# Investor Presentation



pharmaxis

developing breakthrough treatments for fibrosis and inflammation

Investor Presentation | 4 November 2021
Gary Phillips CEO

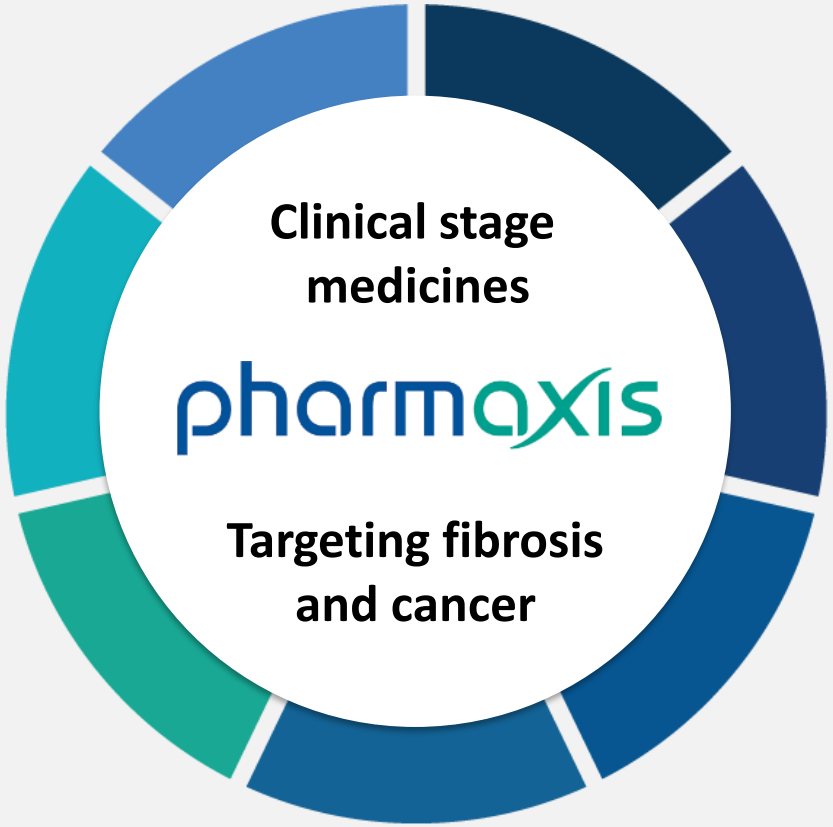
# Forward looking statement

This document contains forward-looking statements, including statements concerning Pharmaxis' future financial position, plans, and the potential of its products and product candidates, which are based on information and assumptions available to Pharmaxis as of the date of this document. Actual results, performance or achievements could be significantly different from those expressed in, or implied by, these forward-looking statements. All statements, other than statements of historical facts, are forward-looking statements.

These forward-looking statements are not guarantees or predictions of future results, levels of performance, and involve known and unknown risks, uncertainties and other factors, many of which are beyond our control, and which may cause actual results to differ materially from those expressed in the statements contained in this document. For example, despite our efforts there is no certainty that we will be successful in developing or partnering any of the products in our pipeline on commercially acceptable terms, in a timely fashion or at all. Except as required by law we undertake no obligation to update these forward-looking statements as a result of new information, future events or otherwise.

# Executive Summary

- Pharmaxis is a clinical stage drug development company targeting fibrosis and cancer indications with first in class or best in class small molecule drugs  in markets of high value
- Lead asset PXS-5505 is in phase 2a trial – a breakthrough clinical program with disease modifying potential in Myelofibrosis
- PXS-5505 has demonstrated further potential in oncology as an adjunct to standard of care in difficult to treat tumours
- Anti-skin scarring drug PXS-6302 with potential to improve function and appearance progressing to phase 1c trial in patients with established scars and burns
- Specific corporate strategy to deliver non-dilutive cash and cost savings from commercial stage mannitol business;
- Pharmaxis is in a strong position to fund its focused clinical program



# Shareholders & cash

| Financial Information | 1 Nov 21 |
|---|---|
| ASX Code | PXS |
| Share price 1 Nov 2021 | $0.125 |
| Liquidity (turnover last 12 months) | 391m shares |
| Market Cap | A$57m |
| Cash balance (30 Sept 2021) | A$16m |
| Enterprise value | A$41m |

Clinical development program supported by:

- Mannitol business* forecast to provide ongoing positive EBITDA growing to $10m in 5 - 6 years
- R&D tax credits
- Partnering deals with pipeline assets

| Institutional Ownership | 1 Nov 21 |
|---|---|
| BVF Partners LP | 19% |
| Karst Peak Capital Limited | 12% |
| D&A Income Limited | 7% |
| **Total Institutional Ownership** | **38%** |

Share price – last 12 months


*Mannitol segment EBITDA only

# Experienced Scientific Leadership Team

## Significant global experience in drug development, commercialisation and partnering

### In senior management

#### Wolfgang Jarolimek – Drug Discovery

- more than 20 years' experience in pharmaceutical drug discovery and published more than 30 peer reviewed articles
- previously Director of Assay Development and Compound Profiling at the GlaxoSmithKline Centre of Excellence in Drug Discovery in Verona, Italy
- spent 8 years as post-doc at the Max-Plank Institute in Munich, Germany; Baylor College of Medicine, Houston, Texas; Rammelkamp Centre, Cleveland Ohio; and University of Heidelberg, Germany

#### Dieter Hamprecht – Head of Chemistry

- more than 20 years experience with small molecule and peptide drug discovery, contributed to greater than 10 drug candidates brought to development and co-inventor of 50 patent families, co-author of 30+ scientific publications
- previously Managing Director – Boehringer Ingelheim's research group in Milan
- senior medicinal chemistry positions at GSK

#### Brett Charlton - Medical

- more than 25 years experience in clinical trial design and management
- author of more than 80 scientific papers
- founding Medical Director of the National Health Sciences Centre
- previously held various positions with the Australian National University, Stanford University, the Baxter Centre for Medical Research, Royal Melbourne Hospital, and the Walter and Eliza Hall Institute

### On the board

#### Gary Phillips – CEO and Managing Director

- more than 30 years of operational management experience in the pharmaceutical and healthcare industry in Europe, Asia and Australia
- joined Pharmaxis in 2003 and was appointed Chief Executive Officer in March 2013 at which time he was Chief Operating Officer
- previously held country and regional management roles at Novartis – Hungary, Asia Pacific and Australia

#### Kathleen Metters – Non Executive Director

- former Senior Vice President and Head of Worldwide Basic Research for Merck & Co. with oversight of all the company's global research projects.
- in a subsequent role at Merck &Co she led work on External Discovery and Preclinical Sciences
- former CEO of biopharmaceutical company Lycera Corp

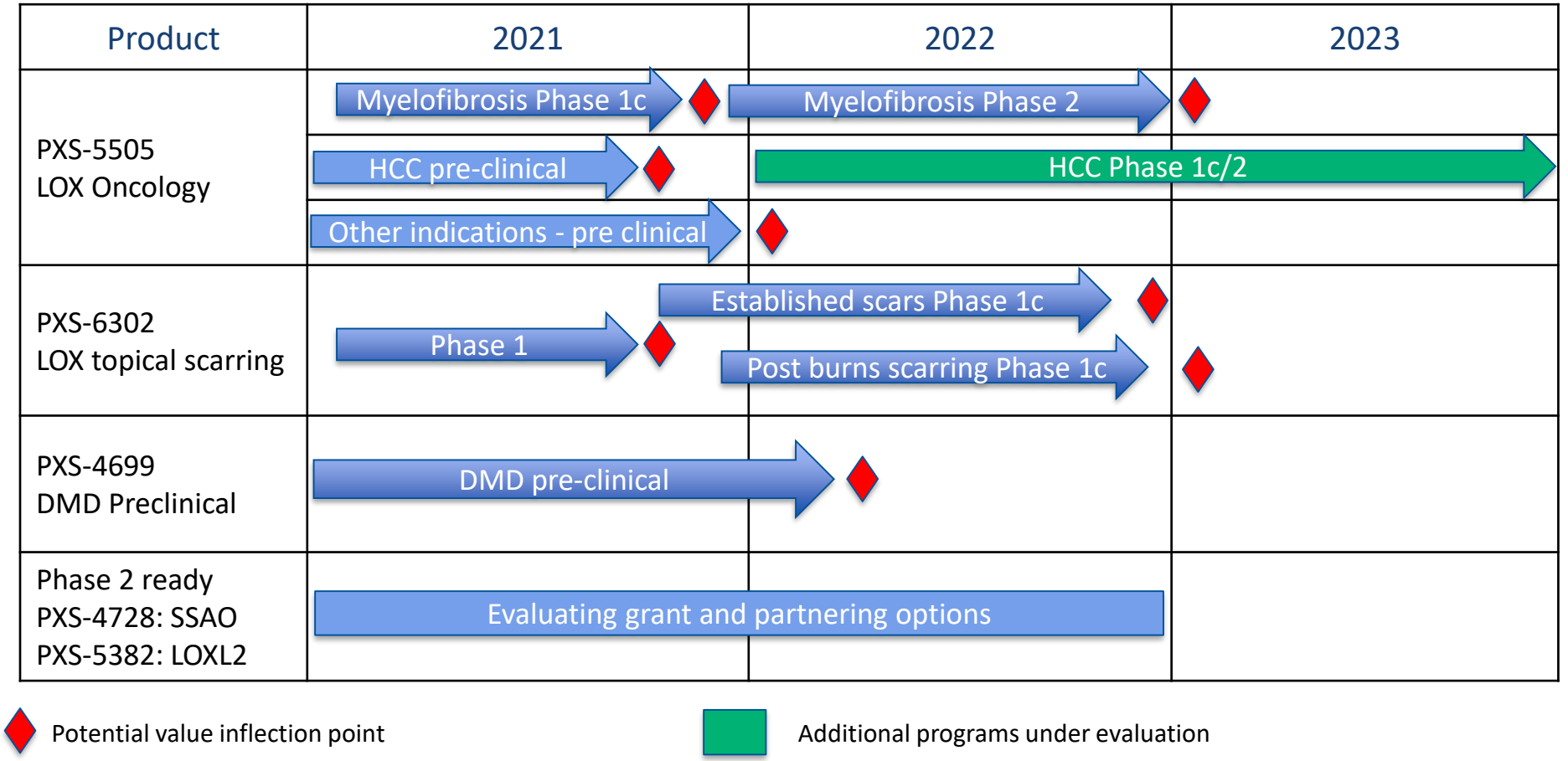
#### Neil Graham – Non Executive Director

- former VP of immunology and inflammation responsible for strategic program direction overseeing pipeline development and clinical programs at Regeneron (REGN:US)
- former SVP program and portfolio management at Vertex Pharmaceuticals
- former Chief Medical Officer at Trimeris Inc and Tibotec Pharmaceuticals

# Multiple potential value inflection points over next two years

## Pipeline creates multiple opportunities in high value markets

### Target timelines








DMD: Duchenne Muscular Dystrophy
TACT: TREAT-NMD Advisory Committee for Therapeutics
MDS: Myelodysplastic Syndrome
LOX: Lysyl Oxidases

# Myelofibrosis background

A rare type of bone marrow cancer that disrupts your body's normal production of blood cells

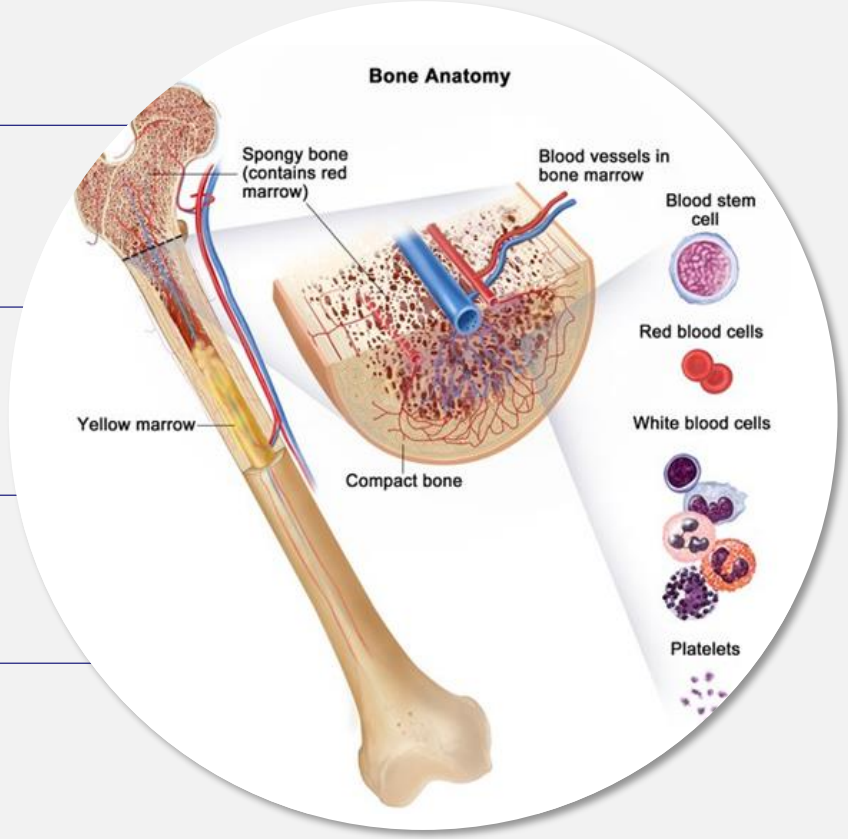
## KEY FACTS

Affects 15 in 1m people worldwide

5 Years Median survival

Age of onset 50 – 80

11% transformation to leukemia




**Primary Myelofibrosis** is caused by a build up of scar tissue (fibrosis) in bone marrow reducing the production of blood cells:

- Driven by clonal mutations of a hematopoietic stem cell (JAK, MPL, CALR genes)
- Reduced red blood cells can cause extreme tiredness (fatigue) or shortness of breath
- Reduced white blood cells can lead to an increased number of infections
- Reduced platelets can promote bleeding and/or bruising
- Spleen increases blood cell production and becomes enlarged
- Other common symptoms include fever, night sweats, and bone pain

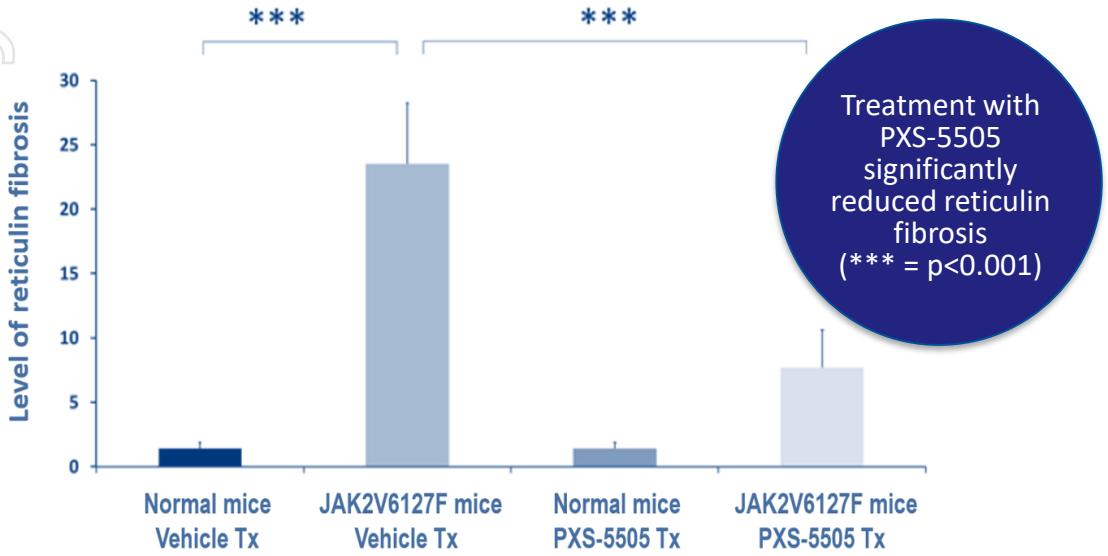
**Standard of Care; JAK inhibition**

- Current standard of care; revenue ~US$1b per annum
- Symptomatic relief plus some limited survival improvement. 75% discontinuation at 5 years
- Median overall survival is 14 – 16 months after discontinuation

# PXS-5505; An effective and safe inhibitor of LOX in myelofibrosis patients

Pre clinical and clinical studies strongly support entry into long term phase 2 patient studies

## PXS-5505 attenuates hallmarks of primary myelofibrosis in mice



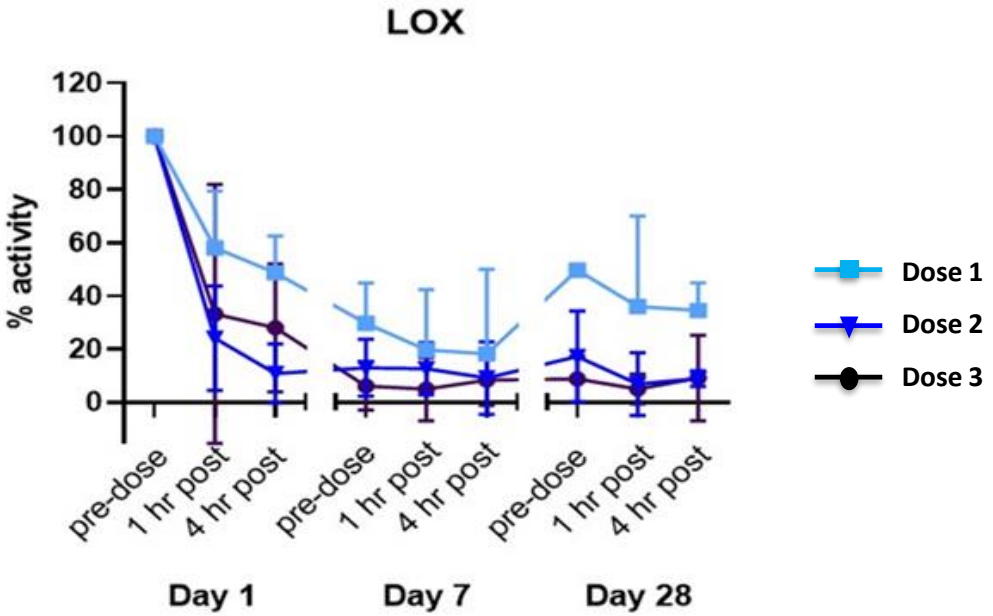

Treatment with PXS-5505 significantly reduced reticulin fibrosis (*** = p<0.001)

*"None of the drugs approved to date consistently or meaningfully alter the fibrosis that defines this disease. PXS-5505 has a novel mechanism of action by fully inhibiting all LOX enzymes.*

*Preliminary data thus far, demonstrate that PXS-5505 leads to a dramatic, >90% inhibition of LOX and LOXL2 at one week and 28 days. This confirms what's been shown in healthy controls as well as mouse models, that this drug can inhibit the LOX enzymes in patients. Inhibiting these enzymes is a novel approach to the treatment of myelofibrosis by preventing the deposition of fibrosis and ultimately reversing the fibrosis that characterizes this disease"*

*Dr Gabriela Hobbs*[1]

## PXS-5505 – Phase 1c dose escalation in MF patients




- Open label dose expansion in JAK-inhibitor unsuitable[2] primary MF or post-ET/PV MF patients
- 3 patients on each dose for 28 days
- Good safety profile with no adverse events at highest dose
- >90% inhibition of LOX and LOXL2 at trough on highest dose at day 7 and 28



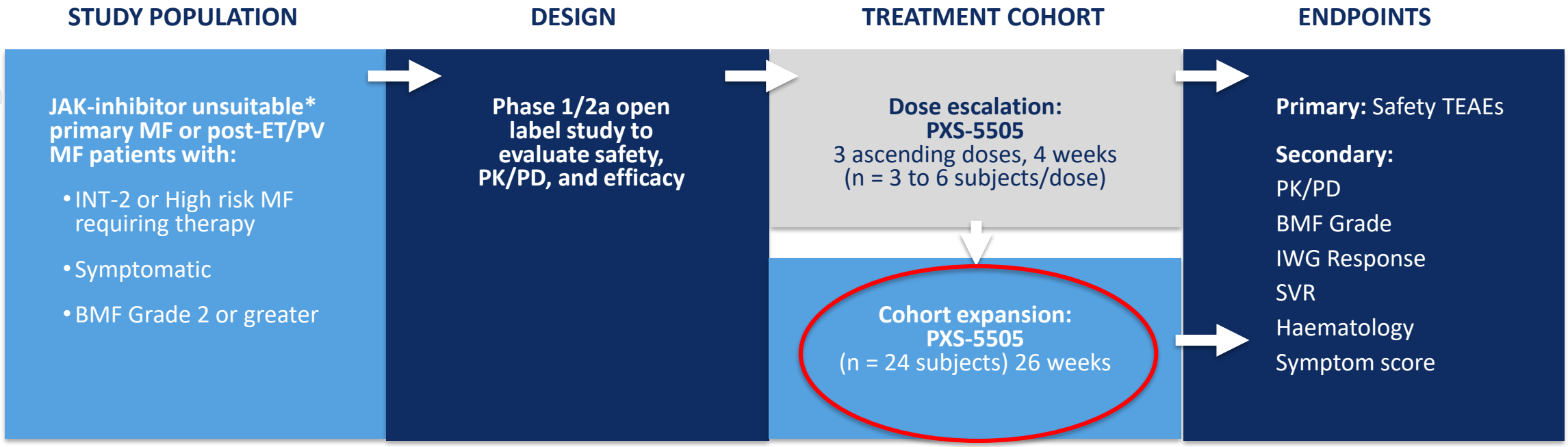
Ref Graph1: Leiva et al. Intl J Hemat 2019. https://doi.org/10.1007/s12185-019-02751-6

[1] Assistant Professor, Medicine, Harvard Medical School & Clinical Director, Leukaemia, Massachusetts General Hospital

[2] Unsuitable = ineligible for JAKi treatment, intolerant of JAKi treatment, relapsed during JAKi treatment, or refractory to JAKi treatment. JAKi – Janus Kinase inhibitor, MF myelofibrosis, ET Essential Thrombocythaemia, PV polycythaemia vera

# PXS-5505 Phase 1/2a Trial in myelofibrosis

6 month monotherapy study with meaningful safety and efficacy endpoints (phase 1c complete)




FDA granted orphan drug designation July 20 and IND approved August 2020

Multiple sites across 4 countries to enhance trial recruitment (USA, South Korea, Taiwan, Australia)

Study budget (~US$6m)

Study recruitment commenced Q1 2021, study targeted to conclude H2 2022

*Unsuitable = ineligible for JAKi treatment, intolerant of JAKi treatment, relapsed during JAKi treatment, or refractory to JAKi treatment. JAKi – Janus Kinase inhibitor, MF myelofibrosis, ET Essential Thrombocythaemia, PV polycythaemia vera, INT intermediate, BMF bone marrow fibrosis, RP2D recommended phase 2 dose, TEAE treatment emergent adverse event, PK pharmacokinetics, PD pharmacodynamics, SVR spleen volume response, IWG International Working Group Myeloproliferative Neoplasms

# Myelofibrosis – examples of other programs

PXS-5505 unique mechanism of action designed for disease modification and good tolerability

| Company | Market cap[1] | Bourse | Asset | Description | Clinical phase |
|---|---|---|---|---|---|
| KEROS THERAPEUTICS | $0.9bn | Nasdaq | KER-050 | TGF-β ligand trap | Phase 2 |
| Constellation PHARMACEUTICALS | $1.6bn | Nasdaq | CPI-0610 | BET inhibitor | Phase 3 |
| KARTOS THERAPEUTICS | $0.7bn[2] | n.a. – private | KRT-232 | MDM2 antagonist | Phase 3 |
| geron | $0.4bn | Nasdaq | Imetelstat | Telomerase inhibitor | Phase 3 |
| pharmaxis | $43m (A$57m) | ASX | PXS-5505 | LOX inhibitor | Phase 1c/2 commenced |

PXS-5505 unique mechanism of action expected to deliver additional efficacy on top of existing standard of care and/or known pipeline drugs without adding to tolerability issues





Notes: (1) Approximate market cap as at 06 September 2021
(2) Last round valuation

# PXS-5505: Significant opportunity in other cancers

Global academic and clinical interest in LOX inhibition drives development plan

## Pharmaxis Research Collaborations

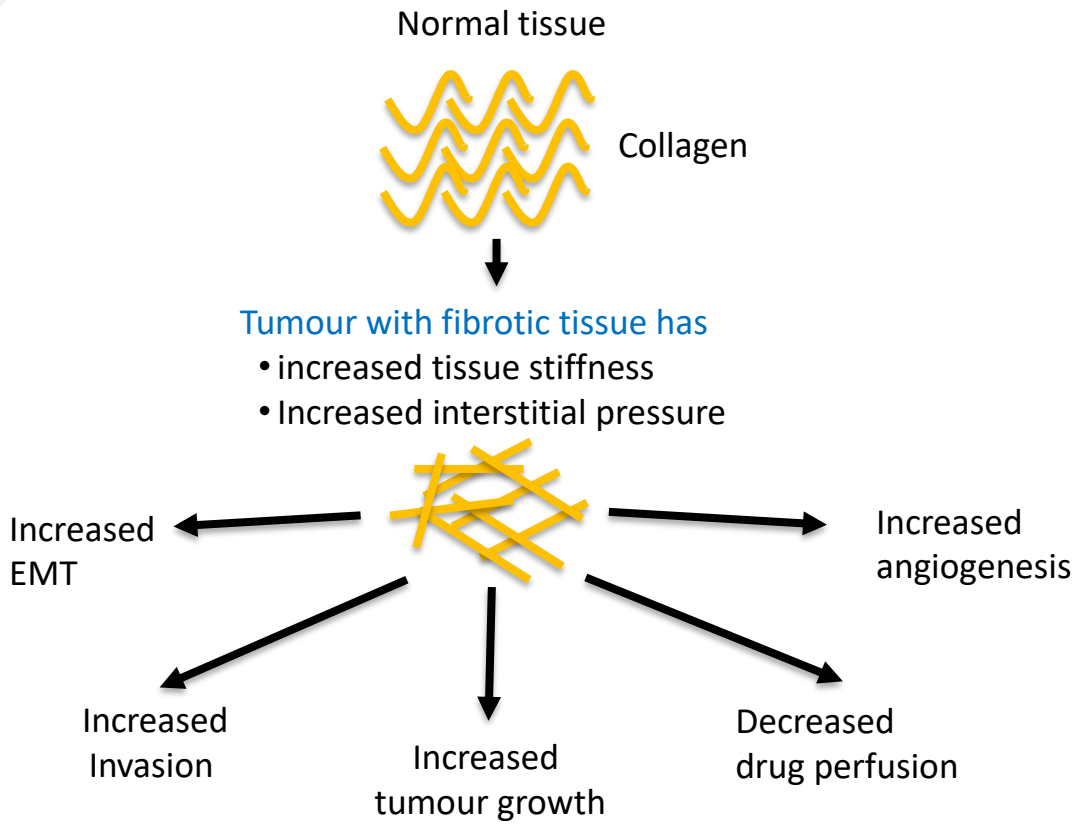
**Myelodysplastic syndrome**
Germany

**Liver Cancer**
Rochester (NY)

**Pancreatic Cancer**
Sydney, Rochester (NY)

**Melanoma and glioblastoma**
Houston

**Head and Neck Cancer**
Boston, (MA)




**Multiple expected benefits from inhibition of LOX enzymes**





EMT: epithelial to mesenchymal transition

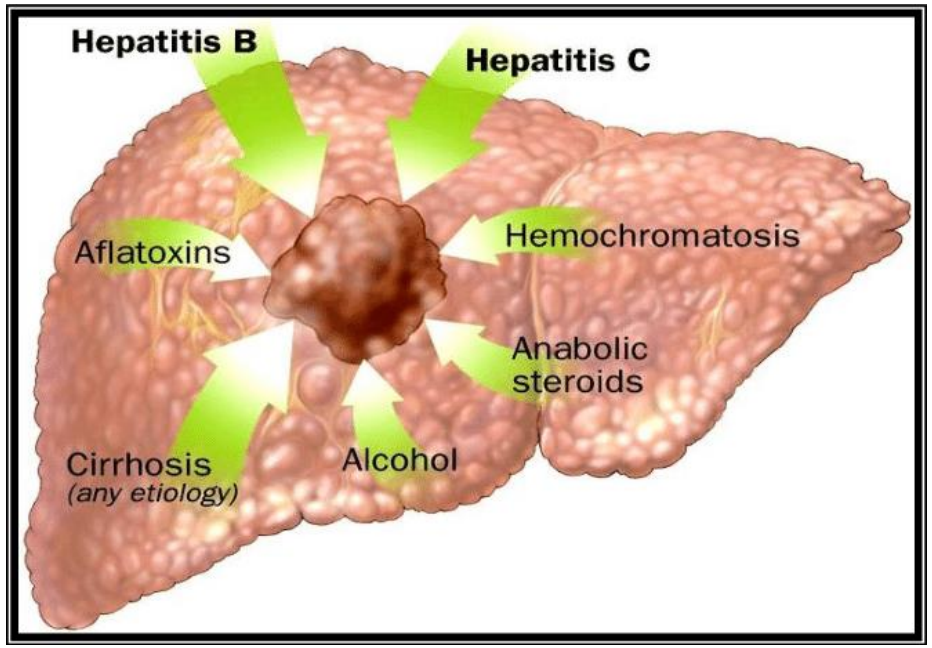
# Hepatocellular Carcinoma (HCC)

4th leading cause of cancer-related mortality worldwide with a 19.6% 5-year relative survival

- Primary liver malignancies have doubled in incidence over the last two decades.
- 4th leading cause of cancer-related mortality worldwide with a 19.6% 5-year relative survival
- HCC is a stromal (fibrotic) tumour

  Accumulation of collagen cross-links increases stromal stiffening and interstitial fluid pressure reducing delivery of chemotherapy and immunotherapy
- Current standard of care

  20-30% are resectable at presentation with many patients relying on systemic therapy:
  - Tyrosine kinase inhibitors
  - PD-L1 inhibitors + anti-VEGF




- Pre-clinical data (Rochester Uni; Aug 2021)
  - Tumour tissue specimens show LOX enzymes are significantly elevated in human liver cancer and correlate with poor prognosis.
  - PXS-5505 with or without chemotherapy treatment in a pre-clinical model significantly **improves survival, delays tumor growth, and reduces intratumoral pressure.**
- Proposed clinical strategy
  - Enhance the intratumoral response to standard of care through the addition of LOX inhibition in human HCC
  - 6 month study combination PXS-5505 on top of standard of care in newly diagnosed unresectable or metastatic hepatocellular carcinoma

# Hypertrophic and keloid scarring

Cutaneous scarring following skin trauma or a wound is a major cause of morbidity and disfigurement

## KEY FACTS

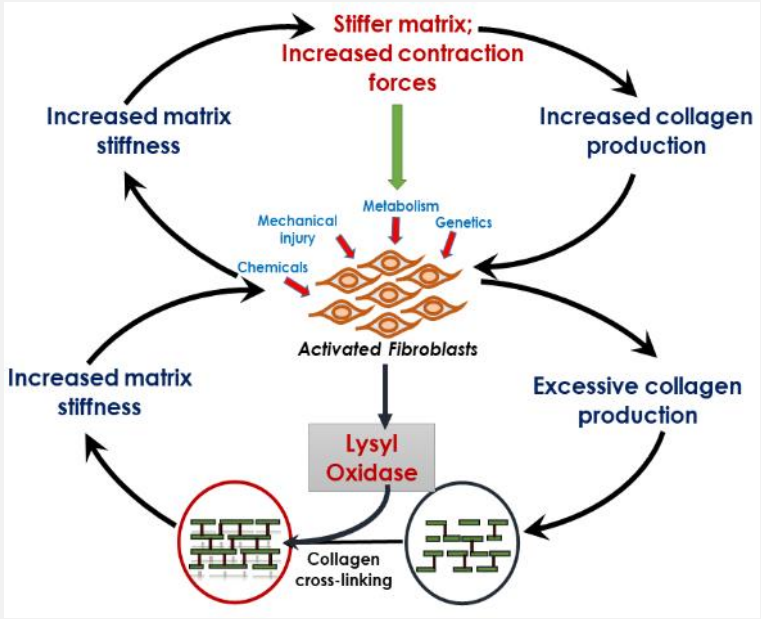
100m patients develop scars in the developed world alone each year as a result of elective operations and operations after trauma

Hypertrophic scars and keloids are fibroproliferative disorders that may arise after any deep cutaneous injury caused by trauma, burns, surgery, etc.

Hypertrophic scars and keloids are cosmetically and functionally problematic significantly affecting patients' quality of life

Total scar treatment market in 2019 exceeded US$19b. Keloid and hypertrophic scar segment ~US$3.5b

Collagen turnover in keloid




The increase in extracellular matrix is a key factor and this depends on collagen and elastin cross-linking to make them less degradable.

- Mechanisms underlying scar formation are not well established; prophylactic and treatment strategies remain unsatisfactory
- Current standard of care includes:
  - Corticosteroids
  - Surgical revision
  - Cryotherapy
  - Laser therapy
  - 5-fluorouracil

- Pre clinical evidence
  - Treatment with PXS-6302 monotherapy demonstrates cosmetic and functional improvements to scarring in pre clinical models (data on file)
- Clinical evidence
  - 1 month phase 1a in healthy volunteers demonstrates good tolerability and full inhibition of LOX in skin.
- Next Steps
  - 3 month study versus placebo in patients with established scars to commence Q4 2021
  - Study to investigate scarring subsequent to burn injury to follow in 2022

# Anticipated news flow: 2021 – 2022

Multiple anticipated value inflection points over next two years

## Achieved H1 2021

- Feb 22: Breakthrough drug PXS-5505 phase 1c/2a myelofibrosis study commenced recruitment
- Mar 19: Chiesi pays US$3m milestone on Pharmaxis shipment of US launch
- Mar 31: LOX topical drug PXS-6302 commenced independent investigator studies - safety
- April 14: Sale of Russian Bronchitol distribution rights
- May 3: Grant from Charlie Teo Foundation to test PXS-5505 in glioblastoma

## Achieved H2 2021

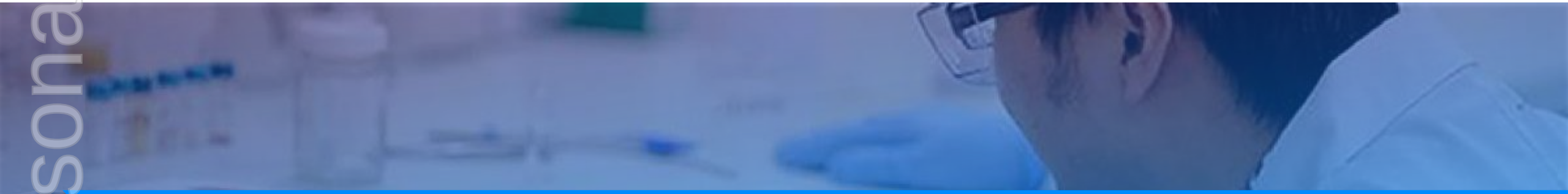
- July 1: Sale of Australian Aridol and Bronchitol distribution rights
- Aug 5: University of Rochester paper – PXS-5505 significantly improves survival, delays tumor growth in pre-clinical cancer model
- Aug 17: Grant of option to Aptar for high payload inhaler – US$275k fee, US$2.5m exercise fee by 8/22
- Aug 31: Treatment to prevent wound and burns scars clears phase 1 trial – to progress into independent investigator phase 1c patient studies - burns and established scars
- PXS-5505 phase 1c shows good tolerability profile and strong inhibition of LOX and LOXL2

## H2 2021

- PXS-5505 phase 2a myelofibrosis study commences dosing
- LOX topical drug PXS-6302 commences independent investigator patient studies - burns and established scars
- Mannitol business simplification – realising annual cost savings
- PXS-5505 publications by KOL's in other cancers

## CY 2022

- PXS-5505 phase 2a myelofibrosis study safety and efficacy data
- LOX topical drug phase 1c studies burns and established scars safety and efficacy data





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# Additional Information

# Mannitol respiratory business (Bronchitol® and Aridol®)

Transformational impact of FDA Bronchitol approval (Oct 2020) – business segment cash flow positive from FY 2021 onwards

**Sales**

- Bronchitol > 75% of sales
- Strong short term growth from Russia
- Sales growth globally as patients access hospitals again post COVID-19 restrictions
- Strong longer term growth contribution from US

**Expenses**

- Relatively fixed production cost base
- Potential for simplified business model to reduce costs

**Segment EBITDA**

- Forecast ongoing positive EBITDA
- US volumes contribute to mannitol segment generating profit


**Bronchitol in US**

- US CF market >65% of global market in value
  - US market doubles global cystic fibrosis patient opportunity with attractive pricing
- Chiesi approval /launch milestone payments US$10m received FY 2021
- US sales commenced in Q2 CY 2021 – delay in patient initiation due to COVID
- High teens % of Chiesi sales + supply contract - ~20% of Chiesi US Bronchitol net sales flow directly to the Pharmaxis bottom line
- Three sales milestones totaling US$15m payable on achieving annual sales thresholds

# Board

## Significant international pharmaceutical experience

### Malcolm McComas – Chair

- former investment banker and commercial lawyer
- former MD Citi Group
- has worked with many high growth companies across various industry sectors and has experience in equity and debt finance, acquisitions and divestments and privatisations.
- joined Pharmaxis Board in 2003
- chair since 2012

### Will Delaat – Non-Executive Director

- more than 35 years' experience in the global pharmaceutical industry
- former CEO of Merck Australia
- former chair of Medicines Australia and Pharmaceuticals Industry Council
- joined Pharmaxis Board in 2008

### Dr Kathleen Metters – Non-Executive Director

- former Senior Vice President and Head of Worldwide Basic Research for Merck & Co. with oversight of all the company's global research projects.
- in a subsequent role at Merck &Co she led work on External Discovery and Preclinical Sciences
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### Dr Neil Graham – Non-Executive Director

- former VP of immunology and inflammation responsible for strategic program direction overseeing pipeline development and clinical programs at Regeneron (REGN:US)
- former SVP program and portfolio management at Vertex Pharmaceuticals
- former Chief Medical Officer at Trimeris Inc and Tibotec Pharmaceuticals

# Financials

## Income statement highlights

| Periods ended (A$'000) | Sept 2021 Qtr | Sept 2020 Qtr | June 2021 FY | June 2020 FY |
|---|---|---|---|---|
| **Segment Financials** | | | | |
| **New drug development** | | | | |
| Oral LOX (external costs) | (1,467) | (777) | (2,521) | (3,124) |
| Other program external costs (net of grants) | (303) | (297) | (1,850) | (3,315) |
| Employee costs | (715) | (924) | (3,270) | (3,373) |
| Overhead | (102) | (93) | (395) | (460) |
| R&D tax credit | - | 148 | 148 | 5,159 |
| EBITDA | (2,587) | (1,943) | (7,888) | (5,113) |
| **Mannitol respiratory business** | | | | |
| Sales | 3,272 | 661 | 6,680 | 7,027 |
| Other revenue and income | 2,342 | 142 | 15,985 | 20 |
| | 5,614 | 803 | 22,665 | 7,047 |
| Expenses – employee costs | (1,197) | (1,385) | (5,558) | (5,855) |
| Expenses – manufacturing purchases | (1,205) | (71) | (1,168) | (1,456) |
| Expenses – other | (1,103) | (1,212) | (4,483) | (3,713) |
| EBITDA | 2,109 | (1,865) | 11,456 | (3,977) |
| **Corporate – EBITDA** | (755) | (860) | (3,795) | (2,990) |
| **Total Adjusted EBITDA** | **(1,233)** | **(4,668)** | **($227)** | **($12,080)** |
| | | | | |
| **Net profit (loss)** | **(3,179)** | **(4,981)** | **($3,289)** | **($13,943)** |

# Financials

## Cash

| Periods ended (A$'000) | Sept 2021 Qtr | Sept 2020 Qtr | June 2021 FY | June 2020 FY |
|---|---|---|---|---|
| **Cash** | | | | |
| Cash period end | 16,131 | 9,656 | 18,712 | 14,764 |
| **Cash Flow Statement Highlights** | | | | |
| Operations | | | | |
| Receipts from customers | 1,156 | 1,934 | 8,607 | 7,775 |
| R&D tax incentive | - | - | 5,307 | 6,271 |
| Chiesi milestone | - | - | 13,845 | - |
| Sale of distribution rights | 2,342 | - | 1,357 | - |
| Payments to suppliers, employees etc (net) | (5,443) | (6,300) | (24,687) | (27,330) |
| Total operations | (1,945) | (4,366) | 3,072 | (13,284) |
| Investing (capex & patents) | (40) | (100) | (644) | (574) |
| Finance lease payments[1] | (593) | (574) | (2,305) | (2,232) |
| Financing agreement payments[2] | (3) | (68) | (240) | (270) |
| Share issue - net | - | - | 4,065 | - |
| Net increase (decrease) in cash | **($2,581)** | **($5,108)** | **$3,849** | **($16,360)** |

1. Lease over 20 Rodborough Rd (to May 2024) – total liability at 30 June 2021: $6.3 million
2. NovaQuest financing – not repayable other than as % of US & EU Bronchitol revenue – up to 7 years