



Investor Presentation (August 2017)

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Corporate Structure



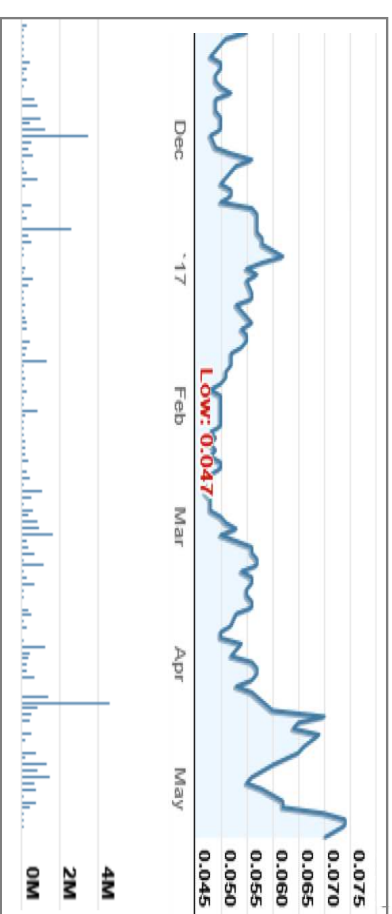
Corporate Overview

- **PharmAust: Clinical-stage oncology** company
- Lead product is **Monepantel** (MPL) – a repurposed drug already approved for Veterinary use
- PharmAust **patented MPL** as a **novel anticancer drug**
- **Unique clinical strategy** targeting **MPL** for both **human and vet** applications
- **Option Agreement** with **Novartis Animal Health/Elanco** for veterinary cancer applications
- **Epichem**: profitable business, forecast revenues of \$4m in 2018 FY

Corporate Snapshot

ASX Code:	PAA
Market Cap	\$10M
Cash ¹	\$2.59M
Debt ²	\$0.5
Epichem Revenue	\$3.05M (FY17)

Total Shares on Issue	146,694,903
Options (Unlisted)	42,547,078
Top 20 Own	35%
Board/Exec Own	13%



1. As of 30 June, 2017

2. EFIC loan to Epichem: Mar 31, 2017

Experienced Board & Management Team

Dr. Roger Aston, Executive Chairman

- >20 years experience in the pharmaceutical and healthcare industries.
- Director or chairman on a number of boards carrying out late stage drug development
- Largest Shareholder

Dr. Wayne Best, Director

- 30 years experience in synthetic and medicinal chemistry in academia and industry.
- MD of PharmAust's subsidiary Epichem.

Robert Bishop, Executive Director

- >30 years experience in corporate finance and equity capital markets
- Lawyer and an investment banker
- Second largest shareholder

Sam Wright, Director & Company Secretary

- 20 years experience in the biotech and healthcare.
- Experienced in listed companies, corporate governance and corporate finance.

Dr Richard Hopkins, CEO

- >15 yrs biotech experience in Drug Discovery and Development
- Executive experience in ASX companies

Dr Richard Mollard, CSO

- >15 yrs biotech experience in senior scientific roles
- Broad range of biotech expertise in executive & consulting roles inc. regulation and development

Repurposing MPL for accelerated path to commercial returns

Drug Repurposing = Capital efficient path to market

Typical Drug Development Phases



10+ yrs. ~\$1-2 billion



Drug repurposing/repositioning

6 yrs. ~\$300 million



Drug repurposing/repositioning

3-5 yrs. ~\$2-5 million

Value can be unlocked early in development cycle

Discovery

Preclinical

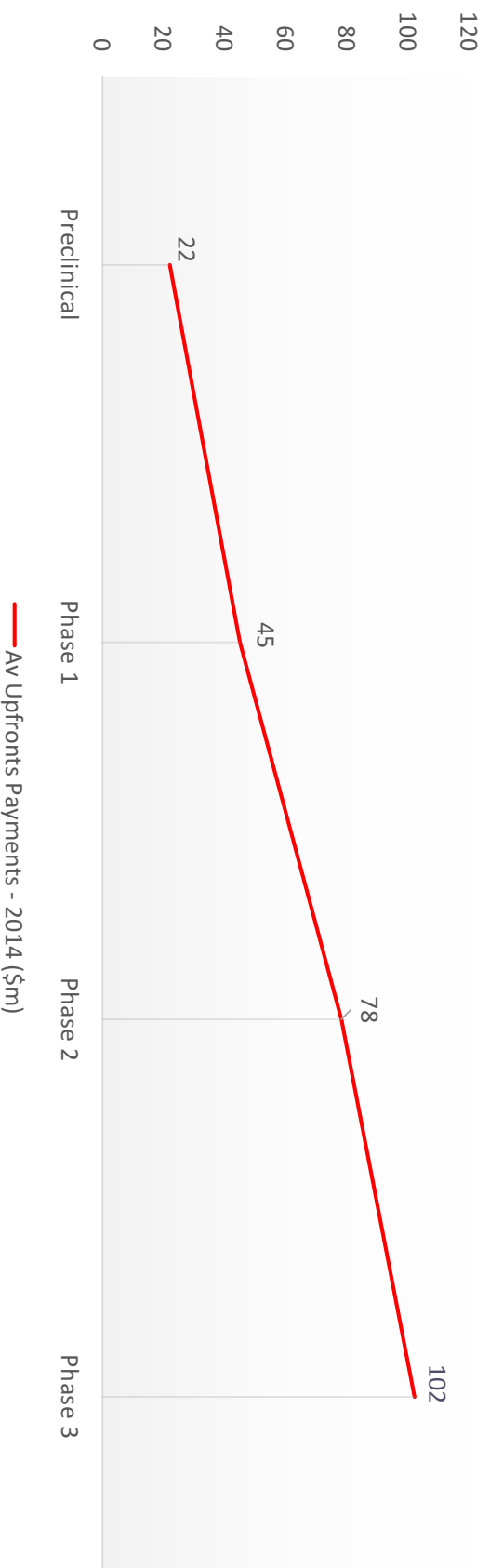
Phase 1

Phase 2

Phase 3

Market

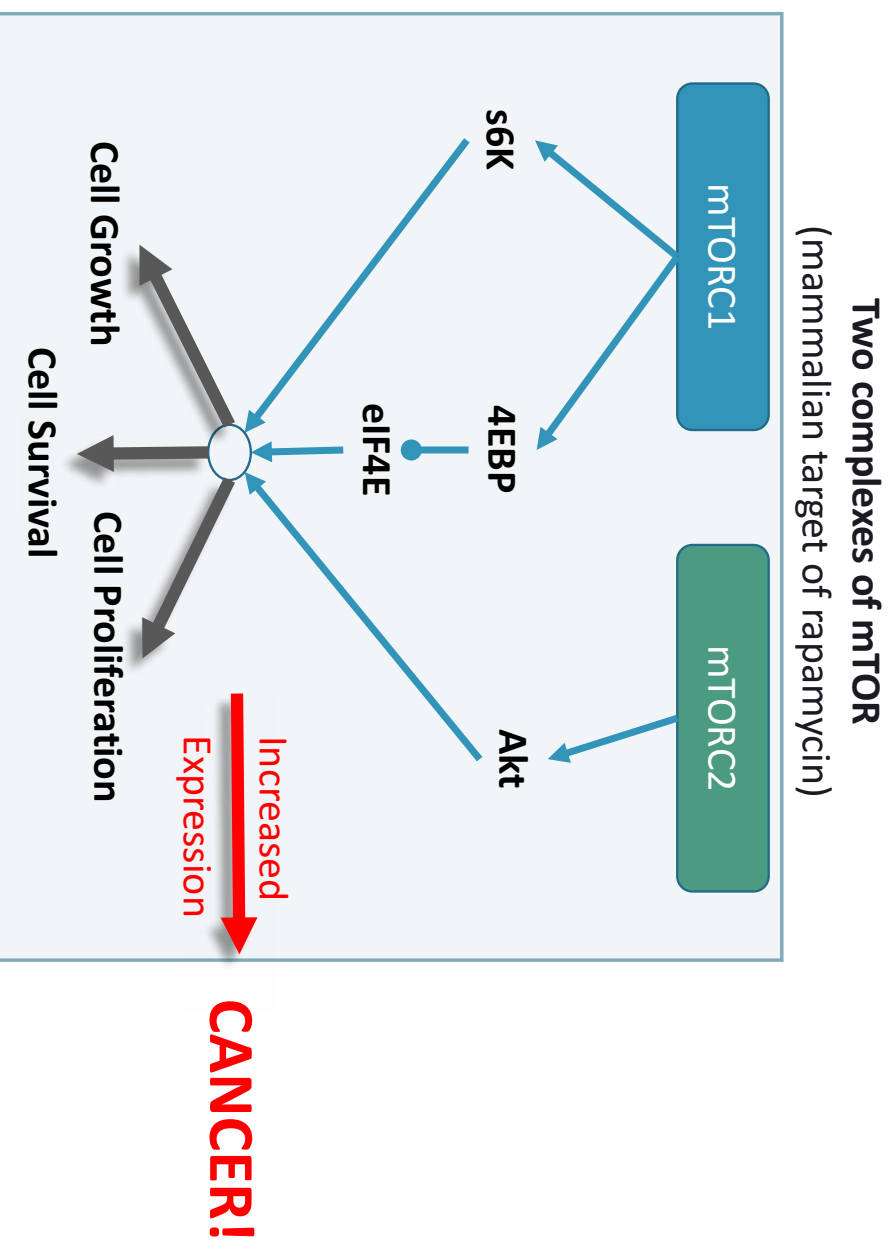
Average upfront human oncology licensing deal values at different development stages (US\$millions)



(2016). The Deloitte Recap Oncology Deal Making and Development Trends Report 2008-2012 (pp. 1-51).

Monepantel Oncology Programme: Progressing towards key clinical and commercial catalysts

MPL targets the mTOR pathway: common to many cancers



Saxton, R. A., & Sabatini, D. M. (2017). mTOR Signaling in Growth, Metabolism, and Disease. *Cell*, 168(6), 960–976.

>\$2 Billion market for approved mTOR Drugs

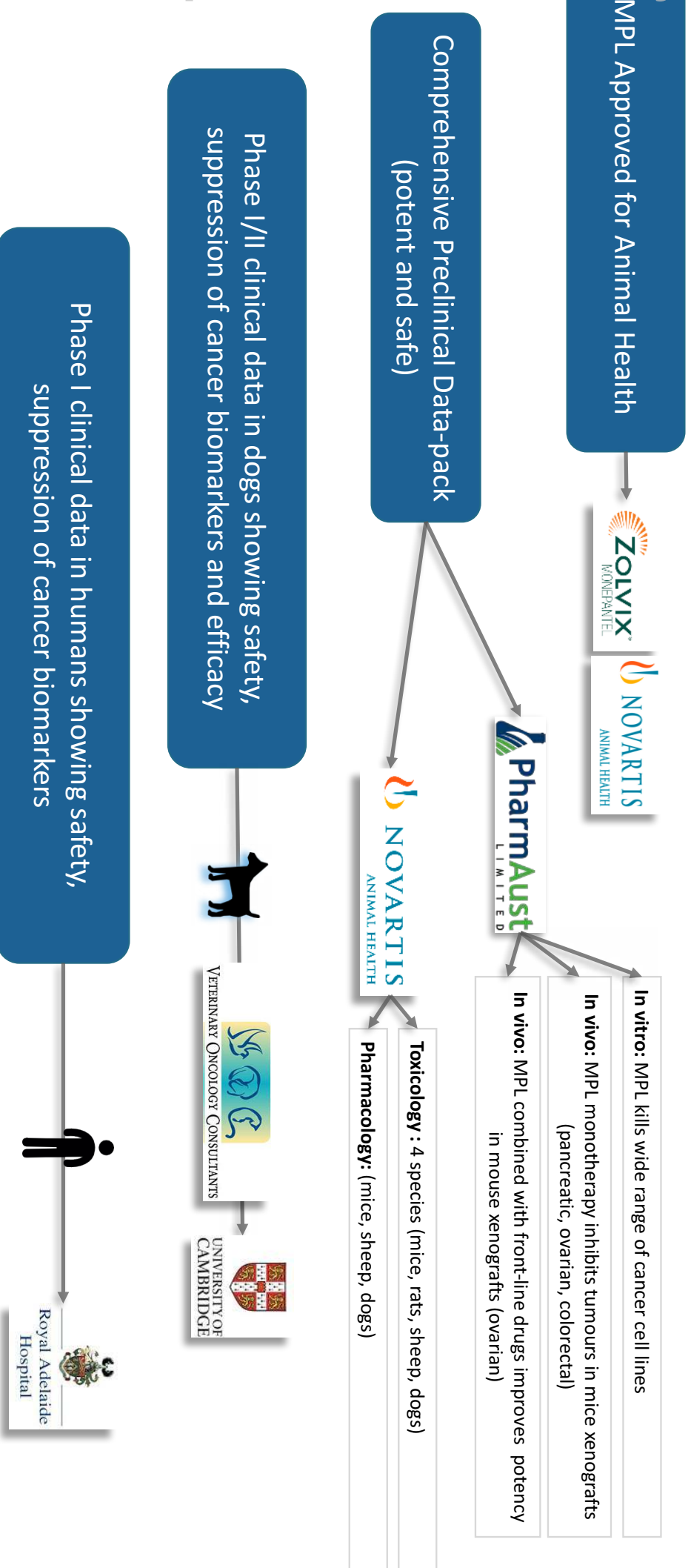
Drug	Approved Indications	Company	2016 Sales (US\$m) ¹
Sirolimus	Transplantation	Pfizer	170
Rapalogues (Affintor/Torisel)	Transplantation Renal Cell Carcinoma Breast Cancer Pancreatic Neuroendocrine Tumours Mantle Cell Lymphoma	Novartis/Pfizer	>2,000

1. Global Data

PharmAust's strong MPL patent position

- > 47 patents and patent applications
- 5 patent families
- **Granted patents** in US, Aus, China, NZ and Europe
- Broad 'method of use' for MPL across **cancer** and **non-cancer** applications
- Joint portfolio of **MPL analogues** (composition of matter) with Nihon Nohyaku

Why MPL for Cancer



Recent clinical outcomes promote commercial opportunities

Phase II pilot lymphoma trial in dogs
MPL used as front-line therapy



Preliminary Results: $\frac{3}{4}$ (75%) treated dogs
showed stable disease and tumour reduction

Pharma Option agreement



- 1st report of MPL clinical tumour inhibition
- 1st report mTOR drug inhibiting Lymphoma in dogs

MPL Achieved Key Preclinical and Phase I Clinical Endpoints

- For personal use only
- 1. Safety:** Excellent safety profile in dogs & man as predicted by pre-clinical models
 - 2. Efficacy:** Observed reduction of key cancer biomarkers (p70s6K and p4E-BP-1) and reduction in tumours in dogs (3/4) diagnosed with lymphoma
 - 3. Active dose:** Identified active dose of MPL in man using biomarkers
 - 4. Synergy:** Demonstrated synergy in preclinical mouse model with current standard of care cytotoxic drugs

Strategy to develop MPL as a Cancer Therapeutic for:

- **Veterinary Health**
- **Humans**

Rationale for dual clinical development strategy

70% oncology drugs fail in clinical trial due to:

- Poor Efficacy
- Poor Safety

Mouse Cancer Model



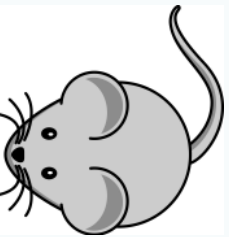
Traditional Development Path



Human Clinical Trial

Mouse cancer models often poor predictors of drug activity in humans

Mouse Cancer Model



Dog Cancer Model



Human Clinical Trial



Dog cancer very similar to human cancer
Cancer 5X more common in dogs
Dog model more predictive than mouse

Rationale for dual clinical development strategy

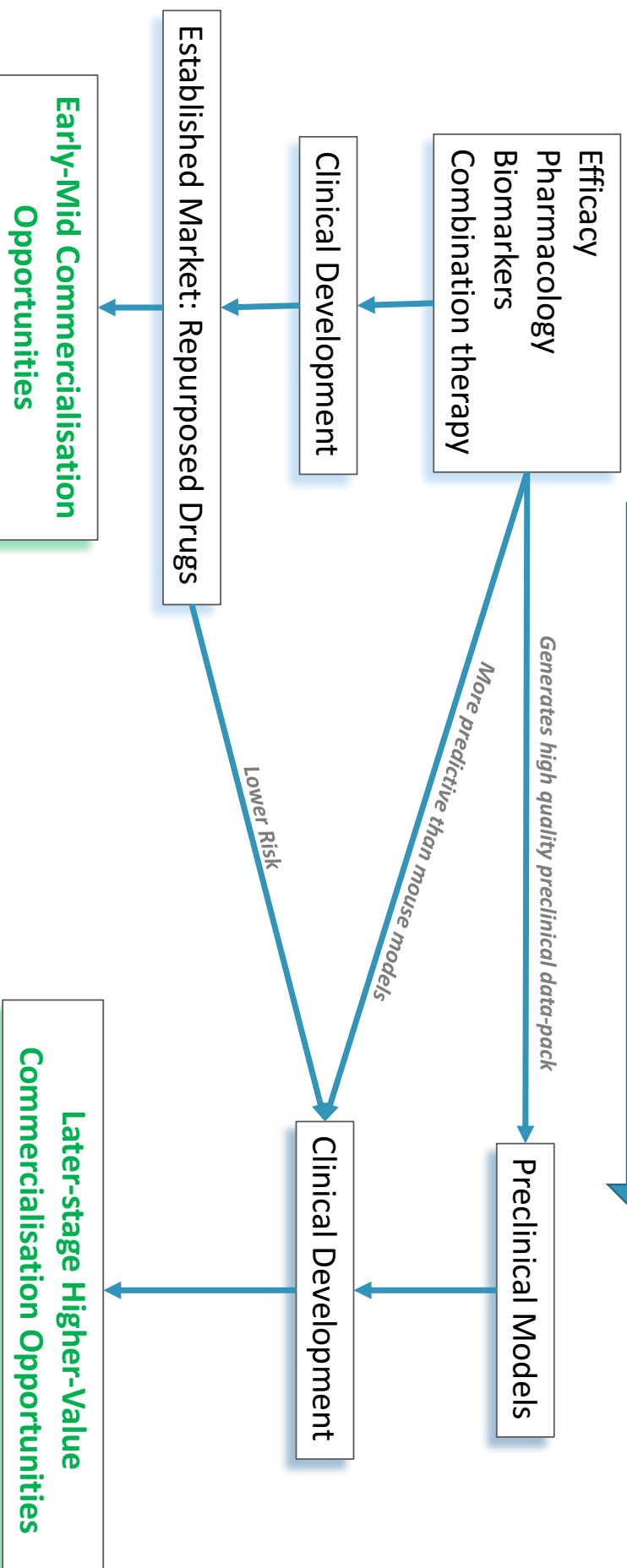
Vet Oncology Development



Human Oncology Development

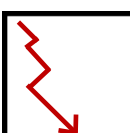
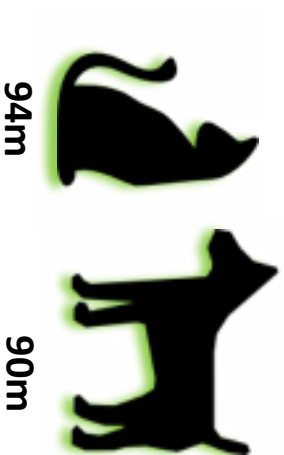


Canine Outcomes Informs Human Clinical Development



Trends in Companion Animal Health Market (US:2016)

US Dog/Cat Populations (2016)¹



Total Pet Expenditure: \$70b¹



Vet Care Expenditure \$17b¹



**Pet drug market \$10.2b by 2018²
(8% CAGR)**



**Willingness to pay more for treatment³
(\$2K-\$5K/treatment)**

1. http://www.americanpetproducts.org/press_industrytrends.asp

2. Competition in the Pet Medications Industry (2015)

3. AP-Petside.com Poll, conducted by GfK Roper Public Affairs and Media: April 7-12, 2010

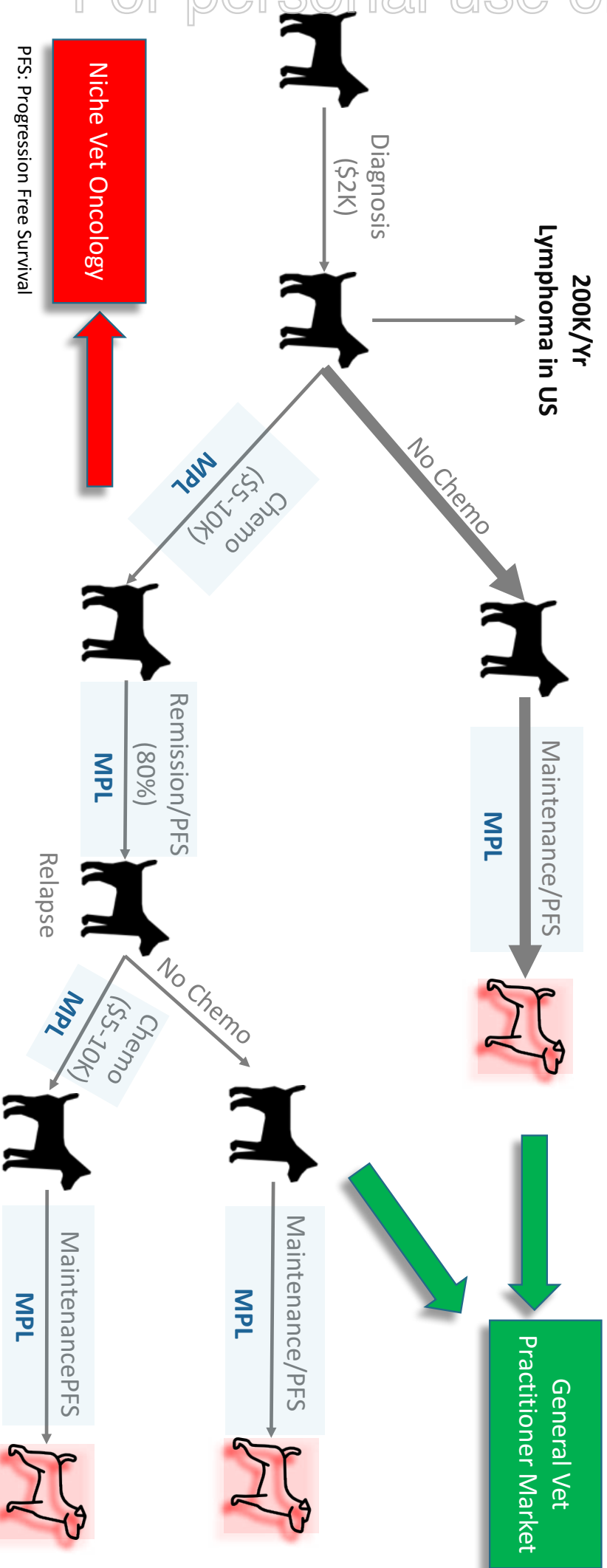
Pets and Cancer

- 1 in 4 dogs die of cancer



- Pets are living longer (50% dogs >10yrs die of cancer)
- 6 million dogs diagnosed with cancer in US/yr
- Significant **unmet need** for **new oncology drugs** (\$500m-\$1b market)
- Vet **therapeutic market** dominated by **repurposed drugs** already approved for use in humans and/or animals (**eg. MPL**)

Multiple options for MPL in dog Lymphoma market



Animal Health Commercialisation Strategy: Target General Vet Practitioner Market

- Moneypatel: Meets requirements to target Vet General Practise market
 - Moneypatel can be delivered orally, is non-toxic (safe) and amenable to daily dosing
 - Target vets in major markets: US (90K+) and Europe (243K).
 - Need to establish clinical efficacy for MPL (Progression Free Survival, Tumour Reduction etc)!!

• Competing Oncology Drugs:

- Often require special handling, storage and expertise due to toxicity
- Veterinary Oncologists often required for more complicated therapies/treatment regimens
- Only 400 Veterinary Oncologists in US = niche market.



Epichem

About Epichem

- Specialist Synthetic & Medicinal Chemistry Services
- Highly awarded West. Aust. Company (Founded 2003)
- Staff of 23 (15 PhD's)



Revenues

Drug Discovery & Technical Services

- Fee for Service Consultancy
- Custom Synthesis
- Hit to Lead Validation/Optimisation
- Track record in clinical drug development

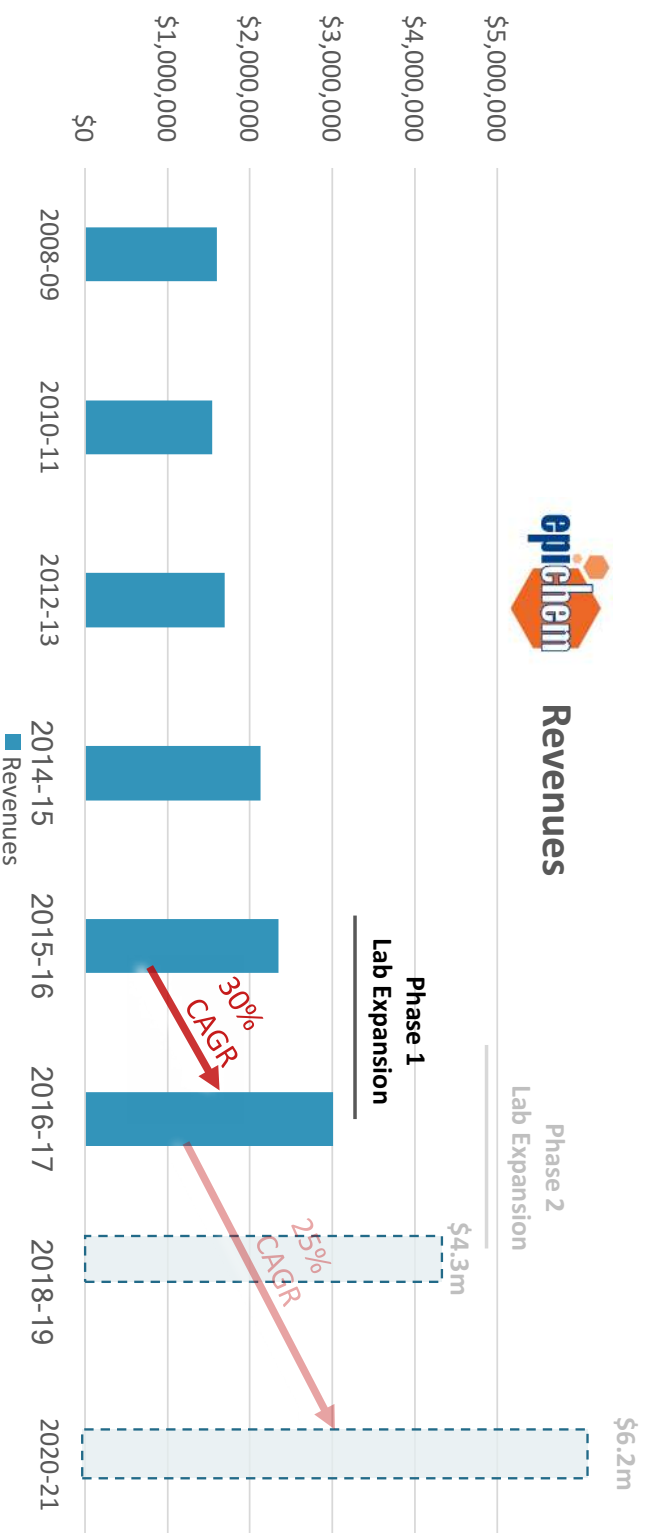
Fine Chemicals Catalogue

- High margin supply of reference standards
- ISO 9001:2015 Certification

Proprietary Drug Discovery Platform

- Engine to replenish development pipeline

Epichem Revenues



Record \$3.05m revenues achieved in 2017 FY

Key Drivers for Epicchem Growth

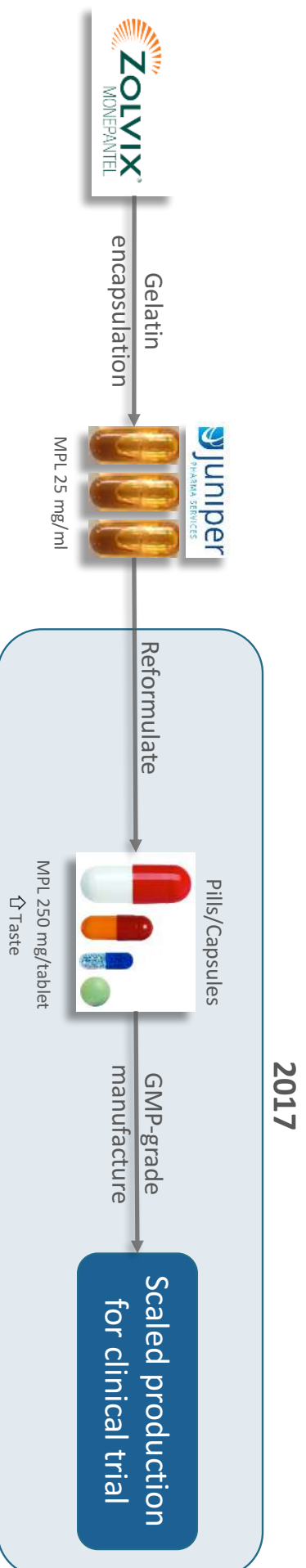
- Planned **Phase 2 Lab Expansion** increases capacity to meet demand
- Pursuing **ISO17025/34** accreditation – highest ‘calibration and testing’ stds.
- Facilitates expansion of **high margin catalogue** business
- **Lower** Australian Dollar maintains **global competitiveness**
- **Epicchem:** profitable business, forecast sales of \$4m in 2018 (>25% CAGR)

Next Steps and Roadmap

Key Drivers for 2017



Reformulation to resolve MPL palability



Reformulation achieves 3 strategic outcomes:

- Overcome foul taste of Zolvix which has resulted in significant compliance issues.
- Increase dose of MPL/capsule up to 10-fold (ie. 250 mg/capsule)
- Establish optimal formulation/manufacture protocols for all clinical development phases. Required to maximise commercial value.



PharmAust's Therapeutic Pipeline

Compound	Discovery	Screening	Preclinical	Phase 1	Phase 2	Phase 3
PAA1	Solid Tumours					
PAA1	Non-Cancer					
PAA1	Solid Tumours (Dogs)					
PAA1	Lymphoma (Dogs)					
	Novel PAA1 analogues					

Pet market value comparators (2017)

Nexvet: Acquired by Zoetis (Pfizer) for US\$85m
@66% premium to closing share price



Oasmia Pharma: Spun out 2 Vet assets to wholly-owned subsidiary valued at US\$75-80m



Assets include Doxphos (reformulated doxorubicin) and Paccal Vet (reformulated Pacitaxel) for companion animals

Aratana Therapeutics : Licensed Galliprant to Elanco for US\$45m upfront/\$83m milestones



Galliprant: Registered for pain in companion animals

Australian Peer Companies

Company	Description	Market Cap (\$Aus) ¹
Antara Lifesciences (ASX: ANR)	Animal/Human Health Antimicrobial (Detach) Revenues 2017 FY \$1m, EBITDA -3.4m	\$47m
National Vet Care (ASX: NVL)	Consolidated Vet Practices	\$127m
Apiam Animal Health (ASX: AHX)	Consolidated Vet Practices	\$63m
Mayne Pharma (MYX: PTX)	Reformulated/repositioned approved drugs	\$1,002m
Prescient Therapeutics (ASX: PTX)	Phase 1/II novel targeted therapeutic for human cancers	\$11m

1: 21st August 2017

Global Peer Animal Health Companies

Company	Description	Market Cap (\$US) ¹
Zoetis (NASDAQ)	Worlds largest diversified animal health company	\$29b
AB-Science (Euronext)	Masitinib for human (Ph3) and pet cancers (Registered). Validates PAA model of developing one drug for multiple markets in human and animal health.	\$483m
Kindred Bio (NASDAQ)	Repurposed biologics/small molecules for animal health	\$196m
Antara Therapeutics (NASDAQ)	Diversified animal health	\$274m
Oasmia Pharmaceuticals (NASDAQ)	Diversified/ Repurposed human and animal health	\$40m
VetDC	Companion animal cancers	Private

1: 21st August 2017

PharmAust's Value Proposition

- \$10m Market Cap = Enterprise Value (revenue + cash + phase II ready asset)
- Developing a **single product** for **multiple markets** in **human & animal health**.
- **Validated model:** Lower costs/development risks, accelerates path to **multiple** value accretion **catalysts**
- Novartis Animal Health/**ELANCO Option** - strategic access to vet health market with global heavyweight.
- **Granted** patents for **cancer** and **non-cancer** – creates license opportunities in multiple markets
- **Epichem:** profitable business, forecast sales of \$4m in 2018 (>25% CAGR)



Epicchem



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