PHYLOGICA

BREAKTHROUGH PEPTIDE THERAPEUTICS

ASX ANNOUNCEMENT

Animal models - 400% outperformance of gold standard

Phylogica (PYC) announces successful results from time-course studies in animals designed to assess the effectiveness of its Cell Penetrating Peptide (CPP) platform to deliver drugs into the eye. These time-course studies complement the single time point results previously described (see ASX announcement of 27 June 2019).

Highlights

- PYC's 'second generation' CPPs are **greater than 400% more effective than the gold standard CPP**[1] at achieving exon skipping (the desired effect of a drug cargo) within the retina in animal studies at day 7 post-administration
- The **magnitude of outperformance of PYC's CPP is expanding** the longer the experiments continue
- The CPP that has achieved this effect has been demonstrated to have a significantly improved safety profile on systemic injection than the gold standard CPP[2] **meaning PYC is differentiated on both efficacy and toxicity**

23 July 2019: Animal studies demonstrate that one of Phylogica's CPPs delivers substantially more drug cargo inside its target cell than the current CPP benchmark for clinical development (see footnote 1 above). This result is significant given that the rate-limiting step for the development of delivery technologies is the amount of cargo that can be safely delivered inside a cell.

The results have been achieved in our 'flagship' program directed towards delivering a promising class of drug cargo known as an Anti Sense Oligonucleotide (ASO) into the retina of mice. The retina is a tissue at the back of the eye which can be affected by a variety of blinding diseases. The treatment of inherited retinal diseases is the priority setting for the clinical development of our platform.

Technical details

i) Efficacy studies

[1] The reference peptide for clinical development is an oligo-arginine peptide with a chemically stabilised backbone (RXR4). The peptide resembles a CPP known as 'PepK' which represents the CPP with the greatest body of evidence to support clinical development of Anti-Sense Oligonucleotide delivery.

[2] PYC's CPP outperformed two other CPPs (PepK and Pip6a) both in the efficacy evaluation in the eye (by an even greater margin than the relative performance to RXR4) and in the systemic safety studies (also by a greater margin)

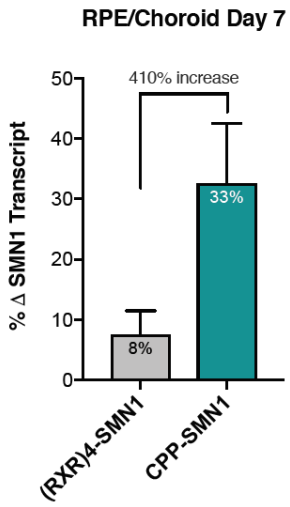

Figure 1. Delivery of the SMN1 (Survival of Motor Neuron 1) ASO cargo into the retinal pigment epithelium (RPE) and choroid layer of the eye by Phylogica's CPP and RXR4 at a single dose of 1.6 micrograms per eye at 7 days post-administration. Higher levels of 'transcript change' or exon skipping[3] by the SMN1 ASO indicate more effective delivery of the cargo by the CPP.

The result was obtained in a single pilot experiment containing 3 mice per group. Longer time course studies are currently underway.

ii) Toxicity studies

A dose escalation study was undertaken to evaluate the toxicity associated with PYC's CPPs relative to RXR4, Pip6a and PepK (All conjugated to the SMN1 ASO cargo). Animals were assessed at single systemic doses of 10mg/kg, 20mg/kg, 30mg/kg and 40mg/kg for signs of toxicity to establish the maximum tolerated dose.

PepK and Pip6a were observed to be associated with toxicity at a dose of 10mg/kg and the animal ethics protocol for the study prevented dosing at higher levels with these CPPs. RXR4 was observed to be toxic at 20mg/kg. PYC's CPP's (including the CPP described above as demonstrating the 400% outperformance in the efficacy studies in the eye) demonstrated minimal toxicity at doses of 40mg/kg (the maximum dose allowed under the study).

Shareholder Update

Shareholders are invited to join the Company at the Harry Perkins Institute (North campus located next to Sir Charles Gairdner Hospital) at 9am on Wednesday 24 July in Seminar Room 612a for a discussion of these results and their relevance to the future direction of the company.

ENDS

[3] Exon skipping is the outcome achieved by the Anti-Sense Oligonucleotide (ASO) when it is effectively delivered into the nucleus of the cell. It describes the process of gene editing which results in the production of a different (i.e. non-diseased) protein by the cell's own 'protein making machinery'

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About Phylogica

Phylogica Limited (ASX: PYC) is a biotech company focused on commercialising its intracellular drug delivery platform and screening its peptide 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 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 penetrating peptides has been validated across multiple animal models for the ability to deliver a diverse range of drug cargoes into cells. The company has collaborations with several pharmaceutical companies including Roche, Medimmune, fizer, Janssen and 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.