ASX ANNOUNCEMENT

PHYLOGICA

BREAKTHROUGH PEPTIDE THERAPEUTICS

Immunotherapy – animal model results show FPP effective in delivering peptide cancer vaccine – patent filing

- **Phylogica's Functional Penetrating Peptide (FPP) conjugated to a tumour antigen has extended average survival of mice with melanoma by ~100%**
- **The result provides both:**
  - **further evidence of in vivo efficacy for the company's core FPP delivery technology; and**
  - **an additional development program for Phylogica in the area of immunotherapy**
- **An Australian patent (AU2018900032) for vaccine conjugates inducing an immune response has been jointly filed by Phylogica and Telethon Kids Institute . The filing of this work provides a priority date.**
- **These results form the basis of a 2018 program that will evaluate the vaccine conjugates including both prophylactic and therapeutic vaccination experiments**

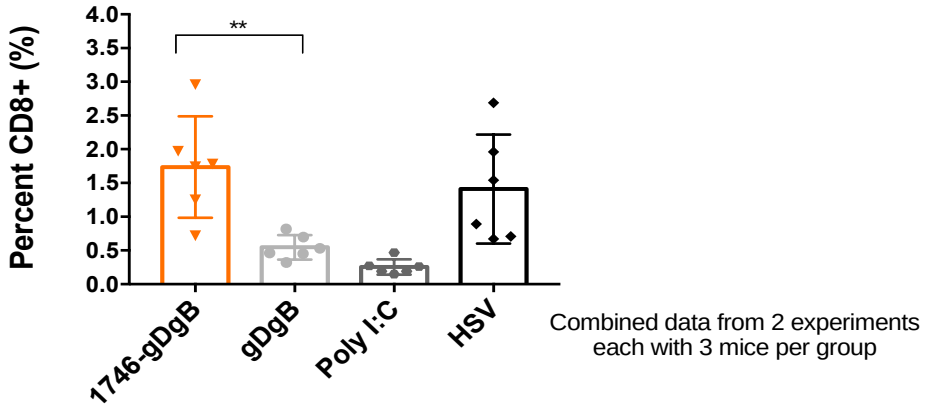
PERTH, Australia, 8 January 2018: Phylogica Limited (ASX:PYC) (**Phylogica** or the **Company**), developer of a leading intracellular drug development and delivery platform technology, is pleased to provide the first results from mouse melanoma models evaluating the ability of the company's FPP delivery technology to effectively stimulate the immune system to attack and eliminate tumour cells and supporting patent information.

Phylogica's collaboration with the Telethon Kids Institute Cancer Immunology Unit combines Dr Jason Waithman's immunology expertise with Phylogica's novel endosomal escape Functional Penetrating Peptides (**FPPs**) to generate a cancer vaccine that specifically targets part of the immune system called cross presenting dendritic cells - whose role is to identify viruses and other invaders including cancer. Once a virus or cancer is identified the role of dendritic cells is to break down the virus or cancer and to then present parts of them (peptides) to T cells. Having received this information, the T cells (CD4+ and CD8+) then expand in number and go on to eliminate the cancer cells.

Figures 1and 2 show this effect in mice. Figure 1 illustrates the increase in the number of CD8+ cells in mice treated with an antigen (gDgB) or an antigen attached to an FPP (1746-gDgB). Both of these should be compared to the "negative control" known to have no effect (poly IC). The number of CD8+ cells is increased in both mice treated with gDgB and 1746-gDgB, and the FPP (1746-gDgB) version is significantly better. The FPP version (1746-gDgB) produces more CD8+ cells than mice infected by Herpes Simplex Virus (HSV) (an indication of the strength of T cell

response from a healthy mouse with an active viral infection).

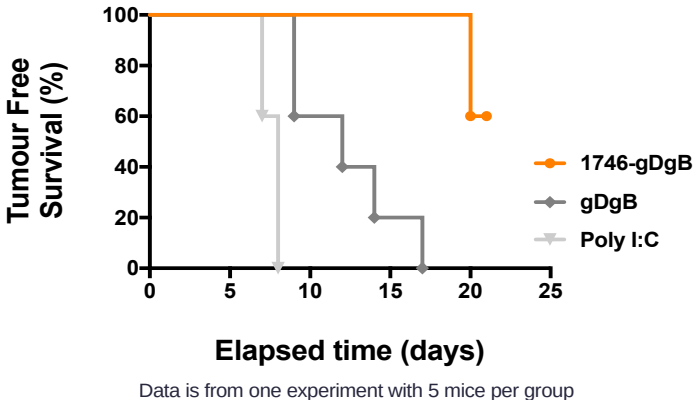
Figure 1: CD8+ T cell expansion 2 nmol dose



Mice were treated with an antigen alone (gDgB - light grey) or attached to an FPP (1746 – gDgB - orange). Although both result in an increase in CD8+ cells in mice, the efficient processing of the FPP-gDgB results in a significantly greater number of CD8+ cells. The Poly I:C treatment (dark grey) is a "negative control" known to have no effect, and the HSV group are mice infected with Herpes Simplex Virus that have high levels of CD8+ cells demonstrating a competent immune response.

The FPP cancer vaccine was then tested in a cancer model to see whether the expansion in CD8+ cells has a meaningful effect on mouse survival. As shown in Figure 2, the result of the experiment in mice with melanoma demonstrates improved survival for the 'FPP-antigen' (treatment group) when compared to either the 'antigen alone' (positive control) or placebo (negative control) groups (average survival of 23+ days in the FPP-antigen 'treatment group' vs 12 days in the antigen alone positive control group and 7 days for the placebo or negative control group respectively).

Figure 2: Tumour free survival



Data is from one experiment with 5 mice per group

Preliminary proof-of-concept results clearly indicate protective effects of the FPP-containing cancer

vaccination in an engineered B16-gB melanoma model.

Mice were inoculated with melanoma cells and either:

*(i) a "negative control" that is known to have no effect - intended to represent treatment free survival (Poly IC) – **light grey**,*
*(ii) a protective peptide antigen (gDgB) – **dark grey***
*(iii) Phylogica's FPP attached to the protective peptide (1746-gDgB) - **orange**.*

The survival curves for each group are shown on the diagram above.

A new Australian provisional patent was filed on 5 January relating to conjugates for use in the generation of an immune response utilising Phylogica's FPPs and endosomal escape technology (AU2018900032). Next steps for the collaboration include repeat experiments against additional controls (eg TAT) and trial therapeutic vaccination experiments.

Commenting on the filing of the patent and experiment results, Phylogica CSO Dr Robert Hayes said, "We are particularly excited about these results because they again demonstrate the efficacy of FPPs in animal models, building on our earlier results, but also represent a potentially ground-breaking methodology in cancer vaccines and infectious disease supporting further work. Personalised vaccination strategies are showing greater potential as evidenced by recent clinical trials, and therapeutic cancer vaccines will soon move into the mainstream where we anticipate Phylogica's FPPs may play an important role."

Ms Unwin, Phylogica CEO stated "Phylogica's strategy of validating its drug delivery platform across diverse cargoes and cell types has been enhanced by this work. We now have preliminary *in vivo* data showing our FPPs successfully deliver an effective cargo into the cytosol in dendritic cells adding to our matrix of delivery to new cell types."

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About Phylogica

Phylogica Limited (ASX: PYC) is a biotech company focused on commercialising its intracellular drug delivery platform and panning its Phylomer libraries to identify drug cargoes for development against a wide range of disease targets. Phylogica controls access to the world's most structurally diverse source of peptides called Phylomers, which have the ability to act as effective drug delivery agents and drug cargoes, penetrating cell walls to reach previously 'undruggable' targets across a range of disease types. Phylogica's platform of proprietary cell penetration peptides is showing promise in delivering a diverse range of drug cargoes into cells, and the company's lead asset program has identified a Phylomer which can inhibit Myc, a protein responsible for the regulation of cancer cell growth. The company has had collaborations with several pharmaceutical companies including Roche, Medimmune, Pfizer, Janssen and currently with Genentech.

Forward looking statements

Any forward-looking statements in this ASX announcement have been prepared on the basis of a number of assumptions which may prove incorrect and the current intentions, plans, expectations and beliefs about future events are subject to risks, uncertainties and other factors, many of which are outside Phylogica's control. Important factors that could cause actual results to differ materially from assumptions or expectations expressed or implied in this ASX announcement include known and unknown risks. Because actual results could differ materially to assumptions made and Phylogica's current intentions, plans, expectations and beliefs about the future, you are urged to view all forward-looking statements contained in this ASX announcement with caution. Phylogica undertakes no obligation to publicly update any forward-looking statement whether as a result of new information, future events or otherwise. This ASX announcement should not be relied on as a recommendation or forecast by Phylogica. Nothing in this ASX announcement should be construed as either an offer to sell or a solicitation of an offer to buy or sell shares in any jurisdiction.

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