

# Phylogica Ltd

## (PYC \$0.045) Speculative Buy

EUROZ

Analyst	Date	Price Target
Ben Laird	25 <sup>th</sup> July 2017	\$0.074/sh

Phylogica Ltd	Year Ended 30 June	
Share Price	0.045	A\$/sh
Price Target	0.074	A\$/sh
Valuation	0.074	A\$/sh

### Commercialisation of the Science Progressing, Cashed up, Key Hires

#### Investment case

PYC has in recent times made progress across a range of fronts that in our view have improved the investment proposition of the company from when we initiated coverage in early April this year. Namely, PYC has:

1. Demonstrated enhancement of their core platform Functional Penetrating Peptide (FPP) technology, in our view increasing the probability of future collaboration deals and the potential quantum of upfront payments the company could achieve.
2. Outlined steady progression of their iMyc program towards the key milestone of entering animal trials in early 2018.
3. Secured funding runway to end CY'18 via a \$5m placement that will see the company through the key milestones of the iMyc program independent of whether further FPP alliance deals can be signed in the interim.
4. Hired a high calibre CEO, Chief Scientific Officer (CSO) and NED to drive development and commercialisation of the PYC drug discovery platform and iMyc program.

While we still see the outcome of the iMyc preclinical program as the primary driver of PYC's market value in the medium term we have been encouraged by the company's progress with respect to the commercial maturation and focus of the core FPP technology. The ability of the company to attract top tier personal and capital is also a positive. If PYC can crystallise the technical progress they have achieved with regard to their FPP platform in the form of more collaboration deals at premiums to the previous \$1-2m "upfronts" achieved, we believe the baseline value ascribed to the company by the market could be significantly enhanced.

**We maintain our Spec. Buy recommendation with a price target of \$0.074/sh.**

#### Key points

- PYC's iMyc program is progressing as planned towards animal trials in early 2018. Lead optimisation is underway and showing encouraging signs with respect to potency and Pharmacokinetic (PK) profile.
- PYC has identified 13 more Phylomers from their proprietary peptide library that have potential application as FPPs. The greater the number of FPPs, the broader the potential drug cargos that the FPP platform can interact with, improving the probability of alliance deals.
- By modifying the length of FPPs and creating genetic variants of already identified FPPs, potency improvements of up to 5x have been achieved in PYC's lead FPP candidates.
- PYC's understanding of what drives the superior performance of their FPPs has also been improved in recent times. This greatly enhances the efficiency by which PYC can "mine" their platform of Phylomers to generate new FPP candidates.
- PYC has made good progress with respect to enhancing the PK profile of their lead FPPs.
- Importantly PYC's lead FPPs have demonstrated no toxicity in mice.
- PYC recently completed a capital raising of \$5m @ \$0.04/sh to a single HNW individual. We understand this provides the company with runway beyond the iMyc preclinical program to end CY'18. It also allows PYC to continue collaborations in house cancer programs (STAT5 & YB1).

Shares on issue	2120	m, undiluted
Options on issue	48	m
Market Cap - undiluted	95	A\$m
Enterprise Value	85	A\$m
Debt	0	A\$m
Cash (est end FY'17)	10.0	A\$m

Turnover	1.6m	sh/day
12 Mth Hi-Lo	0.012-0.049	cps
Balance date		June 30th

#### Directors & Management

Ms Stephanie Unwin	CEO
Dr Robert Hayes	CSO
Dr Paul Watt	NED
Dr Bernard Hockings	NED
Dr Rohan Hockings	alt NED

#### Shareholders

Bernard Hockings	27.5%
David Sietsma	6.2%
Australian Land	7.6%
Anthony Barton	4.7%

#### Company Details

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#### Share Price Chart



#### Disclosure

This analyst declares that he has a beneficial interest in Phylogica Ltd.

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## Phylogica Ltd

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- In conjunction with the capital injection the company also announced the hiring of a CEO (Stephanie Unwin) and a CSO (Dr Robert Hayes, previously a NED at PYC). Ms Unwin has a diverse commercial/legal background and will lead commercial and strategic outcomes for the company. Dr Hayes (ex Amgen and J&J) will be responsible for directing drug discovery and overseeing the various drug development programs within PYC.

#### Share price catalysts

1. Entering preclinical trials: This is a key milestone for PYC and is expected to occur by late CY'17/early CY'18. We see this point as when many investors will "place their bets" for an outcome.
2. Maturation of other early stage FPP-cargo drug programs: PYC already has a plethora of parallel drug programs with reputable partners. Should any of these programs mature or lead to more alliances with Pharma Co it would add to our positive stance.
3. In vivo Efficacy & Toxicology results for the iMyc program: Once preclinical trials have commenced the first key data point is the outcome of efficacy and toxicology trials in mice. These results are estimated to be available in Q1/Q2 CY'18. A positive result would significantly de-risk the iMyc platform. Importantly it would also demonstrate that the FPP portion of the conjugate is effective. This would have a multiplicative effect on the value of the broader PYC platform. While in all likelihood too early for a Pharma Co alliance deal this should lead to a rerating of PYC.
4. Non-GLP toxicology trials in primates for the iMyc program: Once data from the efficacy and toxicology trials is analysed PYC's iMyc drug will be administered to Monkeys in a non-GLP (non-Good Laboratory Practice) trial. This is to test the toxicology of the drug in a metabolic system as close to human as possible. If this phase is a success the risk of failure to move to Phase 1 clinical trials is low. Once this phase is completed we see a high likelihood that Pharma Co would look to engage PYC in a meaningful way. We estimate this could occur in Q4 CY'18.
5. GLP toxicology trials in primates for the iMyc program: Post the non-GLP trial a more formal Good Laboratory Practice (GLP) toxicology trial is conducted in Monkeys. This is the final major technical step required to complete the preclinical phase. This is expected to occur in late CY'18.

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### Valuation

We value PYC at \$0.075/sh with a Spec BUY rating.

Due to the early stage nature of the iMyc program we choose to value PYC based on a risk weighted potential outcome of a license deal with Pharma Co post successful preclinical trials.

We ascribe a nominal value of \$50m for PYC's peptide platform, FPPs and other drug candidates. Note that if PYC can land collaboration deals with improved up front metrics to the previous \$1-2m level we could look to ascribe more value to PYC's core platform.

Table 1 below outlines the value and nature of several license deals completed in the Immuno-oncology (IO) field in 2016 at the preclinical phase of a drug's development. We see the IO field as a relevant comparison to PYC's iMyc program as IO is a relatively new pathway of cancer treatment that has attracted significant Pharma Co interest. PYC are planning to enter preclinical trials for their iMyc program by end CY'17 and complete the bulk of the technical data by 2H CY'18.

Company	PharamCo Partner	Trial Stage	Field	Drug	Notes	Upfront Terms	Ongoing Terms	Carry on Spend
<b>Jounce Therapeutics</b>	Celgene	Preclinical	Immuno-oncology	JTX-2011	Designed to treat solid tumors as a single agent or in combination	US\$225 plus US\$36m equity investment	Jounce retains 60% US profit share for JTX-2011	50% going forward
							Jounce keeps 25% US profit share for first additional program	
							Jounce keep 50% US profit share for next three additional programs	
<b>Argenx</b>	AbbVie	Preclinical	Immuno-oncology	ARGX-115	Due to it's mechansim of action it can treat a broad range of cancers and could be used with other meds	US\$40m plus potential US\$20m top up	Potential additional US\$625m as various hurdles are met	
							Double digit royalties if drugs reaches sales	
<b>Advaxis</b>	Amgen	Preclinical	Immuno-oncology	ADXS-NEO	Highly targeted, patient specific treatment	US\$40 plus US\$25m equity investment	Potential additional US\$475m as various hurdles are met	
							High single digit royalties if drugs reaches sales	
<b>Flexus</b>	Bristol-Myers Squibb	Preclinical	Immuno-oncology	FLX925	Potential ability for an acquirer to combine the drug with other drug assets.	US\$800m	Potential additional US\$450m as various hurdles are met	

Source: Fierce Biotech

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The reason for the disparity in up front terms between the Flexus/BMS deal and the rest is because FLX925 can potentially be combined with other drugs to produce compounding beneficial effects. The result being that an acquiring Pharma Co could potentially lift the commercial value of their broad portfolio of drugs as opposed to just a single silo.

We see PYC's iMyc program of potentially being in this category. iMyc acts via a different but complimentary pathway to IO drugs. In laymen's terms IO drugs 'hit the brakes' on tumour progression while iMyc is akin to 'taking the foot off the accelerator'. These two distinct mechanisms of action could in theory be combined to produce improved therapeutic effects of existing drugs on the market.

Table 2 shows the market capitalisation (where applicable) for the same companies outlined above:

Company	Stock Ticker	Exchange	Market Capitalisation (A\$m)	Notes
Jounce Therapeutics	JNCE	NASDAQ	998	
Argenx	ARGX	Euronext	469	
Advaxis	ADXS	NASDAQ	434	
Flexus	n/a	n/a	1067	IO program taken over, other assets spun out

Source Bloomberg

Taking all of the above into account we believe PYC could potentially secure a licensing deal with Pharma Co for an upfront payment of US\$50-150m with longer term milestone payments of US200-400m+ and a double digit royalty stream.

On the basis of the potential upside outlined above vs the risk of successfully completing preclinical trials we derive the following valuation for PYC:

PYC Valuation		
iMyc Program	A\$m	100
Other Assets	A\$m	50
Cash	A\$m	10
<b>Total</b>	<b>A\$m</b>	<b>160</b>
SOI (fully diluted)	m	2168
<b>Valuation</b>	<b>A\$/sh</b>	<b>0.074</b>

### Investment Case

After a decade of development PYC are now close to entering preclinical trials for an in house oncology drug that aims to target and inhibit "Myc", a gene which when over active is seen as a "driver" of most human cancers. The prize should this program ultimately be successful is huge. We see the progression of PYC's Myc inhibition (iMyc) oncology program to the preclinical phase of development as a key inflection point for PYC. We believe that towards the back end of the preclinical period, if the in vivo efficacy and toxicology data is positive, it could be catalyst for a potential partnership deal with Pharma Co that could underpin multiples of the current share price. In the meantime the company is also adding value to their core FPP technology and hence enhancing the probability of other accretive collaboration deals in the short to medium term.

**We initiate coverage on PYC with a Spec BUY recommendation and a price target of \$0.074/sh.**

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