

A Clinical Stage Company Pioneering the Next Generation of Cellular Therapies

Bell Potter Healthcare Conference 20 November 2024



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### **Corporate overview**

#### Shareholder distribution



- Bioscience Managers
- Fidelity
- Fujifilm
- Remaining top 20
- Other

#### Largest shareholders



13.1%

Bioscience Managers is an international healthcare investment firm headquarter in Melbourne that finances and enables innovative science and technology with the potential to transform healthcare.



10.0%

Fidelity International is a world leading investment and asset management firm, responsible for total client assets of >US\$750 billion, from clients across Asia Pacific, Europe, the Middle East, South America and Canada.

#### **Financial information**

Share price (15 November 2024)	A\$0.245
Shares on issue	~181m
Market capitalisation	~A\$44m

#### FUJIFILM

4.5%

Fujifilm is a Japanese multinational conglomerate operating in the realms of photography, optics, medical electronics, biotechnology and chemicals. Cynata has a strategic manufacturing partnership with Fujifilm.

#### Top 20 hold ~47% of the Company's share register<sup>2</sup>



# **Target indications**

Indication		Trial phase	Upcoming catalysts*	Market opportunity
Acute Graft vs Host Disease (aGvHD) FDA Orphan Designation	Cynata Funded & Managed	Phase 2 ongoing	Enrolment completion – H1 2025 Results – H2 2025	US\$600m <sup>1</sup>
Diabetic Foot Ulcers (DFU)		Phase 1 ongoing (enrolment complete)	Results – Q4 2024/Q1 2025	US\$9.6bn <sup>2</sup>
Osteoarthritis (OA) (managed by USYD, funded by NHMRC)	Partner Funded & Managed	Phase 3 ongoing (enrolment complete)	Results – H1 2026	US\$11.6bn <sup>3</sup>
<b>Widney Transplantation</b> (managed and <b>funded by LUMC</b> )		Phase 1/2 ongoing	Results (Cohort 1) – H1 2025	US\$5.9bn <sup>4</sup>

Note: Cynata retains commercial rights for both of the partner funded & managed programs



1. Global Graft versus Host Disease Market 2019-2029 (Reflects forecast market in 2026); 2. Zion Market Research, 2019 (represents global treatment market in 2025); 3. Persistence Market Research 2018 research report: "Osteoarthritis Treatment Market: Global Industry Analysis (2012-2016) and Forecast (2017-2025) (Reflect OA market by 2025); 4. Organ Transplant Immunosuppressant Drugs Market in 2026, Grand View Research, Inc., 2019 USYD = University of Sydney; NHMRC = National Health and Medical Research Council; LUMC = Leiden University Medical Center

\* Timing of events is approximate, based on the Company's information as at the date of this presentation, and subject to change. Timing refers to calendar years.

Cynata's revolutionary Cymerus<sup>™</sup> platform technology



# Introduction to MSCs

#### What are Mesenchymal Stem Cells (MSCs)?<sup>1</sup>

- MSCs are cells that naturally occur in the human body, which have key unique properties which make them ideal for potentially treating various diseases:
  - Anti-inflammatory properties important as many diseases are the result of excess inflammation
  - **Immunomodulatory properties**<sup>2</sup> either promote the body's own immune system to fight off infection/disease or suppress the immune system when it may be overreacting and causing disease
  - **Tissue repair** and **regeneration**<sup>3</sup> MSCs provide support to other cells, promoting tissue repair and regeneration
- MSCs have immense therapeutic potential, but these cells only occur naturally in the human body in **small numbers**

#### MSC-based therapy (using MSCs to treat diseases):

- Involves administration of much **larger numbers** of MSCs than exist within the body naturally, to treat/prevent disease
- First investigated in 2004, in a 9-year old boy with graft versus host disease<sup>4</sup>
- Since then, more than 1,700 clinical trials have been initiated, to investigate MSC therapy for many different diseases<sup>5</sup>





- Also known as mesenchymal stromal cells or medicinal signalling cells
- 2. Kelly and Rasko, Front. Immunol. 12:761616 (2021)
- 3. Spees et al, Stem Cell Res Ther 7:125 (2016)

- 4. Le Blanc et al, Lancet. 363: 1439–41 (2004)
- 5. Clinicaltrials.gov

### **Conventional MSC manufacturing process**

Standard	Many donors Eac provi	Isolation of MSCs from each donation	Culture expansion of MSCs from each donation	Patients Donor 1 Donor 2 Donor 3 Donor 4 Donor x
Process'	New donors must be identified on regular basis; donors must consent to <b>surgical</b> extraction	MSCs must be <b>isolated</b> from <b>mixture of cells</b> from <b>each</b> donation – producing only <b>small</b> <b>number</b> of MSCs per donation	Extensive culture expansion required (growing cells) – large number of MSCs required	Different batches of MSCs come from <b>different</b> <b>donors</b>
Major Challenges	Different donors = Variable starting material = Inconsistent product	Small number of MSCs retrieved per donation = Extensive MSC culture expansion required	Extensive MSC culture expansion = Functional changes = Loss of potency	MSCs from different donors are administered to different patients = Inconsistent results



### Cymerus<sup>™</sup> process





iPSCs are induced pluripotent stem cells (iPSCs). Mature adult cells reprogrammed to become pluripotent, which means they have effectively limitless proliferation capacity and potential to differentiate into any adult cell type (including MSCs). iPSCs are the ideal starting material for commercial production of cellular products.

### Acute Graft versus Host Disease (aGvHD)

An opportunity based on compelling clinical data



# Bone marrow transplants & GvHD

#### Bone marrow transplant (also known as blood stem cell transplant)

- The procedure replaces blood stem cells in people whose bone marrow has been destroyed by large doses of chemotherapy or radiotherapy
- Bone marrow transplants can be curative for blood cancers (e.g. lymphoma & leukaemia)
- However these procedures, if they use third party donors ("allogeneic"), can result in graft versus host disease (GvHD)

#### Graft versus host disease

- GvHD is where the transplanted cells recognise the recipient's cells as "foreign"
- This results in the transplant (the "graft") attacking the recipient's (the "host's") tissues and organs
- Recipients are then typically provided corticosteroids (first-line treatment), however 50% of develop what's known as steroid-resistant acute GvHD (aGvHD)
- In steroid-resistant patients, 2-year survival rate is less than 20%<sup>1</sup>





### Acute graft versus host disease (aGvHD)



\* "Allogeneic" means cells come from someone else (a donor) rather than the recipient; "transplant" refers to blood stem cell transplants

#### Current treatments for steroid-resistant aGvHD (SR-aGvHD):

- Ruxolitinib
  - Good initial response rates but no apparent increase in longer-term survival rates (18 months +) compared to controls<sup>6</sup>
  - Serious/life threatening adverse reactions are common in patients who receive Ruxolitinib (e.g. infections, blood disorders)<sup>7</sup>
  - Ruxolitinib is priced at ~US\$18k per month, and typically requires at least 6 months treatment for GvHD (i.e. >US\$100k per patient), and has forecast sales of US\$4.5b in 2024 across all indications<sup>8</sup>
- Other investigational agents
  - Sometimes referred to as "Best Available Therapy (BAT)" in clinical trials
  - Most have shown limited efficacy and/or poor safety profiles

#### Safer and more effective treatments are desperately needed for aGvHD

6.



- Malard et al, Nature Reviews Disease Primers 9: 27 (2023).
  Reshef et al, J Clin Oncol. 39(17):1878-1887 (2021).
  Akahoshi et al, Blood Adv. 7(16):4479-4491 (2023).
  - Major-Monfried et al, Blood.131(25):2846-2855 (2018).

- 5. Westin JR et al, Adv Hematol. 2011:601953 (2011).
- Zeiser et al, N Engl J Med 2020;382:1800-1810 (2020).
- 7. JAKAFI® (ruxolitinib) tablets, for oral use, US FDA approved Prescribing Information, September 2021.
- 8. Sales figures relate to all approved indications, including myelofibrosis, polycythemia vera, and GvHD.

### Phase 1 clinical trial – results (SR-aGvHD)



Outstanding **response rates** and **overall survival** 



Sustained outcomes achieved up to 2 years after the first infusion



**Importantly:** CYP-001 was shown to be **safe and well tolerated** 



No serious adverse events or other safety concerns related to CYP-001

Trial conducted in 15 patients with steroid-resistant aGvHD (SR-aGvHD) Product: CYP-001 (Cymerus<sup>™</sup> MSCs for intravenous infusion)



Subjects received 1x10<sup>6</sup> cells/kg (max 1x10<sup>8</sup> cells) or 2x10<sup>6</sup> cells/kg (max 2x10<sup>8</sup> cells) by IV infusion on D0 and D7
 Eight subjects were enrolled in each cohort, but one subject in Cohort B withdrew prior to infusion of CYP-001
 Subject A3 showed a PR at Days 14 and 21 but died due to pneumonia on Day 28; \* Subject B5 withdrew from the trial on Day 22 to commence palliative care For further information: https://clinicaltrials.gov/study/NCT02923375

### CYP-001 vs other treatments in SR-aGvHD



#### **Overall Response**

 Between Day 28 and Day 56-60, the Overall Response Rate (ORR) for both RUX and BAT decreased markedly, while the ORR for CYP-001 marginally increased

#### **Overall Survival**

CYP also reported 60% survival at
24 months (not shown on graph, as
18 months was the latest timepoint reported in RUX/BAT trial)

#### <u>Safety</u>

No serious adverse events or safety concerns for CYP-001

**CYP** = CYP-001 in Phase 1 trial (NCT02923375). **Rux** = ruxolitinib in Phase 3 trial (NCT02913261) (ruxolitinib is now approved for SR-aGvHD). **BAT** = "best available therapy" control arm in ruxolitinib Phase 3 trial (NCT02913261)



Note: comparisons are for illustrative purposes only; data taken from different clinical trials with different sample sizes (BAT: n=155; Rux: n=154; CYP-001: n=15). D28/D56 time points used for response rate comparison as D28/D56 were the only response rate time points reported in the BAT/Rux clinical trial (NCT02913261; Zeiser et al. N Engl J Med 382:1800-1810 [2020]). 1. Overall Response at Day 56-60 refers to Day 56 response for BAT & Rux, and Day 60 response for CYP-001

# Scientific and regulatory recognition

#### **Scientific: Publications**

 Cynata was published in two editions of the highly prestigious *Nature Medicine* journal following its Phase I trial results



Cynata featured on front-page of Nature Medicine



#### LETTERS https://doi.org/10.1038/s41591-020-1050-x

Nature Medicine **26**, 1720–1725 (2020)

Production, safety and efficacy of iPSC-derived mesenchymal stromal cells in acute steroid-resistant graft versus host disease: a phase I, multicenter, open-label, dose-escalation study

Adrian J. C. Bloor 으<sup>12 프,</sup> Amit Patel 이, James E. Griffin<sup>3</sup>, Maria H. Gilleece <sup>4</sup>, Rohini Radia<sup>5</sup>, David T. Yeung<sup>or</sup>, Diana Driet<sup>a</sup>, Laurie S. Larson<sup>6</sup>, Gene I. Uenishi<sup>9</sup>, Derek Hei<sup>10</sup>, Kilian Kelly<sup>0</sup><sup>11</sup>, Igor Slukvin<sup>0°</sup> and John E. J. Rasko<sup>0 프라Ata</sup>

#### nature medicine

<u>Nature Medicine</u> **30**, 1556–1558 (2024)

https://doi.org/10.1038/s41591-024-02990-z

#### Two-year safety outcomes of iPS cell-derived mesenchymal stromal cells in acute steroid-resistant graft-versus-host disease

Kilian Kelly©<sup>1</sup>, Adrian J. C. Bloor©<sup>2</sup>, James E. Griffin<sup>3</sup>, Rohini Radia<sup>4</sup>, David T. Yeung<sup>5,6</sup> & John E. J. Rasko©<sup>78,9</sup>⊠

#### **Regulatory: Orphan Drug Designation**

 CYP-001 has been granted Orphan Drug Designation by the US FDA for the treatment of GvHD



#### **Benefits include:**

- Tax credits for qualified clinical trials
- Exemption from user fees
- Potential seven years of market
   exclusivity after approval



# aGvHD | Phase 2 clinical trial

Indication	High risk acute graft versus host disease (aGvHD) <sup>1</sup>
Product	CYP-001 (Cymerus™ iPSC-derived MSCs for intravenous infusion)
	Randomised, double-blind, placebo-controlled trial
Study Design	<ul> <li>~60 adults (steroids + CYP-001 vs steroids + placebo)</li> </ul>
	• Primary objective is to assess efficacy of CYP-001 based on Overall Response Rate at Day 28
Study Conduct	<ul> <li>Conducted under IND from US FDA</li> <li>Clinical sites in USA, Europe and Australia</li> <li>First patient enrolled in March 2024; enrolment ~20% complete<sup>2</sup></li> <li>Aiming to complete patient enrolment in 1H 2025</li> </ul>
Results	Results anticipated in 2H 2025 (primary evaluation)



Trial is recruiting patients with High Risk newly diagnosed aGvHD (risk assessed based on refined Minnesota criteria), which means patients are not yet eligible to receive ruxolitinib. This is earlier in treatment pathway than completed Phase 1 trial, which was conducted in patients with steroid-resistant aGvHD. For further information see: <a href="https://clinicaltrials.gov/study/NCT05643638">https://clinicaltrials.gov/study/NCT05643638</a>
 As of September 2024 Quarterly Activity Report, released to ASX on 25 October 2024

### CYP-006TK for Diabetic Foot Ulcers (DFU)



# **Diabetic foot ulcers (DFU)**

- Open sore or wound that develops in patients with diabetes
- Very difficult to heal, which can lead to serious complications such as serious infection
- 20% of patients who develop DFU will require an amputation<sup>1</sup>
- Multi-disciplinary team can be required to treat: GP, endocrinologist, podiatrist, wound care nurse, vascular surgeon and infectious disease specialist
- Cost to treat DFU in the US can exceed US\$60,000 per patient (depending on severity)<sup>2</sup>
- Annual costs to US public and private payers estimated to be US\$9 13 billion per year<sup>2</sup>







McDermott et al. Diabetes Care. 46:209–221 (2023).
 Raghav et al. Ther Adv Endocrinol Metab. 9(1) 29-31 (2018).
 Hicks et al. J Vasc Surg. 67:1455-62 (2018).

4. Hossain et al. Health Sci Rep. 7(3):e2004 (2024).

5. American Diabetes Association: https://diabetes.org/about-diabetes/statistics/about-diabetes

6. American Diabetes Association: https://diabetes.org/advocacy/amputation-prevention-alliance

# **MSCs in DFU**

#### MSCs have demonstrated strong success in pre-clinical DFU models



#### Key findings

- Primary outcome measured was extent of wound surface re-epithelialisation (healing) after 3 days
- Cynata's Cymerus<sup>™</sup> MSCs resulted in significantly greater re-epithelialisation (86%) compared to bone marrow MSCs (51%)
- Cynata's Cymerus<sup>™</sup> MSCs are the only MSCs capable of being produced consistently at scale



# Cynata's MSC product for DFU

- Cynata has developed a proprietary wound dressing using MSCs ("CYP-006TK")
- CYP-006TK utilises a proprietary surface-coating, optimised for the delivery of MSCs directly to the wound





# **DFU | Phase 1 clinical trial**

Indication	Non-healing diabetic foot ulcers (DFU)
Product	CYP-006TK (Novel silicone dressing seeded with Cymerus™ iPSC-derived MSCs)
Study Design	<ul> <li>Randomised controlled trial in ~30 adults</li> <li>Patients randomised to receive either standard of care or CYP-006TK for 4 weeks, followed by standard of care</li> <li>Primary objective is safety; efficacy measures include wound healing, pain and quality of life</li> </ul>
Study Conduct	<ul> <li>Clinical sites in Australia (Adelaide and Perth)</li> <li>Patient enrolment complete (April 2024)</li> <li>All patient visits complete (September 2024)</li> </ul>
Results	<ul> <li>Positive initial results (at 10 weeks) from first 16 patients showed median reduction in wound surface area was 87.6% in CYP-006TK group compared to 51.1% in controls (n=8 per group)</li> <li>Final results anticipated shortly (Q4 2024 or Q1 2025)</li> </ul>



# **DFU | timeline**

#### Product: CYP-006TK



- 16 patients reviewed after 10 weeks': ٠
  - 8 Standard of Care (SoC) ٠
  - 8 CYP-006TK ٠
- Median reduction in wound surface area was: •
  - 87.6% in the active CYP-006TK group ٠
  - compared to 51.1% in SoC group ٠





Example of ulcer healing in patient treated with CYP-006TK



# Outlook and commercial potential



### **Upcoming catalysts\***

Results of FOUR clinical trials expected between late 2024 and early 2026





\* Timing of events is approximate, based on the Company's information as at the date of this presentation, and subject to change. Timing refers to calendar years.

### Summary

Platform Technology



Multiple Indications Compelling Clinical Data



Proven Commercial Interest

Excellent Safety Profile



Manufacturing Challenges Overcome

Billion dollar markets



Numerous Near-Term Catalysts





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