaluated for glioblastoma in Phase I

using various constructs including IL13R $\alpha$ 2, HER2/CMV and EGFRvIII. A selection of examples of CAR T trials targeting glioblastoma are highlighted in the tables below for both completed and ongoing trials.

We view the amount of activity in the space as positive, as it both draws attention to the need for a solution, as well as supports the view the market is commercial, attractive and achievable.

**Exhibit 10: Ongoing CAR T cell-based clinical trials in patients with GBM**

Molecular target	Clinical trial identifier and title	Study phase	CAR T cell dosage (+ combination)	Sponsor/site (+ collaborators)	Estimated enrolment	Estimated primary completion date
B7-H3	NCT04385173: Pilot study of B7-H3 CAR T in treating patients with recurrent and refractory glioblastoma	I	Three intratumoral or intracerebroventricular injections of CAR T cells at two doses in-between temozolomide cycles	Second Affiliated Hospital, School of Medicine, Zhejiang University [BoYuan RunSheng Pharma (Hangzhou) Co., Lts. (China)]	12	May 2022
	NCT04077866 B7-H3: CAR T for recurrent or refractory glioblastoma	I/II	Three intratumoral or intracerebroventricular injections of CAR T cells at two doses in-between temozolomide cycles	Second Affiliated Hospital of Zhejiang [Ningbo Yinzhou People's Hospital, Huizhou Municipal Central Hospital, BoYuan RunSheng Pharma (Hangzhou) Co., Lts. (China)]	40	June 2024
CD147	NCT04045847 CD147: CAR T cells in patients with recurrent malignant glioma	I	Intracavity injection of CAR T cells, once per week for three weeks	Xijing Hospital	31	October 2020
GD2	NCT04099797 C7R-GD2: CAR T cells for patients with GD2-expressing brain tumours (GAIL-B)	I	Intravenous injection of between $1 \times 10^7$ - $1 \times 10^8$ CAR T cells with or without lymphodepletion chemotherapy	Baylor College of Medicine (Center for Cell and Gene Therapy, Baylor College of Medicine)	34	February 2023
EGFRvIII	NCT03726515: CART-EGFRvIII + pembrolizumab in GBM	I	CART-EGFRvIII + pembrolizumab	University of Pennsylvania	7	December 2020
	NCT-3283631: Intracerebral EGFR-vIII CAR T cells for recurrent GBM (INTERCEPT)	I	Start dose of $2.5 \times 10^8$ per CAR T cells per intracerebral infusion, with doses escalated in successive cohorts	Duke University (National Cancer Institute, Duke Cancer Institute)	24	December 2021
IL13Ra2	NCT02208362: Genetically modified T cells in treating patients with recurrent or refractory malignant glioma	I	IL13R $\alpha$ 2-specific, hinge-optimized, 41BB/truncated CD19-expressing CAR T cells by intratumoral, intracavitary, or intraventricular catheter. Weekly for three weeks with additional infusions if eligible	City of Hope Medical Centre (National Cancer Institute, Food and Drug Administration)	92	January 2021
	NCT04003649 IL13Ralpha2: Targeted Chimeric Antigen Receptor (CAR) T cells with or without nivolumab and ipilimumab in treating patients with recurrent or refractory glioblastoma	I	Intravenous administration of nivolumab and ipilimumab followed by intracranial intraventricular/intracranial intratumoral infusion of CAR T cells. Up to four cycles	City of Hope Medical Centre (National Cancer Institute)	60	December 2022
MMP2 (Chlorotoxin)	NCT04214392: Chimeric Antigen Receptor (CAR) T cells with a chlorotoxin tumour-targeting domain for the treatment of MPP2 + recurrent or progressive glioblastoma	I	Three weekly cycles of one or two CAR T cells infusions	City of Hope Medical Centre (National Cancer Institute)	36	February 2023
Variable	NCT03423992: Personalised Chimeric Antigen Receptor T cell immunotherapy for patients with recurrent malignant gliomas	I	CAR T cells expressing receptors specific for EGFRvIII, IL13R $\alpha$ 2, Her-2, CD133, EphA2 or GD2, with or without anti-PD-L1 mAb	Xuanwu Hospital [Beijing Mario Biotech Company, Hebei Senlany Biotech Company, Beijing HuiNengAn Biotech Company (China)]	100	January 2021

Source : <https://www.frontiersin.org/articles/10.3389/fnins.2021.662064/full>

### Exhibit 11 Completed CAR T cell based clinical trials in patients with GBM

Molecular target	Clinical trial identifier and title	Study phase	CAR T cell dosage (+ combination)	Sponsor/site (+ collaborators)	Enrolment	Response
EGFRvIII	NCT02209376: Autologous T cells redirected to EGFRvIII - with a Chimeric Antigen Receptor in patients with EGFRvIII + glioblastoma	I	Intravenous single dose of $1.75 \times 10^8$ - $5 \times 10^8$ CAR T cells	University of Pennsylvania (University of California)	11	Median overall survival ~ eight months, nil benefit terminated (to pursue combination therapies) (O'Rourke et al., 2017)
	NCT01454596: CAR T cell receptor immunotherapy targeting EGFRvIII for patients with malignant gliomas expressing EGFRvIII	I/II	Two intravenous doses of $6.3 \times 10^6$ to $2.6 \times 10^{10}$ CAR T cells per infusion, two hours apart	National Cancer Institute	18	Median overall survival 6.9 months, median progression-free survival 1.3 months, nil benefit (Goff et al., 2019)
HER2	NCT01109095 CMV: Specific cytotoxic T lymphocytes expressing CAR targeting HER2 in patients with GBM (HERT-GBM)	I	One or more intravenous infusion $1 \times 10^6/m^2$ - $1 \times 10^8/m^2$ CAR T cells	Baylor College of Medicine (The Methodist Hospital System, Center for Cell and Gene Therapy)	16	Median overall survival 24.5 months, median progression-free survival 3.5 months, one (6%) patient had partial response, seven (44%) had a stable disease (Ahmed et al., 2017)
IL13R $\alpha$ 2	NCT00730613: Cellular adoptive immunotherapy using genetically modified T-lymphocytes in treating patients with recurrent or refractory high-grade malignant glioma	I	Intravenous infusions of up to $10^8$ CAR T cells on days one, three and five for two weeks. Treatment repeated after three weeks	City of Hope Medical Center (National Cancer Institute)	3	Median survival after relapse 11 months, positive response (Brown et al., 2015)
	NCT01082926: Phase I study of cellular immunotherapy for recurrent/refractory malignant glioma using intratumoral infusions of GRm13Z40-2, an allogeneic CD8 + cytolytic T cell line genetically modified to express the IL 13-Zetakine and HyTK and to be resistant to glucocorticoids, in combination with interleukin-2	I	Intratumoral injections of $1 \times 10^8$ CAR T cells and aldesleukin (IL-2) twice per week for two weeks	City of Hope Medical Center	6	Median overall survival 19.7 months (Keu et al., 2015)

Source: <https://www.frontiersin.org/articles/10.3389/fnins.2021.662064/full>

### Regulatory market

CAR T cell therapy is a high-impact, new area of research in cancer treatments. As a result, regulators are engaged with developers in this area and take a proactive approach to the approvals process. There are accelerated pathways available for pivotal treatments, which enables earlier-phase trials to be utilised as registration trials. For example, currently approved CAR T therapies were approved on single arm Phase II trials. (<https://clinicaltrials.gov>)

An example of this collaborative effort is the work of The Alliance for Regenerative Medicine (ARM), the leading international advocacy organisation dedicated to regenerative medicines and advanced therapies. ARM promotes legislative, regulatory, reimbursement and manufacturing initiatives to advance this sector (cell therapies, gene therapies and tissue-based therapies).

In the US, the Centres for Medicare and Medicaid Services (CMS) made a decision to include a provision creating a new diagnosis-related group (DRG) for CAR T therapies in its FYH21 IPPS rule. The creation of a new DRG is an important step in reimbursing providers when administering CAR T to Medicare patients (rule applies currently in the treatment of severe blood cancers).<sup>3</sup>

<sup>3</sup> Press Release 11 May, 2020 by Alliance for Regenerative Medicine <https://alliancerm.org/press-release/the-alliance-for-regenerative-medicine-arm-applauds-cmss-decision-to-establish-new-drg-for-car-t-therapies/>

## Deal activity supports ability to out-license or partner

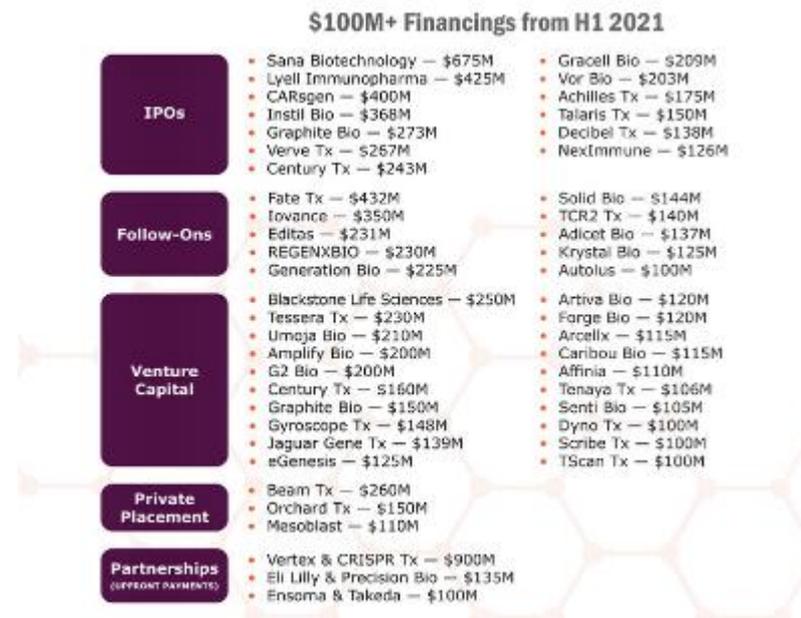
As CHM progresses its projects, we believe additional funding will be required to complete further trials. In addition to traditional methods such as raising on market or finding debt financing, CHM may be able to out-license the technology into additional markets, partnering with others using complementary technologies such as automated manufacturing or looking for modifications for other technologies, or with companies looking to build out their own CAR T pipeline. For example, CAR T therapies may be combined with other technologies to enhance potency and targeting.

The sector has seen a lot of activity in recent years. We know from recent deals, that there is value in pre-clinical and Phase I progress in CAR T to larger companies. Examples of deals include:

- Kite Pharma was taken over by Gilead in an US\$11.98b deal in 2017, which represented a 29% premium to Kite's share price at the time;
- Juno Therapeutics was taken over by Celgene for US\$9b in 2018;
- In 2019, Allogene Therapeutics raised \$300m to license 16 pre-clinical CAR T cell therapies from Pfizer, who had previously licensed them from Cellectis and Servier; and
- In 2020, Astellas licensed a convertible CAR T platform from Xyphos for a total of \$665m (\$120m up-front plus milestone payments).

The activity has continued into CY2021. According to the Alliance for Regenerative Medicine (ARM), H1 FY2021 Report, the global regenerative and advanced therapies sector raised more than \$14b in the first half, already reaching 71% of the \$19.9b raised in 2020. Twenty companies have issued IPOs so far through to end Q3 2021. Private placements and venture financing totalled \$1b in H1 2021. Developers raised \$5.4b in venture financing, a 77% increase YOY from H1 2020. Upfront payments from corporate partnerships were \$1.5b in H1 2021 (a 6% decrease from H1 2020)

### Exhibit 12: US\$100m+ financing in regenerative medicine H1 CY21



Source: Alliance for Regenerative Medicine H1 2021 Report, accessed via [www.alliancerm.org](http://www.alliancerm.org)

In addition to the M&A activity, the sector has seen a rise in licensing activity, with upfronts and overall deals growing in size due to increasing competition from mid-sized pharma.

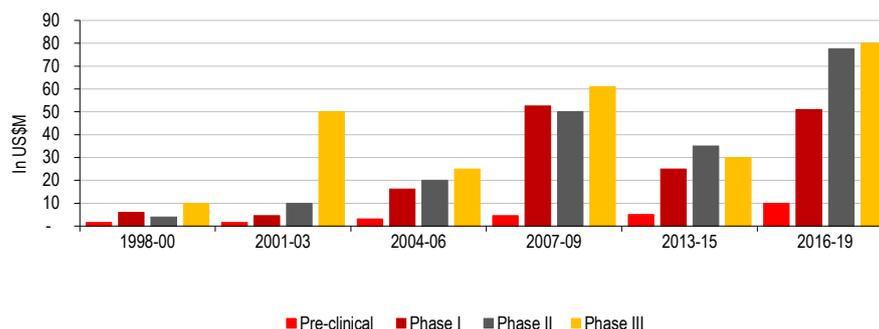
Data compiled by Clarivate shows that in 2020, there were more than 20 US\$1b+ oncology drug licencing deals, with demand across all phases of development.

**Exhibit 1: US\$1b+ oncology drug licencing deals in 2020**

Buyer	Seller	Total Projected Value (US\$M)	Upfront Payment (US\$M)	Mechanism	Drug (s)	Status
AstraZeneca	Daiichi Sankyo	6,000	1,000	Anti-drug conjugate	Datopotamab deruxtecan	Phase I
Pfizer	Myovant	4,250	650	Hormone receptor antagonist	Relugolix; relugolix + estradiol + norethindrone combination	Launched
AbbieVie	Genmab	3,900	750	Bispecific T cell engager	GEN-1044; GEN-3009; epcoritamab	Phase II
Merck & Co	Seagen	3,200	600	Antibody-drug conjugate	Ladiratumumab vedotin	Phase II
Janssen	Fate	3,100	50	CAR T cells	Drug discovery platform	Discovery
GlaxoSmithKline	IDEAYA	3,030	100	Precision medicine, synthetic lethality	IDE397; Poltheta inhibitors; werner inhibitors	Pre-clinical
AbbieVie	I-Mab	2,940	180	Anti-CD47 antibody	Lemzoparlimab	Launched
Astellas	CytomX	2,580	80	Bispecific T cell engager	Drug discovery platform	Discovery
Merck & Co	Taiho	2,550	50	Precision medicine; KRAS inhibitor	Drug discovery platform	Discovery
Innovent	Roche	2,100	unspecified	Bispecific T cell engager; CAR T cell	Drug discovery platform	Discovery
Poivant	Affimed	2,091	40	Bispecific natural killer cell engager	AFM-32 and others	Pre-clinical
Gilead	Arcus	2,000	175	Anti-ITIM antibody; anti-PD1 antibody	Domvanalimab; zimberelimab	Pre-registration
Incyte	MorphoSys	1,955	750	Anti-CD19 antibody	Tafasitamab	Pre-registration
Genentech	Bicycle	1,720	30	Peptide-drug conjugate	Drug discovery platform	Discovery
Roche	Blueprint	1,702	675	Precision medicine; RET inhibitor	Pralsetinib	Pre-registration
Astellas	Adaptimmune	1,458	50	CAR T cells	Drug discovery platform	Discovery
EQRx	CStone	1,300	150	Anti-PD1 antibody; anti-PDL1 antibody	CS1003 sugemalimab	Phase III
AstraZeneca	Accent	1,155	55	RNA-modifying protein inhibitors	Drug discovery platform	Discovery
Abpro Bio	Abpro	1,100	unspecified	Bispecific T cell engager	ABP-100; ABP-201	Pre-clinical
AbbVie	Frontier	1,055	55	Protein degradation targets	Drug discovery platform	Discovery
Merck & Co	Janux	1,001	unspecified	Bispecific T cell engager	Unspecified drug candidates	Pre-clinical

Source: <https://www.nature.com/articles/d43747-021-00024-y>. Data from Cortellis Deals Intelligence from Clarivate

Further, data compiled by BioSci Advisors has identified that upfronts and milestone payments have increased in recent years. In the period from 2016-2019, upfront payments across pre-clinical, Phase I, II and III all lifted considerably in value and as a percentage of the total deal over the previous three-year period.

**Exhibit 14: Upfront payments to corporates by development phase by period**


Source: BioSci Advisors (<https://bioscibd.com/biopharma-milestone-payments>)

**Exhibit 15: No. of deals 2016-2019, average deal, average upfront, upfront as a % of total**

Phase	Number of deals	Average deal size (US\$M)	Average upfront (US\$M)	Upfront % of deal
Pre-clinical	271	445	38	9%
Phase I	29	515	72	14%
Phase II	47	1,081	155	14%
Phase III	27	1,158	177	15%

Source: BioSci Advisors, RaaS analysis

## Competitive Advantages for CHM

There are large barriers to entry in the CAR T cancer treatment space, in particular with progressing discovery through to a potential clinical candidate. Beyond the science and research, key personnel and know-how are an advantage, from finding the right discoveries through to trial design and IND approval, project management, manufacturing and Phase II trial design. The team that CHM has in place has a depth of experience in project management, development and commercialisation of CAR T therapies that will be a significant advantage in licensing, trial design and approvals. We believe this team will attract better licensing deals as they build out the pipeline with strategic intellectual property.

In addition, an experienced team can reduce costs and make the regulatory approval process more efficient. CHM is licensing new therapies prior to IND approval, which is needed to begin Phase I clinical studies. The optimal design of the Phase I study for approval is extremely important, because any changes made during the process are subject to a regulatory review, which can cause delays. In addition, being able to manage the chain-of-custody and the manufacturing process is important for the same reasons and to keep costs down through experience in finding the right manufacturer and getting the timing right. Having people on the team experienced in these processes with chain-of-custody and manufacturing details and supply is beneficial to planning things correctly from the start and avoiding costly delays and errors.

Finally, in order to progress through the clinical trials and through to marketing will likely require partnerships, out-licensing or other strategic deals. Having a well-known, experienced team can make finding those opportunities, the process and those deals more attractive.

## Glioblastoma As A Lead Indication – Background And Market Size

Glioblastoma (glioblastoma multiforme [GBM]), brain cancer, is one of the deadliest cancers with a median survival time of ~14 months (*Glioblastoma multiforme: a review of where we have been and where we are going*, Adamson et al. 2021). Estimates suggest an incidence of two to five cases per 100,000 people in North America and Europe and the number of new cases of glioblastomas per year can be estimated at ~250,000 worldwide. Due to an aging population, an increase is expected in years to come. The current standard of care for glioblastoma first-line treatment is surgery where possible (~50-70% of patients) or a simple biopsy where surgery is not possible, with the possible addition of chemotherapy treatment and/or radiotherapy. Second-line treatments may include second resections and/or second-line chemotherapy.

These treatments on average allow a survival gain of a little more than one year.<sup>4</sup> Survival rates are ~3-5% at two years<sup>5</sup>. GBMs are difficult to treat because the tumours are disseminated throughout the brain, and CAR T approaches have to contend with a high degree of heterogeneity within the tumours (Source: CHM Prospectus). COH researchers identified glioblastoma as an initial target as the cancer cells have been shown to bind broadly to the chlorotoxin (CLTX), a peptide component of scorpion toxin which binds to unique targets on brain cancer cells.

### Novel features of CLTX CAR T cell therapy

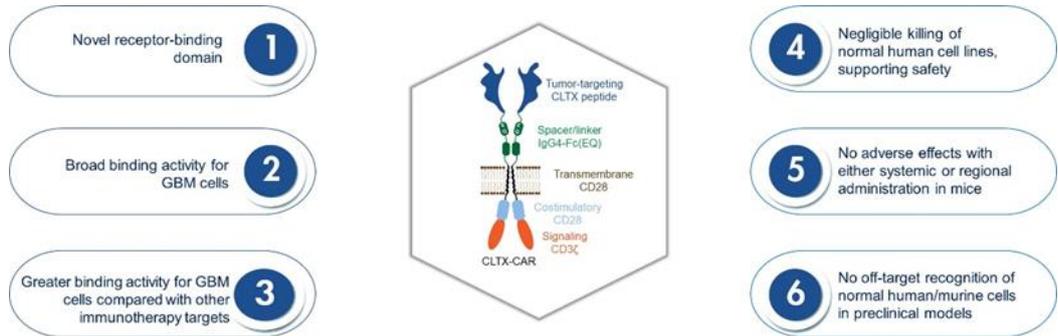
Chlorotoxin CAR T (CLTX CAR T) cells have been shown in pre-clinical models to bind more broadly and specifically to GBM cells than other targeting domains such as EGFR, HER-2 or IL-13 (Source: Company data). In pre-clinical models, CLTX CAR T cells also demonstrated potent anti-tumour activity against glioblastoma while not exhibiting any off-tumour recognition of normal human cells and tissues, indicating a potentially optimal safety and efficacy profile. The following exhibit sets out the novel features of CLTX CAR T cell therapy.

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4 Source: <https://www.gliocure.com/en/patients/glioblastoma/>, accessed 1 October 2021

5 Source: *Glioblastoma multiforme: a review of where we have been and where we are going*, Adamson et al. 2021

**Exhibit 16: Novel features of CLTX CAR T cell therapy**



Source: City of Hope presentation at the 2021 ASCO annual meeting accessed via <https://chimerictherapeutics.com/our-pipeline/>

**Trial design**

Based on public releases from the company, CHM believes this drug may receive FDA Orphan Drug status, enabling accelerated development and extended market protection. CHM’s strategy is to complete the Phase I trial in 24 months or less (from commencement in September 2020), and based on the outcome, may seek FDA approval to do a Phase II pivotal/approval trial in glioblastoma to bring the drug to market under an accelerated approval.

The CLTX CAR T therapy is in Phase I with the first cohort of four patients in April 2021 completed with no adverse effects (ASX announcement, 22 April 2021). CHM is now doing a dose escalation trial to its second cohort, with results presented from this cohort ~mid-November 2021 (ASX announcements, November 15 and November 22, 2021). These encouraging results include: demonstrated regional control of tumour recurrence where tumour recurrence was prevented at sites where CLTX CAR T cells were infused while tumour recurrence occurred at sites without the CLTX CAR T infusion; a 75% disease control rate in the lowest dose level with up to eight weeks of durability; no dose-limiting toxicities; and no observed cytokine release syndrome (ASX releases, 15 and 22 November 2021). The CLTX therapy is currently in development for patients with progressive and recurrent glioblastoma. We have included the following exhibit from the company’s AGM presentation which highlights the trial design at each dosing stage.

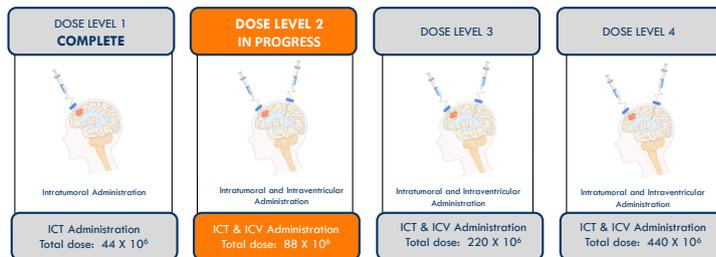
**Exhibit 17: Phase I trial design: four dose levels and two routes of administration**

**CHM 1101 (CLTX CAR T) Ongoing Phase 1 Clinical Trial**

**Advancing Towards Higher Dose Levels**

Primary Objective: To assess the safety of CLTX CAR T cells and to determine the maximum tolerated dose schedule and a recommended Phase 2 dosing plan

Phase 1 Clinical Trial Design: 4 dose levels and 2 routes of administration



Approximately 18 -36 patients with recurrent or progressive GBM over 24 months



Source: AGM presentation (22 November 2021)

The overall programme design for the Phase I trial has primary and secondary end points, and is currently in the stage that is determining the maximum tolerated dose schedule.

Phase I trial primary end points:

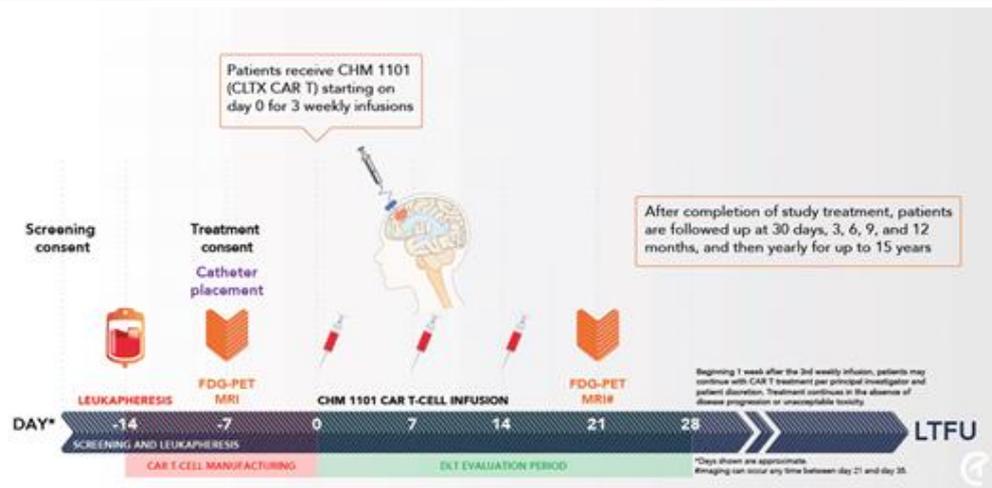
- Toxicity;
- Determine the maximum tolerated dose (MTD) schedule; and
- Determine the recommended Phase II dose (RP2D) plan.

Phase I trial secondary end points:

- CAR T cell and endogenous T cell levels; phenotype; and cytokine levels in peripheral blood, tumour cyst fluid and cerebrospinal fluid;
- Determine the six-month patient-free survival, nine-month overall survival rate, and median overall survival; CAR T-cell and CLTX antigen expression levels in tumour tissue; and
- Biomathematical modelling of tumour growth.

Patients will follow the procedure from screening consent to leukapheresis, to treatment consent, during which CAR T creation and expansion (manufacturing) occurs, to CAR T cell infusion over ~28 days (as per the following exhibit), with follow-ups for up to 15 years:

#### Exhibit 18: Procedure for CHM1101 treatment procedure



Source: Company website (<https://chimerictherapeutics.com/our-pipeline/#our-pipeline>)

#### Intellectual property

CLTX CAR T, as well as related CAR T cells and their uses, are covered in several National Phase patent applications stemming from PCT/US2016/056901, filed 13 October 2016 (Chimeric Antigen Receptor containing a chlorotoxin domain). CHM has received patent approval from the European Patent Office for its CLTX CAR T technology used in CHM 1101 (its current technology being used in Phase I trial). The granted patent covers certain applications of Chimeric Antigen Receptor (CAR) technology using chlorotoxin (CLTX), including Chimeric's clinical-stage CAR T asset, CHM 1101, with patent protection expected until 2036, as per the CHM ASX announcement dated 23 September 2021. CHM holds the exclusive worldwide license to develop and commercialise the technology in this patent and related patent applications have been filed in other global territories. (Source: Company announcement, 23 Sept 2021)

## SWOT Analysis

We are of the view that CHM's strengths and opportunities exceed the weaknesses and threats against the business.

<b>Exhibit 192: SWOT analysis</b>	
<b>Strengths</b>	<b>Opportunities</b>
Board and management team with significant depth of experience PCT patent approved by EU patent office for CLTX CAR T Research agreements with leading research centres in CAR T Leadership has built and successfully sold early-stage biotechs (Paul Hopper was the executive chairman of Viralytics when it sold to Merck for \$502m) Sufficient cash position for the Phase I CLTX CAR T trials CAR T cell therapy is a one-time treatment	Growing acceptance in CAR T cell therapy globally Potential to fast track the indication via Phase II efficacy Significant corporate activity in the CAR T space Potential for breakthrough designation for GBM therapies
<b>Weaknesses</b>	<b>Threats</b>
GBM lead indication is notoriously difficult to treat  Manufacturing complex and expensive for CLTX CAR T  CAR T is a second line therapy Side-effects from CAR T cell therapy are challenging for the patient	Many different treatments being researched in same targets Significant research in CAR T solid tumour targeting by others Lead indication fails Phase II trials
Source: RaaS analysis	

## Risks Specific To CHM

### Key risks and considerations

There are a number of major risks associated with new therapy development and commercialisation. There is a higher probability of failure than success for each new therapy being studied. No CAR T development aimed at solid tumours has made it to the approval stage to date.

- The science for treating solid tumours is extremely complex, and no CAR T therapy has yet achieved approval in the solid tumour space. Safety and efficacy, as well as ability to scale and manufacture are all on the critical path to approval.
- There is significant competition in a crowded space, with many Phase I trials targeting glioblastoma in progress.
- The cost of progressing the trials for these CAR cell therapies is significant, with expensive manufacturing processes, and in our view, CHM will need to find the funding to complete development of its target therapies.

### Pipeline development and commercialisation

Each therapy in the pipeline must move through the regulatory approval process, from successful clinical trials to FDA approval. Clinical trials might not be successful due to safety or efficacy for the therapy. Following successful trials, the therapy then must be able to be manufactured at scale. Following that, marketing approval and then reimbursement approval must be gained. In the time it takes to win all the approvals, competitors may emerge with alternative treatments or competing treatments that may better meet the market. CHM will not be profitable until it successfully brings a product to market.

### Funding

CHM is not expected to generate revenue from product sales in the short to medium term. It's most advanced therapy, CHM 1101, is still in Phase I clinical trials. The cost of clinical trials from publicly available sources can be in the \$10m-\$20m+ range, and the ability of CHM to fund the trials of a growing pipeline will depend on obtaining outside funding. The ability of CHM to find partners to help fund the manufacturing, regulatory approvals or product marketing may impact the ability to commercialise the CAR T technology.

## Key personnel risk

The team at CHM is a significant competitive advantage. If any of the key personnel leave, it may be difficult to replace them. There may be a significant delay while the transition occurs.

## Financials

CHM is not expected to generate revenues until it either sub-licenses its technology or receives marketing approval. Therefore, the key focus currently is on cash burn. As of 30 June 2021, CHM had \$22.4m of cash in hand. At 30 September 2021, CHM had A\$17m in cash and had expended ~84% of funds against expected use of funds period to date % in its prospectus as per its quarterly report released 21 October 2021.

In its Annual Report, CHM stated it had agreed to pay US\$350,000 in an upfront license fee to Penn for the CDH17 agreement. There will be additional annual maintenance fees and milestone payments which have not been publicly announced.

In addition, as part of the City of Hope license agreement, there is an annual license fee of US\$150,000 in addition to the next instalment of the US\$10m upfront license fee (paid in three instalments over 30 months). The company has estimated a liability of \$3,683,391 in payments due to City of Hope as part of its licensing agreement to be paid in FY22.

In addition, the company has entered agreements to pay employees a total of US\$1.5m in cash and US\$1.2m in shares for forfeiture of long-term incentives with their former employment. As at 30 June 2021 the company has recognised \$1,300,680 as an expense for FY21. The expense is cumulative and vests over the service period on three separate dates, 31 Dec 2021, 2022 and 2023 which we have included in the forecasts.

On the current cash burn, we would expect the company would need to obtain additional funding by the end of FY22/early FY23.

<b>Exhibit 20: Cashflow summary for FY20a, FY21a and RaaS forecasts for FY22f (in A\$m)</b>			
<b>Year ending June 30</b>	<b>FY20a</b>	<b>FY21a</b>	<b>FY22f</b>
Cash receipts received	0.00	0.00	0.00
Payments to suppliers and employees	(0.03)	(8.84)	(1.41)
Payments for staff costs	-	-	(2.50)
Payments for administration	-	-	(1.50)
Other	-	-	-
<b>Total from operating activities</b>	<b>(0.03)</b>	<b>(8.84)</b>	<b>(5.41)</b>
	-	-	-
Payments for PP&E	-	(0.02)	-
Payments for intellectual property	-	(5.29)	(6.35)
Payments for investments	-	0.00	-
Interest received	-	-	-
<b>Total from investing activities</b>	<b>-</b>	<b>(5.30)</b>	<b>(6.35)</b>
	-	-	-
Proceeds from share issues and other equity securities	0.00	39.30	-
Share issue transaction costs	-	(2.72)	-
Proceeds from borrowings	0.03	0.86	-
Repayment of borrowings	-	(0.89)	(2.04)
Interest expense	-	(0.01)	-
<b>Total from financing activities</b>	<b>0.03</b>	<b>36.54</b>	<b>-</b>
<b>Net change in cash</b>	<b>0.00</b>	<b>22.40</b>	<b>(13.80)</b>
Cash at the beginning for the FY	-	0.00	22.41
Effects of exchange rate	-	0.01	-
<b>Cash and cash equivalents at end of period</b>	<b>0.00</b>	<b>22.41</b>	<b>8.61</b>

Source: Company data, RaaS estimates

## Peer Comparison – Wide Range of Enterprise Values

All peers chosen are biotechnology companies in the area of cell and gene therapy, which have therapies in pre-clinical or early-stage clinical trials. This peer group was selected because of their early stage and “novel” approaches for notoriously difficult-to-treat indications. In Australia, we consider AdAlta, Exopharm, Nyrada and Prescient Therapeutics as the closest peers due to their early stage of drug development. Of these, Prescient Therapeutics is the only one focused on CAR T cell therapies, which are in the pre-clinical stage. A brief description of each follows. The information on each of these companies was sourced from company announcements and websites.

**AdAlta (ASX: 1AD)** is a clinical-stage biotech developing a technology that mimics the shape and stability of a crucial antigen-binding domain, initially discovered in sharks and then developed as a human protein. The result is a range of unique compounds known as i-bodies, for treating a range of human diseases. AdAlta’s lead candidate AD-214 is being developed for the treatment of idiopathic pulmonary fibrosis (IPF) and other human fibrotic diseases.

**Exopharm (ASX:EX1)** is a clinical-stage company focused on developing and commercialising exosomes as therapeutic agents. The company has three technologies that allows customisation of exosomes, in which the LOAD technology improves loading of nucleic medicines into exosomes and the EVPS technology allows exosomes to be directed towards selected cell types. Its LEAP manufacturing technology provides access to exosomes for research and clinical uses. The company is developing engineered EVs (EEVs), an emerging form of precision medicine with application in areas such as neurology, cardiology and oncology. Its EEV projects under development are Fortrexo, Cognevo and PlexoDOX.

**Nyrada (ASX:NYR)** is a pre-clinical stage, drug discovery and development company focused on the development of small molecule drugs pertaining to the underlying pathological processes involved in cardiovascular, neurodegenerative and chronic inflammatory diseases. The company’s two lead drug development programmes are the cardiovascular program and the neuroprotection programme. The cardiovascular programme is a cholesterol-lowering drug that aims to reduce the risk of cardiovascular disease by providing a cholesterol-lowering treatment to help achieve a targeted safe cholesterol level. The neuroprotection programme provides treatment to prevent brain damage following traumatic brain injury (TBI) and stroke.

**Prescient Therapeutics (ASX:PTX)** is a clinical-stage oncology company focused on developing therapies for a range of cancers, using CAR T and targeted therapy approaches. Its Phase I(b) clinical candidate PTX-100 is a drug that blocks the cancer growth enzyme known as geranylgeranyl transferase-1 (GGT-1). PTX-200, a Phase I(b)/II(a) clinical candidate is a 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 leukaemia. Currently in pre-clinical stage, its OmniCAR is an immune receptor platform enabling controllable T cell activity and multi-antigen targeting with a single-cell product for the treatment of acute myeloid leukaemia (AML), Her2+ solid tumours, including breast, ovarian and gastric cancers, and glioblastoma multiforme (GBM).

As the following exhibit demonstrates, the more advanced the technology, the higher the market valuation.

Exhibit 21: ASX Compcos/peers					
Company	Ticker	Market Cap. (A\$m)	EV (A\$m)	Total Revenue* (A\$m)	Status of Products
AdAlta Ltd	1AD	20	16	3.99	Phase I
Exopharm Ltd	EX1	63	52	4.20	Initiating Phase I
Nyrada Inc	NYR	28	14	2.34	Pre-clinical
Prescient Therapeutics Ltd	PTX	135	119	0.07	Phase I/II
<b>Median</b>		<b>46</b>	<b>34</b>		

Sources: Refinitiv Eikon, as at 26 November 2021 \*Revenues predominantly R&D grants

Internationally, there are a number of listed cell and gene therapy companies focused on solid tumours and haematological cancers. We provide a brief description of each peer.

**Atara Biotherapeutics** is a clinical-stage allogeneic T cell immunotherapy company focused on therapies to treat solid tumours, haematologic cancers and autoimmune diseases. Atara's lead candidate, ATA129, is a third-party derived Epstein-Barr virus CTL for the treatment of Epstein-Barr virus (EBV). ATA188 is in development for the treatment of multiple sclerosis. ATA520, which is a third-party donor derived WT1-CTL, targets cancers expressing the antigen Wilms Tumour 1 (WT1). ATA520 is in Phase I clinical trials. The company's T cell product candidate, ATA230, which is a third-party derived cytomegalovirus-CTL (CMV-CTL), is in Phase II clinical trials for refractory CMV.

**Autolus Therapeutics** is a clinical-stage company engaged in developing programmed T cell therapies for the treatment of cancer. Using a broad suite of proprietary and modular T cell programming technologies, the company is engineering precisely targeted, controlled and highly active T cell therapies that are designed to better recognise cancer cells, break down their defence mechanisms and eliminate these cells. Autolus has a pipeline of product candidates in development for the treatment of haematological malignancies and solid tumours.

**Cellectis** is a Phase I/pre-clinical stage company developing the first-of-its-kind allogeneic approach for CAR-T immunotherapies in oncology, pioneering the concept of off-the-shelf and ready-to-use gene-edited CAR T cells to treat cancer patients. As a clinical-stage biopharmaceutical company with more than 21 years of expertise in gene editing, Cellectis is developing life-changing product candidates utilising TALEN<sup>®</sup>, its gene-editing technology, and PulseAgile, its pioneering electroporation system to harness the power of the immune system in order to target and eradicate cancer cells.

**Celularity Inc** is a clinical-stage company developing off-the-shelf placental-derived allogeneic T cells engineered with CAR T cells, natural killer (NK) cells, and mesenchymal-like adherent stromal cells (ASCs), targeting indications across cancer, infectious and degenerative diseases. It has four placental-derived allogeneic cell types: T cells' unmodified NK cells; genetically modified NK cells; and ASCs, which resulted in four key cell therapeutic programs - CyCART-19, CYNK-001, CYNK-101 and APPL-001, focused on six initial indications. Its CyCART-19 is a placental-derived CAR T cell therapy, in development for the treatment of B cell malignancies, initially targeting the CD19 receptor. CYNK-001 is developing for the treatment of acute myeloid leukaemia (AML), a blood cancer, and for glioblastoma multiforme (GBM), a solid tumour cancer, and COVID-19.

**Century Therapeutics** is in discovery stage for its lead candidate CNTY-101, which is targeting CD19 for relapsed, refractory B cell lymphoma and expects to progress to pre-clinical stage by mid-2022. Other targets are expected to progress to pre-clinical stage in 2023 and 2024. The company's pipeline includes CNTY-101, CNTY-103, CNTY-102 and CNTY-104. CNTY-103 is designed to treat glioblastoma. CNTY-102 is designed to further improve B cell malignancy treatment. CNTY-104, is being developed to treat acute myeloid leukaemia (AML).

**Poseida Therapeutics** is a clinical-stage company developing a broad portfolio of product candidates in a variety of indications based on its core platforms, including its non-viral piggyBac deoxyribonucleic acid (DNA) modification system, Cas-CLOVER site-specific gene-editing system, and nanoparticle- and adeno-associated virus (AAV)-based gene delivery technologies. The company's product candidate portfolio includes P-BCMA-101 (Phase II), P-PSMA-101 (Phase I), P-BCMA-ALLO1 (Phase I), P-MUC1C-ALLO1 (IND-enabling), Dual CAR (pre-clinical), P-OTC-101 (pre-clinical) and P-MMUT-101 (pre-clinical).

**Precision BioSciences** is a clinical-stage cell therapy and genome-editing company. The company's ARCUS genome-editing technology enables the production of specific nucleases that can insert, remove and modify deoxyribonucleic acid (DNA) at any location in a genome. The company is also engaged in developing genome editing-based product leads for human therapeutic, agricultural and biologics manufacturing applications. The company's product candidates in its CAR T cell development pipeline are PBCAR0191, PBCAR20A, and PBCAR269A. The company's ARCUS platform is designed to treat human diseases and create healthy and sustainable food and agricultural solutions. The company is also developing product candidates in three areas to overcome the limitations of other genome-editing technologies: allogeneic CAR T immunotherapy, in vivo gene correction, and food.

**TCR2 Therapeutics** is an immunotherapy company with a pipeline of clinical-stage T cell therapies for solid and haematological cancers. Its main product TC-210 is in Phase I/II and targeting mesothelin-positive solid tumours focused on four indications: non-small cell lung cancer, ovarian cancer, malignant pleural/peritoneal mesothelioma, and cholangiocarcinoma. TC-110 is targeting CD19-positive B cell haematological malignancies with the Phase I/II clinical trial focused on three specific areas: adult acute lymphoblastic leukaemia, aggressive non-Hodgkin's lymphoma and indolent NHL.

As the following exhibit highlights, market valuations are substantially higher for US/EU comparative peers, even for pre-clinical companies and those still in the discovery stage.

Company	Ticker	Market Cap. (native \$m)	Enterprise Value (native \$m)	Total Revenue (native \$m)	Status of Products
Atara Biotherapeutics Inc	ATRA	US\$1,605	US\$1,105	n.a	Phase I/II
Autolus Therapeutics PLC	AUTL	US\$467	US\$314	US\$2	Clinical
Collectis SA	ALCLS	EU\$356	EU\$199	EU\$83	Phase I/Pre-clinical
Celularity Inc	CELU	US\$806	US\$806	n.a	Phase I/IIa
Century Therapeutics	IPSC	US\$980	US\$915	n.a	Pre-clinical/Discovery
<b>Mustang Bio</b>	<b>MBIO</b>	<b>US\$204</b>	<b>US\$106</b>	<b>n.a</b>	<b>Phase I/II</b>
Poseida Therapeutics Inc	PSTX	US\$449	US\$168	n.a	Phase I/II
Precision Biosciences Inc.	DTIL	US\$579	US\$489	US\$24	Clinical
TCR2 Therapeutics Inc	TCRR	US\$215	(US\$13)	n.a	Phase I/II
<b>Median</b>		<b>US\$ 467</b>	<b>US314</b>		

Sources: Refinitiv Eikon, as at 25 November 2021

### Mustang Bio is the closest peer

Mustang Bio, listed on the NASDAQ, is a peer of interest. It is a clinical-stage biopharmaceutical company that is focused on cell and gene therapies for haematologic cancers, solid tumours and rare genetic diseases. Part of its pipeline is focused on CAR T therapies for solid tumours. One of its products is aimed at brain cancers, and it has licensed technology from City of Hope and is currently in Phase I trials. Mustang Bio is pre-revenue, and its pipeline, though larger, has some similarities to CHM. We therefore view the EV as pertinent.

Mustang Bio was incorporated in 2015, and in 2017 entered into exclusive, worldwide licensing agreements with City of Hope for the use of three novel CAR T therapies in the development of cancer treatments. Mustang has run eight Phase I trials in CAR T and gene therapy programs since 2020, with one Pivotal Phase I/II project included and one IND application in progress. Six of its Phase I trials are currently ongoing. Mustang Bio currently looks at the therapeutic modality of ex-vivo gene therapy, hematologic CAR Ts and solid tumour CAR Ts. Within the solid tumour CAR Ts, Mustang has three clinical programmes focussed on glioblastoma



multiforme using CAR T cell therapy, and one programme focussed on prostate cancer. Mustang has partnered with City of Hope cancer centre via licensing agreements in three of its Phase I trials, two for GBM and one for prostate cancer.

For its GBM programmes, Mustang is focussed on the IL-13Ra2 target with City of Hope (which has ~30,000 new diagnoses per year); and in a second trial with City of Hope, it is focused on the HER2 specific CAR-modified virus-specific T cells. There are an estimated 12,760 new cases worldwide in 2018. (Source: Mustang Bio website accessed 8 October 2021)

Mustang serves as a comparable to Chimeric as CHM builds out its pipeline. Like Chimeric, Mustang does not yet have revenue, and is focused on gene and cell therapy. Mustang has partnered with high-quality cancer research centres like City of Hope. Mustang is also focused on solid tumours and CAR T cell therapies in hard-to-treat cancers with very low survival rates. Mustang has also secured partnerships with world-leading research centres, such as City of Hope. Key differences are that Mustang has multiple Phase I trials and pivotal designation on several trials.

We know that Chimeric is working to add licensing agreements and to move its pre-clinical studies into Phase I trials as indications are firmed. We believe as Chimeric progresses its pre-clinical investigations into Phase I trials with its CHM1101 and CHM2101 therapies, that its value will increase to potential acquirers and investors. We also believe that as Chimeric expands its pipeline, with more partnerships and more indications, it will become more attractive. Chimeric has the team in place with experience in achieving all of these for other successful biotechs in the cell therapy space and therefore has the expertise to achieve pipeline expansion and attractive partnerships. If safety and efficacy can be proved in indications being explored in pre-clinical studies then we may see further Phase I trials as well from its current pipeline.

## Valuation

We utilised a risked NPV for the most advanced technology CHM 1101 CLTX CAR-T targeting glioblastoma. Our forecasts are based on the assumption that CHM 1101 receives all approvals worldwide and that commercial treatments commence in 2025. We assume that CHM sub-licenses the CLTX CAR T cell therapy to a partner upon receipt of Phase I approvals for the treatment of glioblastoma.

**Exhibit 23: rNPV valuation for CHM**

	Discount Rate	Value in A\$m	Value per undiluted share	Value per diluted share
Mid-case valuation	10.3%	243	\$0.74	\$0.67
An upside-case valuation	10.3%	307	\$0.93	\$0.85
A low- (delayed) case valuation	10.3%	165	\$0.50	\$0.46
Ordinary shares on issue (undiluted)		330,859,716		
Ordinary shares on issue (fully diluted inc. options)		360,538,613		

Source: RaaS analysis

### Mid-case

In the mid-case, we assume CHM sub-licenses the technology in late CY2022/early CY2023, following successful Phase I trials and at the start of Phase 2/2a. We note that the company has the in-house expertise to build out commercialisation on its own and may decide to take that path. However, from a financial modelling perspective, this requires a whole different set of assumptions and business profile. We assume that CHM receives an upfront license fee and milestone payments from the deal in four stages totalling US\$550m. We rely on the data from BioSci that we discussed earlier in the report for this assumption. Based on the latest data available, 2016-2019 transactions, the average deal size for Phase I was US\$477m with the upfront at US\$51m and Phase II was US\$552m with US\$77m upfront. Note that this is just for CHM 1101 for GBM. It may well be that the company advances other indications from pre-clinical within this time horizon which could add further parameters to our valuation and we will address these as they occur.

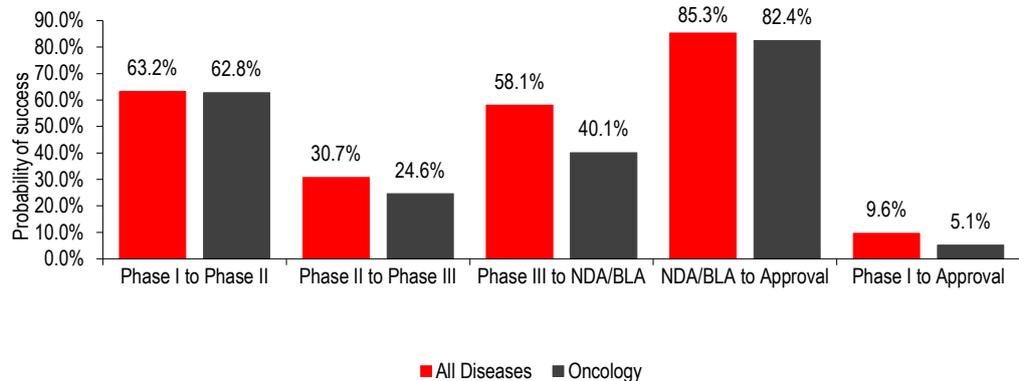
We assume first revenues in 2025 and that CHM receives a 12% royalty on revenues. We base this assumption on BioSci's analysis of royalty deals from 2007-2016 in which cancer-focused biotechs in Phase I/Phase II secured an average royalty of 10.9%.<sup>6</sup> Another paper published in 2013 by Medtrack estimated that the royalty rate for oncology in the five years' prior averaged 8% out of 87 deals.<sup>7</sup> Phase I biotechs received a similar royalty rate. We are happy to apply a slightly higher royalty rate on our forecasts on the basis that we are assuming that CHM receives FDA Orphan Drug status for the CLTX CAR T product and therefore accelerated development and extended market protection.

Since CAR T therapies are so new to the market, with none approved for solid tumours, a reliable chance-of-success table has not yet been established for this particular treatment. Therefore, we rely on data released by BIO, BioMedTracker and AMPLION in a study of clinical development success rates, 2006-2015, which found a 9.6% success rate for all drugs from Phase I to approval. We note that the success rate for oncology drugs is lower at 5.1%.

<sup>6</sup> BioSci Advisors, Effective Royalty Rates in Biopharma Alliances, March 25, 2017

<sup>7</sup> Medtrack, Maximising Royalty Rate Opportunities in Pharma Licensing: Analysis of Average Royalty Rates in Pharma by Phase and Therapy Area, 2013

**Exhibit 24: Probability of success weightings all drugs and oncology drugs (N=9,985 for Phase I to approval)**



Source: BIO, Biomedtracker, AMPLION, Clinical Development Success Rates 2006-2015 (NDA = New Drug Application, BLA = Biologic License Application)

The key assumptions used to derive our mid-case valuation are set out in the following exhibit. Note that there is no hard data available on the number of GBM patients eligible for therapy. We have relied on estimates by Roche<sup>8</sup>, the manufacturer of bevacizumab, that total cases per year are 38,800, and then estimate that 50% of these meet the criteria for treatment, and that of these 52% can afford the treatment, are in proximity of a treatment centre and decide to use CAR T cell therapy. Our assumptions start with 10% of this estimated market and building over 10 years to 95%. We use a treatment price of US\$450,000 per patient per course of therapy, and cost of treatment to CHM of US\$135,000, and apply a 12% royalty rate for sub-licensing and 10% success rate. After applying a 10.3% discount rate to achieve net present value, we arrive at a rNPV of US\$167m (A\$229m).

**Exhibit 25: Key assumptions for RaaS's mid-case valuation**

Parameters	Value
#/100,000 GBM patients per year in US	5
#/100,000 that get GBM per year in CA EU JP AU	3
Total cases per year for GBM	38,800
% of patients that meet criteria for treatment	50%
% of patients that can afford and attend treatment	52%
Total # of patients that go forward with CHM1101 treatment in year one	10,088
% growth/year of patient population	3.50%
CHM GBM market penetration first year	10%
CHM peak market penetration	95%
Treatment price per patient (US\$)	\$450,000
Cost to CHM per treatment (US\$)	\$135,000
Royalty rate for sub-licensing	12%
Chance of success	10%
AUD/USD	0.73
Discount Rate used on free cashflows	10.3%

Source: RaaS estimates

Adding in net cash and adjusting for estimated corporate costs, our valuation is A\$243m or \$0.74/share (\$0.67/share fully diluted for options). As exhibit 26 on the following page demonstrates, our valuation is sensitive to both the discount rate used and to the growth rate of the patient population.

**Exhibit 26: Mid-case valuation**

Sum of the parts (mid-case)	Value in A\$m	Value per share (undiluted) A\$	Value per diluted share A\$
CHM 1101 for glioblastoma	229	\$0.69	\$0.63
Cash (at 30-Sept 2021)	17	\$0.05	\$0.05
Corporate costs	(3)	\$(0.01)	\$(0.01)
<b>Total mid-case</b>	<b>243</b>	<b>\$0.74</b>	<b>\$0.67</b>

Source: RaaS estimates

8 [https://www.roche.com/dam/jcr:f2283374-01e4-4050-9461-fc8f03c49738/en/backgrounder\\_glioblastoma\\_concise\\_guide.pdf](https://www.roche.com/dam/jcr:f2283374-01e4-4050-9461-fc8f03c49738/en/backgrounder_glioblastoma_concise_guide.pdf)

### Exhibit 27: Sensitivities on mid-case valuation

Increase/decrease	+1%	-1%	0%
<b>Discount Rate</b>	<b>11.3%</b>	<b>9.3%</b>	<b>10.3%</b>
Mid-case valuation (GBM) A\$m	223	266	243
Undiluted A\$/share	\$0.67	\$0.80	\$0.74
Change	(8.2%)	9.2%	
<b>% Growth/year of patient population</b>	<b>4.50%</b>	<b>2.50%</b>	<b>3.50%</b>
Mid-case valuation (GBM) A\$m	269	221	243
Undiluted A\$/share	\$0.81	\$0.67	\$0.74
Change	10.5%	(9.4%)	

Source: RaaS estimates

### Low (delayed) case

In our delayed case, we assume a programme delay of one year. We assume that CHM sub-licenses in 2023 after receiving Phase I approval and receives an upfront license fee, but doesn't receive the first milestone payment until 2025 and first royalties on revenue in 2027. We still assume that COH receives an upfront license fee and milestone payments from the deal in four stages totalling \$550m. This derives a rNPV of A\$150m or \$0.45/share. After including the cash as at 30 September and corporate costs, we arrive at a delayed case of A\$165m or \$0.50/share.

### Exhibit 28: A delayed-case valuation with revenues commencing in 2027 versus mid-case commencement of 2025

Sum of the parts (delayed-case)	Value in A\$m	Value per share (undiluted) A\$	Value per diluted share A\$
CHM 1101 for glioblastoma	150	\$0.45	\$0.42
Cash (at 30-Jun 2021)	17	\$0.05	\$0.05
Corporate costs	(3)	\$(0.01)	\$(0.01)
<b>TOTAL</b>	<b>165</b>	<b>\$0.50</b>	<b>\$0.46</b>

Source: RaaS estimates

### A high-case

In our high-case, we utilise the same methodology as our mid-case, but attribute a higher percent of patients available to access the CHM 1101 therapy (34% versus 26% in our mid-case). This adds A\$64m to the rNPV.

### Exhibit 29: A high-case valuation using 18% of eligible patients starting treatment

Sum of the parts (high-case)	Value in A\$m	Value per share (undiluted) A\$	Value per diluted share A\$
CHM 1101 for glioblastoma	293	\$0.89	\$0.81
Cash (at 30-Jun 2021)	17	\$0.05	\$0.05
Corporate costs	(3)	\$(0.01)	\$(0.01)
<b>TOTAL</b>	<b>307</b>	<b>\$0.93</b>	<b>\$0.85</b>

Source: RaaS estimates

## Board and Management

### Directors

#### **Paul Hopper, Executive Chairman and Founder, appointed February 2020**

Mr Hopper has been a life sciences' leader for more than two decades, founding his first biotechnology company in 2003 before moving into investment banking in 2005 where for the next nine years, he was involved in the funding and corporate development of several ASX-listed and NASDAQ-listed biotechs, including Imugene (ASX:IMU), a clinical-stage cancer immune-oncology company he founded in 2012 and which he continues to Chair; and Viralytics, where he was Chairman from 2008 to 2018 when the company was acquired by Merck (NYSE:MRK) for A\$502m. In addition to Imugene, Mr Hopper is also the Chairman of Suda Pharmaceuticals (ASX:SUD) and a Non-Executive Director of Scopus BioPharma (NASDAQ:SCPS). Mr Hopper is also founder and Executive Chairman of Radiopharm Theranostics (ASX:RAD), which listed on the ASX on November 26 after raising \$50m at \$0.60/share to give a market capitalisation at listing of \$152m. Radiopharm Theranostics has a pipeline of products in pre-clinical and clinical stages of development.

#### **Jennifer Chow, Managing Director and CEO, appointed August 2021**

Ms Chow is a cell therapy pioneer and expert with experience developing and commercialising FDA-approved CAR T cell therapies, Abecma™, Breyzani™, Yescarta™ and Tecartus™. She has held leadership positions at the world's leading CAR T and cell therapy companies, including most recently at Kite where she was the Head of Global Marketing, Analytics and Commercial Operations. Prior to Kite, Ms Chow was the global cell therapy commercial lead at Celgene Corporation. Prior to her appointment as CEO and Managing Director, Ms Chow was Chief Operating Officer of Chimeric Therapeutics, a position she was appointed to in December 2020 ahead of the IPO.

#### **Leslie (Mi Ok) Chong, Non-Executive Director, appointed August 2020**

Ms Chong has more than 20 years' experience leading clinical and department development in oncology. Currently Ms Chong is the CEO and MD of a clinical-stage immuno-oncology company Imugene (ASX:IMU) and a non-executive director of Cure Brain Cancer Foundation. Ms Chong began her career in oncology clinical development at GSK and Exelixis before taking the role of Senior Clinical Program Lead at Genentech, where she focused on therapies for brain cancer.

#### **Dr Lesley Russell, Non-Executive Director, appointed August 2020**

Dr Russell is a haematologist/oncologist and has more than 25 years of international operational and leadership experience with established and emerging biotechs including Amgen, Eli Lilly, Teva and Cephalon. She previously served as the Chief Medical Officer at Cephalon Inc, prior to its US\$6.8b takeover by Teva Pharmaceuticals where she served as Global Head of R&D. She has undertaken clinical development in a number of therapeutic areas including haematology/oncology and has had multiple new drug approvals with both the Food and Drug Administration and European Medicines Agency. Dr Russell has extensive experience as a director of NASDAQ-listed pharmaceutical companies. She is a member of the Royal College of Physicians UK. Dr Russell currently serves as a Non-Executive Director of Enanta Pharmaceuticals (NASDAQ: ENTA) and Imugene (ASX: IMU).

#### **Cynthia (Cindy) Elkins, Non-Executive Director, appointed February 2021**

Ms Elkins is a 30-year veteran of biotech and high tech with leadership roles at Ariba, Genentech/Roche and Juno Therapeutics. Ms Elkin created the Global Cell Therapy Patient Experience including all patient operations and digital platform while at Juno/Celgene/BMS. Her sector experience includes autologous cell therapy and biooncology. She also has extensive experience in large acquisitions/integrations and utilising technology to create large digitally-connected communities. Ms Elkin also sat on the board and audit committee for global



wellness and weight loss company Weight Watchers for five years and she is currently the Chair of The Foundation for Art & Healing whose signature initiative is The UnLonely Project.

**Dr George Matcham, Non-Executive Director, appointed July 2021**

Dr Matcham brings more than three decades' experience with cell therapy giant Celgene Corporation (owned by Bristol Myer Squib) having joined Celgene in its infancy as a 30-person start-up in 1988. At Celgene, Dr Matcham championed the introduction of cellular immunotherapy and had extensive involvement in biotech collaborations in biotherapeutics and cell therapy, ranging from technical oversight to board membership. His other current directorship is at Instil Bio (NASDAQ:TIL).

## Management

**Dr Li Ren, Vice President, Technical Operations, appointed June 2021**

Dr Li Ren brings more than 20 years' experience developing and advancing cell therapy drug candidates from the pre-clinical stage through to commercial licensure. She joined Chimeric from Bristol-Myers Squibb (NYSE:BMJ) where she most recently oversaw the technology transfers of Juno cell therapy pipeline products to BMS manufacturing facilities and provided technical support for both GMP manufacturing and quality control testing. Prior to BMS, Dr Ren spent almost 15 years at Celgene and Celgene Cellular Therapies, leading chemistry, manufacturing and control efforts to advance CAR T, TCR and NK cell therapies to clinic. Over the course of her career, Dr Ren has also supported multiple IND submissions for pipeline products and designed and led process and analytical validation programmes in support of commercial registration filings.

**Dr Eliot Bourk, Vice President, Business and Corporate Development, appointed February 2021**

Dr Bourk was previously the head of early commercial development at Kite Pharma, a subsidiary of Gilead Sciences (NASDAQ:GILD), and leader in engineered CAR T cell therapies for both haematological cancers and solid tumours. Prior to joining Kite, Dr Bourk spent several years focused on cell therapy development at Celgene Corporation where he was the commercial lead for the development of next-generation platforms in addition to his role developing Celgene's global CAR T commercial strategy, commercial operations and insights.

**Dr Syed Rizvi, Chief Medical Officer, appointed December 2020**

Most recently, Dr Rizvi was the VP, Clinical Development, Medical Affairs, Product Safety & Data Sciences at Legend Biotech (NASDAQ:LEGN) and prior to Legend, Dr Rizvi was Head of CAR T Programme and Global Medical Affairs lead at Celgene Corporation. His career also includes leadership roles in oncology clinical development at Novartis (SWX:NOVN) and Merck (NYSE:MRK).

**Alison Gartner, Project Manager**

Ms Gartner has more than 20 years' experience as a biotech analyst and life sciences investor across ASX-listed and private companies through her investment management roles at Asian Union Investments and life sciences fund Bioscience Managers. Ms Gartner is also a director of the National Foundation of Medical Research and Innovation.

## Other Management

**Phillip Hains, Chief Financial Officer, Joint Company Secretary**

CHM currently outsources its finance and company secretary functions to specialist public practice, The CFO Solution. Mr Hains is the principal and founder of The CFO Solution, a business he founded more than 23 years ago. He is also the principal of The IPO Solution, which works with companies to ensure their IPO runs as smoothly as possible. He is currently the company secretary of several ASX-listed companies including Imugene (ASX:IMU), Immuron (ASX:IMC), SelfWealth (ASX:SWF), Total Brain (ASX:TTB) and SUDA Pharmaceuticals (ASX:SUD).

**Nathan Jong, Joint Company Secretary**

Mr Jong is a manager at The CFO Solution. His previous experience includes senior auditing roles at accounting firms BDO, HLB Mann Judd and KPMG.

**Cell Therapy Scientific Advisory Board**

**Dr Yi Lin**

Dr Lin is currently the Chair of the Cellular Therapeutics Cross Disciplinary group at Mayo Clinic Cancer Center, an Associate Professor of Medicine, and a consultant in the Division of Haematology and the Division of Experimental Pathology at the Mayo Clinic. Dr Lin is a pioneer in cellular immunotherapy having participated in many of the first in-human CAR T cell therapy trials and multiple Phase II cellular immunotherapy clinical trials.

**Dr Eric Smith**

Dr Smith is the Director of Translational Research, Immune Effector Cell Therapies, head of the Eric Smith Lab for Synthetic Biology and Cellular Engineering at the Dana-Farber Cancer Institute and a member of the Faculty of Medicine at the Harvard Medical School in Boston, Massachusetts. He specialises in cellular immunotherapy and haematological malignancies with a focus on multiple myeloma.

**Dr Michael Bishop**

Dr Bishop is currently Professor of Medicine and Director, the David and Etta Jones Center for Cellular Therapy at the University of Chicago, a leading cellular therapy programme in the United States. He is widely recognised as an expert in haemopoietic stem cell transplant and cellular therapy research and patient care, with a focus on leukaemias and lymphomas.

**Dr David Maloney**

Dr Maloney is a Full Member of the Clinical Research Division, the Medical Director, Cellular Immunotherapy and the Bezos Family Immunotherapy Clinic, and he holds the Leonard and Norma Klorfine Endowed Chair for Clinical Research at the Fred Hutchinson Cancer Research Center in Seattle, Washington. Dr Maloney is a renowned clinician-scientist who has been at the forefront of cellular therapy research and development with a primary focus in the development of CAR T cell therapy for a wide variety of cancers. Dr Maloney has been a clinical investigator in more than 15 cellular therapy clinical trials ranging from Phase I, first in-human trials to commercially approved CAR T cell therapies.

**Glioblastoma Scientific Advisory Board**

**Dr Christine Brown (Chair)**

Dr Brown is a Heritage Provider Network Professor in Immunotherapy and Professor in Haematology and Haematopoietic Cell Transplantation and Immuno-Oncology Departments at the City of Hope Cancer Center in California. She is also the Deputy Director of the T Cell Therapeutics Research Laboratories where she leads multi-functional teams to translate CAR T cell therapies to the clinic.

**Dr Larry Couture**

Dr Couture has more than 30 years' experience in cellular and genetic therapies. He has been a key participant in numerous first-in-man clinical studies, including the first human gene therapy trials, first administration to humans of a genetically-engineered virus and many other cell and gene therapy milestones. Dr Couture was the Founding Director/Senior Vice President of City of Hope's Center for Applied Technology and Founding Director of its Center for Biomedicine and Genetics. He served for six years on the FDA's Cellular, Tissue and Gene Therapy Advisory Committee.

**Dr Benham Badie**

Dr Badie is Chief, Division of Neurosurgery and the Heritage Provider Network Professor in Gene Therapy at City of Hope Cancer Center in California. Dr Badie is also the Director of City of Hope’s Brain Tumour Programme where he is leading research into the development of novel immunotherapy approaches for malignant brain tumours through the activation of microglia and macrophages using nanoparticles.

**Dr Yvonne Chen**

Dr Chen is a co-director of the UCLA Jonsson Comprehensive Cancer Center Tumour Immunology Programme and an Associate Professor in the Department of Microbiology, Immunology, and Molecular Genetics at UCLA. Dr Chen has made a number of important advances in the realm of T cell engineering, including strategies to overcome cancer’s ability to evade and suppress the immune system.

**Dr Nader Sanai**

Dr Sanai is the J.N. Harber Professor of Neurological Surgery and holds the Francis & Dionne Najafi Chair in Neurosurgical Oncology at the Barrow Neurological Institute in Arizona. He is an internationally recognised brain tumour surgeon with a clinical practice devoted entirely to patients with benign and malignant brain tumours.

**Dr Michael Barish**

Dr Barish is the Chair and Professor, Department of Developmental and Stem Cell Biology, at City of Hope. He is an accomplished, and well-published, cellular neurobiologist who has studied brain development for more than 30 years.

## Top 20 Shareholders

Executive Chairman Paul Hopper is the company’s largest shareholder with 24.9% (82.39m shares) with the bulk of these shares held in Moreglade Pty Ltd.

<b>Exhibit 30: Top 20 shareholders</b>		
<b>Name</b>	<b>Shares Held (M)</b>	<b>% Ownership</b>
Moreglade Pty Limited (Paul Hopper)	77.78	23.33%
City of Hope	11.97	3.59%
Christine Brown	11.70	3.51%
Michael E Barish	11.52	3.46%
HSBC Custody Nominees (Australia) Ltd - A/C 2	10.66	3.20%
Citicorp Nominees Pty Limited	9.69	2.91%
Brispot Nominees Pty Ltd (House Head Nominee A/C)	5.41	1.62%
Zerrin Investments Pty Ltd	4.80	1.44%
HSBC Custody Nominees (Australia) Limited	4.25	1.28%
CS Third Nominees Pty Limited (HSBC Cust Nom AU Ltd 13)	3.75	1.12%
UBS Nominees Pty Ltd	3.48	1.04%
Mr Lisheng Wang	3.17	0.95%
Australian Direct Investments Pty Ltd	2.30	0.69%
Jarl Mohn <The Mohn Family A/C>	2.30	0.69%
Liberty National Pty Ltd (Liberty National Family)	2.00	0.60%
Marshall Super Fund Pty Ltd (J Marshall Super Fund)	1.80	0.54%
Mr Duncan Gerard Gowans & Mrs Jodie Louise Gowans (Gowans Superfund)	1.73	0.52%
Kamala Holdings Pty Ltd (The Kamala 1994 S/F)	1.62	0.48%
Mr Tim Bensley and Ms Jenny Jiaer Zhang	1.34	0.40%
Mrs Anna Felicia Belton	1.32	0.40%
<b>TOTAL</b>	<b>172.58</b>	<b>51.77%</b>

Source: Chimeric Therapeutics FY21 Annual Report

# FINANCIAL SERVICES GUIDE

**RaaS Advisory Pty Ltd**

**ABN 99 614 783 363**

**Corporate Authorised Representative, number 1248415**

**of**

**BR SECURITIES AUSTRALIA PTY LTD**

**ABN 92 168 734 530**

**AFSL 456663**

**Effective Date: 6<sup>th</sup> May 2021**

### About Us

BR Securities Australia Pty Ltd (BR) is the holder of Australian Financial Services License (“AFSL”) number 456663. RaaS Advisory Pty Ltd (RaaS) is an Authorised Representative (number 1248415) of BR.

This Financial Service Guide (FSG) is designed to assist you in deciding whether to use RaaS’s services and includes such things as

- who we are
- our services
- how we transact with you
- how we are paid, and
- complaint processes

Contact Details, BR and RaaS

BR Head Office: Suite 5GB, Level 5, 33 Queen Street, Brisbane, QLD, 4000

RaaS. 20 Halls Road Arcadia, NSW 2159

P: +61 414 354712

E: [finola.burke@raasgroup.com](mailto:finola.burke@raasgroup.com)

RaaS is the entity providing the authorised AFSL services to you as a retail or wholesale client.

**What Financial Services are we authorised to provide?** RaaS is authorised to

- provide general advice to retail and wholesale clients in relation to
  - Securities
- deal on behalf of retail and wholesale clients in relation to
  - Securities

The distribution of this FSG by RaaS is authorized by BR.

### Our general advice service

Please note that any advice given by RaaS is general advice, as the information or advice given will not take into account your particular objectives, financial situation or needs. You should, before acting on the advice, consider the appropriateness of the advice, having regard to your objectives, financial situation and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Prospectus, Product Disclosure Statement or like instrument. As we only provide general advice we will not be providing a Statement of Advice. We will provide you with recommendations on securities

### Our dealing service

RaaS can arrange for you to invest in securities issued under a prospectus by firstly sending you the offer document and then assisting you fill out the application form if needed.

### How are we paid?

RaaS earns fees for producing research reports. Sometimes these fees are from companies for producing research reports and/or a financial model. When the fee is derived from a company, this is clearly highlighted on the front page of the report and in the disclaimers and disclosures section of the report.

We may also receive a fee for our dealing service, from the company issuing the securities.

### Associations and Relationships

BR, RaaS, its directors and related parties have no associations or relationships with any product issuers other than when advising retail clients to invest in managed funds when the managers of these funds may also be clients of BR. RaaS’s representatives may from time to time deal in or otherwise have a financial interest in financial products recommended to you but any material ownership will be disclosed to you when relevant advice is provided.

### Complaints

If you have a complaint about our service you should contact your representative and tell them about your complaint. The representative will follow BR’s internal dispute resolution policy, which includes sending you a copy of the policy when required to. If you aren’t satisfied with an outcome, you may contact AFCA, see below. BR is a member of the Australian Financial Complaints Authority (AFCA). AFCA provide fair and independent financial services complaint resolution that is free to consumers.

Website: [www.afca.org.au](http://www.afca.org.au); Email: [info@afca.org.au](mailto:info@afca.org.au); Telephone: 1800931678 (free call)

In writing to: Australian Financial Complaints Authority, GPO Box 3, Melbourne, VIC, 3001.

### Professional Indemnity Insurance

BR has in place Professional Indemnity Insurance which satisfies the requirements for compensation under s912B of the Corporations Act and that covers our authorized representatives.

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