



Phylogica (ASX:PYC)

Presentation

By CEO Stephanie Unwin
September 2017

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About Us

Who are we?

Perth-based biotech focused on creating a commercial platform to deliver drugs into the previously undruggable intracellular environment.

What do we do?

Improve existing drug delivery and identify carriers and cargoes from our proprietary libraries of Phylomers that specifically access and target intracellular diseases.

Why Peptides?

Peptides are naturally occurring protein blocks in the body with the potential to fight diseases.

Peptides are widely regarded as the basis for future world-leading drugs.

Key Investment Highlights

- **Addressing a large unmet market need** - \$250Bn for biologics targeting “undruggable” targets and \$110Bn cancer treatment
- **Derisked investment opportunity** - progressing 3 asset groups - intracellular delivery, biologic therapeutic solutions and new drug discovery
- **Well validated platform** technology - partnerships with Genentech, MedImmune, Pfizer, Janssen Biotech and Roche
- **Strong patent position** - international patents in place
- **Best-in-Class compounds** - leading programs FPP and iMyc are better than existing gold standard solutions
- **High calibre team** - attracted world-class talent from the industry and commercial sector
- **Blue sky potential** - extensive Phylomer library ensures a high hit rate on any target of interest



Financial details

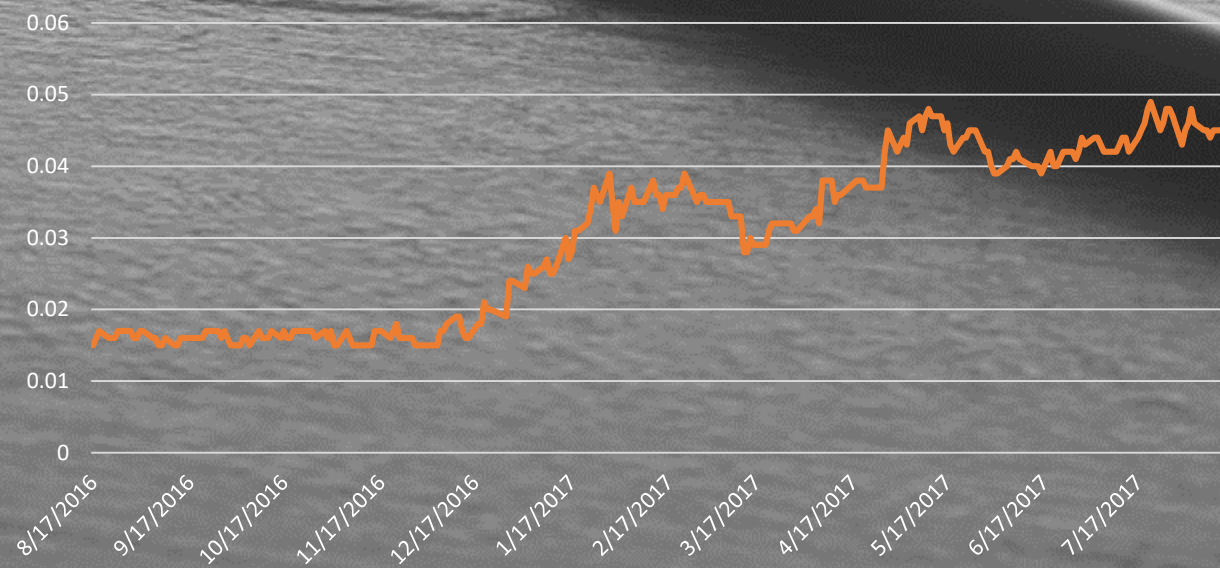
Current share price: \$0.045

Shares on issue: 2.12Bn

Market Cap: \$95.4M

Cash : \$9.5M

Phylogica (ASX:PYC) share price August 2016 -2017



Experienced Management Team

In mid 2017 Phylogica revitalised its management team with senior Pharma and commercial executives :

Core Management Team

Dr Hayes was previously the Head of Biologics at Amgen, responsible for leadership and strategic direction and operational management of Amgen's biological preclinical pipeline. Dr Hayes was also VP and Venture Leader of a biotech company within Janssen. He has over 20 years experience in biotech start ups and pharmaceutical companies.

Ms Stephanie Unwin, CEO

Dr Robert Hayes, CSO

Ms Unwin was previously an executive general manager at Synergy. She has held senior positions including Head of Strategy and Innovation; Chief Transformation Officer; and General Manager of both Commercial and Retail Business Units within the \$3bn electricity utility. Ms. Unwin's experience includes: managing an internal team of over 150 people, complex commercial transactions and reaching commercial close on a \$300M infrastructure fund for future renewable projects. She also has substantial experience as a company Director with over 15 years of Board engagements across both ASX and TSX.

Board of Directors

Ms Stephanie Unwin, CEO

Dr Robert Hayes, CSO

Prof. Paul Watt, NED

Dr Bernard Hockings, NED

Dr Rick Kendall, NED

Three focus areas to validate the commercial platform

1 **Improve Functional Penetrating Peptides (FPP's) endosomal escape activity**

- New FPPs to be identified by assays
- Protein engineering work
 - Fine tuning existing FPPs active window and strategic substitution
- 13 new FPP families announced last quarter with good activity

2 **Increase the cargo's binding affinity (binding to the target)**

- Ensuring a cargo is optimised to bind to the target: eg iMyc to Myc
- Work in progress to increase binding

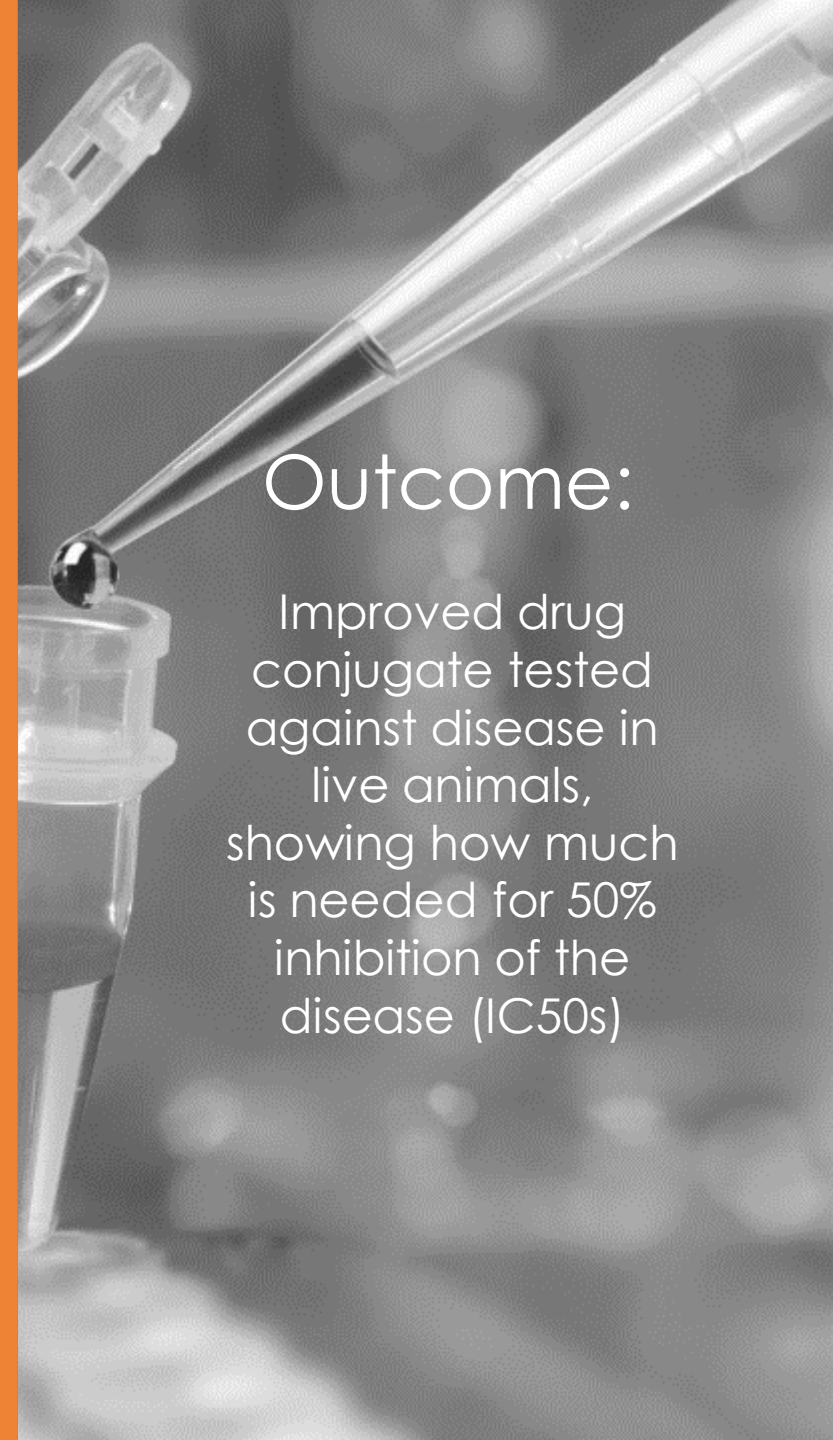
3 **Increase pharmacokinetics - drug conjugate where we want it for longer (biodistribution and half-life)**

- Increasing drug half-life – time it takes for half the drug to leave the body
- Application of half life extension techniques in progress

Outcome:

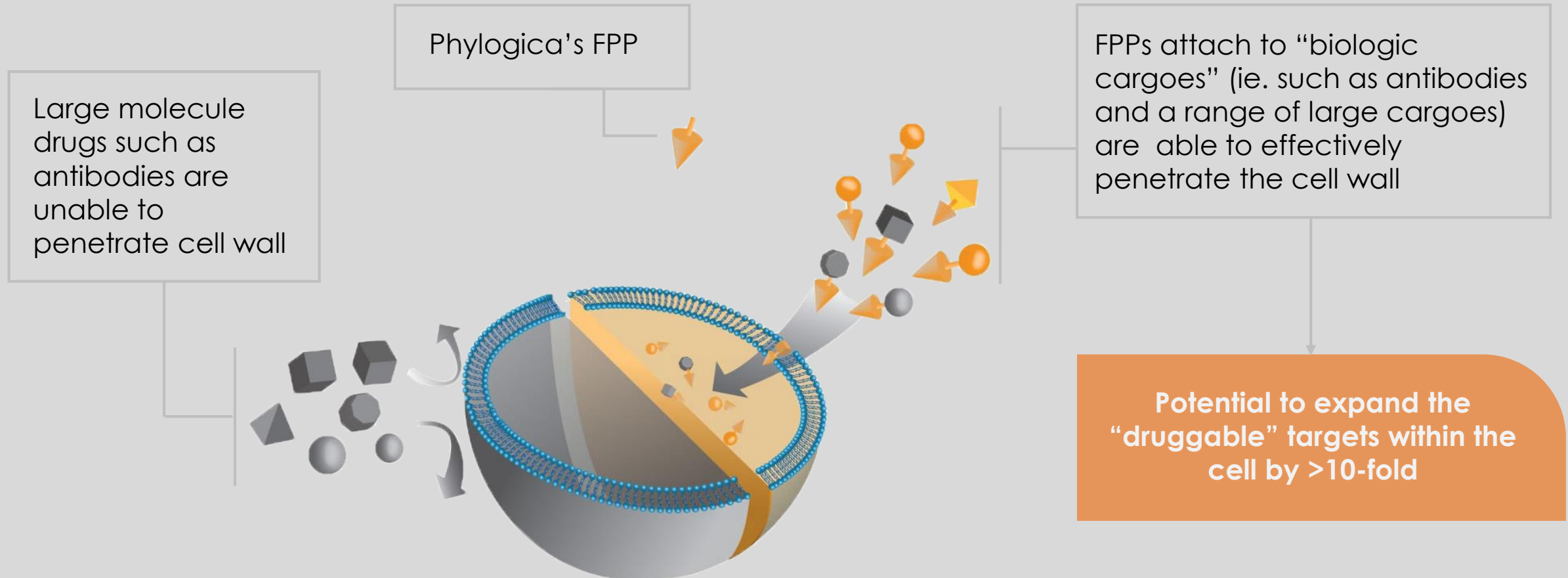
Improved drug conjugate tested against disease in live animals, showing how much is needed for 50% inhibition of the disease (IC50s)

Jan 18 – *in vivo* efficacy data to validate a functioning FPP platform



About Phylogica's FPPs

Phylogica's proprietary cell penetrating peptides which escape the endosome (our FPPs) can deliver a diverse range of "biologic cargoes" into cells overcome existing challenges to drug delivery

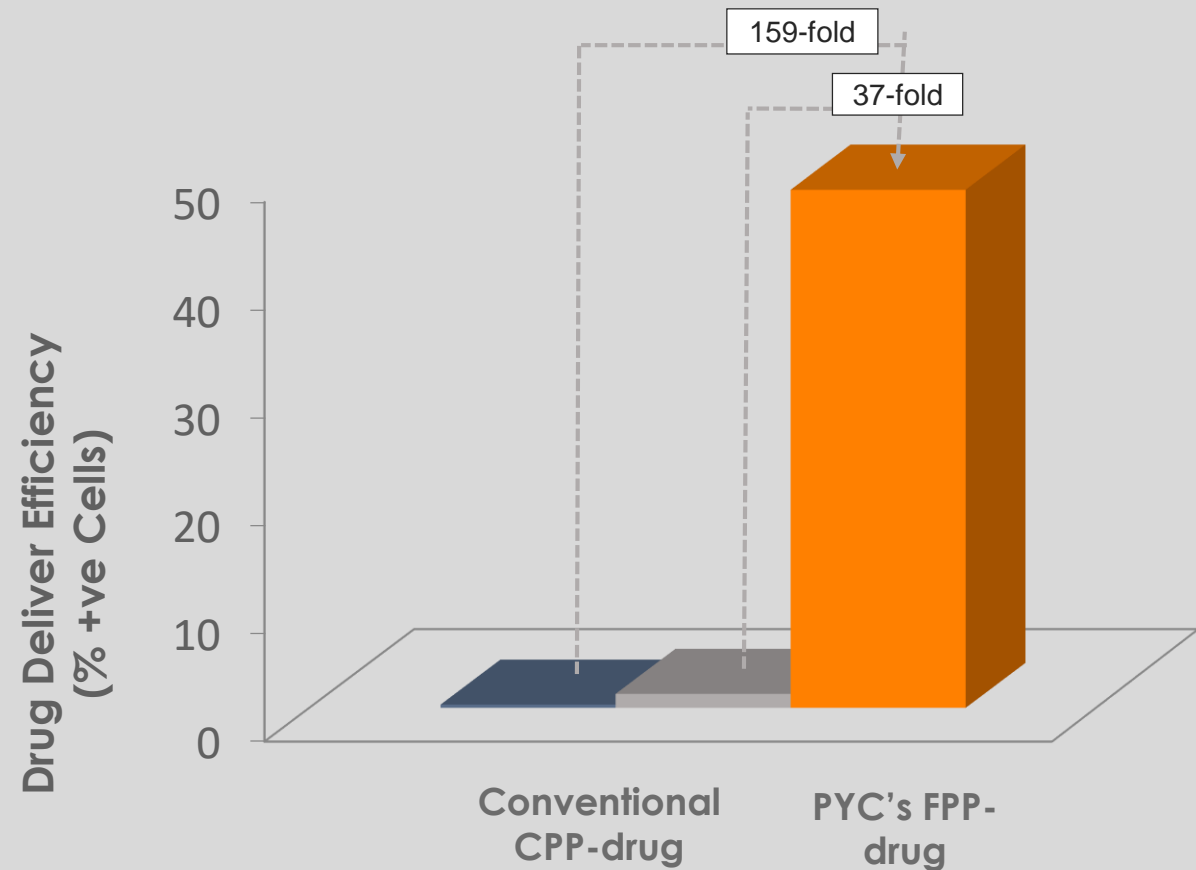


Best-in-class: Phylogica's FPP

As conventional Cell Penetrating Peptides (CPPs) are mostly trapped inside the cells, Phylogica's FPPs:

- Enable effective delivery of its biological cargoes as it enables the drug to penetrate cells and escape the endosome
- Are compatible with a wide range of biological cargoes
- Are found to be functional in a number of tissues
- Demonstrates evidence of action through assays and model cargoes *in vivo*

FPPs are best in class when compared to conventional CPPs even at lower concentrations.



Commercial Opportunities: FPP

- Addressing the massive \$250Bn (CAGR 10.6%) market of drug delivery
- Improving delivery of existing/new drugs
- FPPs form the basis of Phylomer Therapeutics with the potential to be a fully integrated drug delivery platform:
 - Compatible with wide range of biologics cargoes
 - Functional in multiple tissues
 - Demonstrable evidence of action
 - Evidence of *in vivo* efficacy
 - Promising safety data



Biologic Cargoes

Targeting disease with
Phylomer Peptides



Our Lead Biological Cargo: iMyc

What is Myc?

Myc

→ **Cell Growth**
→ **Metabolism**
→ **Apoptosis
(Cell death)**

- The Myc gene is a 'driver' for cancer when over-regulated
- 7 out of 10 cancers occur with an over expressed Myc protein

What is iMyc?

- PYC's iMyc (Myc inhibitor) reduces over-expressed Myc in cells, effectively killing off the cancer cell

How is iMyc effective?

- Current Gold Standard OmoMyc protein
- OmoMyc has low potency due to poor cell penetration
- FPP-iMyc is found to be more effective than FPP-OmoMyc

PYC's leading cancer therapeutic program: FPP-iMyc

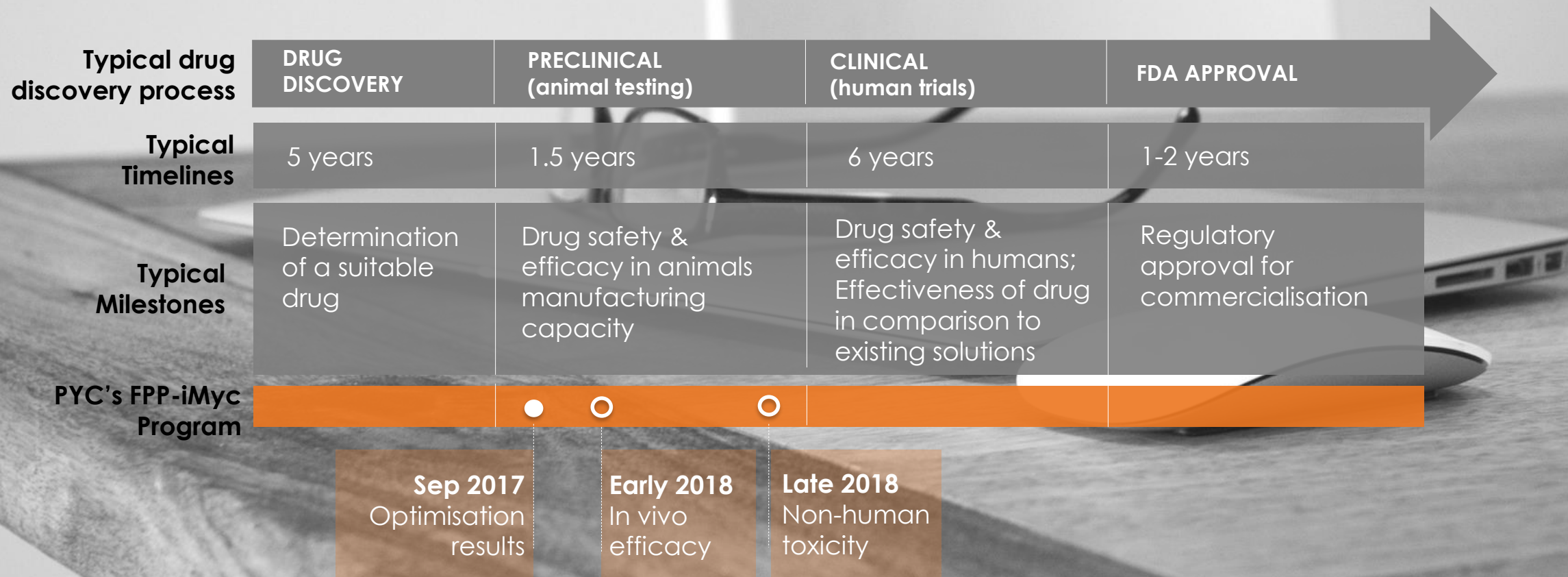
- 7 out of 10 cancers involve an overactive Myc protein
- Phylogica's lead program FPP-iMyc is best-in-class
- iMyc comparable or better than the 'OmoMyc' gold standard in killing Myc-addicted cells
- Target market – \$110 Bn

Next Steps:

- Lead optimisation and *in vivo* efficacy data
- Lead optimisation process can increase a drug's potency by 100-1,000 times



Value inflection points: FPP-iMyc



Partnering Strategy

Genentech
A Member of the Roche Group

PHOREMOST
DRUGGING THE UNDRUGGABLE

Pfizer

Janssen
PHARMACEUTICAL COMPANIES
OF Johnson & Johnson

MedImmune

Roche

 **THE UNIVERSITY OF QUEENSLAND AUSTRALIA** | **IMB**
Institute for Molecular Bioscience

 **MURDOCH UNIVERSITY** |  **LA TROBE UNIVERSITY**


Murdoch UNIVERSITY |  **Brunel University London**

 **Olivia Newton-John Cancer Research Institute**

 **HARVARD MEDICAL SCHOOL**

 **DANA-FARBER CANCER INSTITUTE**

 **Agency for Science, Technology and Research**
SINGAPORE

 **HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH**

Phylogica has a variety of academic and industry partnerships set up with key players in the industry working together to mine the Phylomer Library for new drug targets and to progress FPP's with various 'biological cargoes'.

Commercial Strategy

2017

- Enhancement of FPP platform by identifying 13 more Phylomers with potential to act as FPPs
- Optimisation and selection of 5 lead iMycs for preclinical work
- Secured funding to end of FY18 with \$5M placement
- Appointment of high calibre CEO, CSO and non executive director

2016

- Validation of FPP delivery technology
 - Proof of concept triple delivery negative breast cancer cell line
 - Improved delivery of biologic cargoes into cells *in vitro* and *in vivo*
 - FPP-OmoMyc shown to reduce lymphoma cells in spleen and bone marrow
- Identified various Phylomers outperforming OmoMyc as a Myc inhibitor (iMycs)
- Achieved Genentech's \$2M milestone payment for the delivery of anti-microbials via FPP delivery

2018

- FPP-iMyc *in vivo* efficacy data
- FPP-iMyc IND enabling toxicology studies
- Investigate manufacturing in 2018 ahead of IND application to enter into Phase 1 clinical trials in 2019



Thank you

For more information contact
Stephanie Unwin at
stephanieu@phylogica.com