ASX ANNOUNCEMENT

8 September 2020

Creation of a novel gene therapy delivery technology

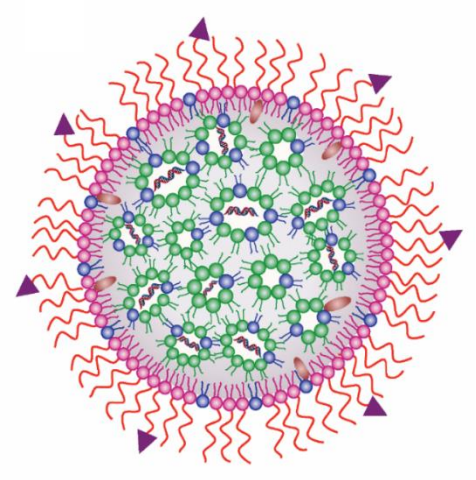
Highlights

- In March 2019, PYC announced a 'high risk, high impact' element of our corporate strategy to explore the potential of a novel non-viral delivery technology for gene therapy – this work is now yielding very promising results
- Safe and effective delivery remains the major barrier to the expansion of gene therapy drugs (including siRNA, mRNA, DNAzymes, and DNA therapies) into new indications
- PYC has now demonstrated that combining PYC's proprietary Cell Penetrating Peptides with Lipid Nanoparticles creates a potent and safe delivery technology to carry siRNA into cells – an example of one of the more complex forms of these gene therapies
- These results provide a platform for the selective expansion of PYC's drug delivery capabilities to complement the Company's primary focus on progressing the first disease modifying therapy for patients with Retinitis Pigmentosa type 11 into clinical development

Announcement

PYC Therapeutics, (ASX: PYC) ('The Company' or 'PYC') has been exploring methods for intra cellular delivery of a range of high value drug cargoes that can't be covalently linked to its Cell Penetrating Peptides (CPPs) (See ASX announcement of 14 March 2019). The cargoes of interest include siRNA, mRNA, DNAzymes and DNA therapies. Positive results would open up a new paradigm of drug delivery by overcoming the safety and production concerns associated with delivering these drug cargoes using engineered viruses (eg. Adeno-Associated Virus or AAV platforms).

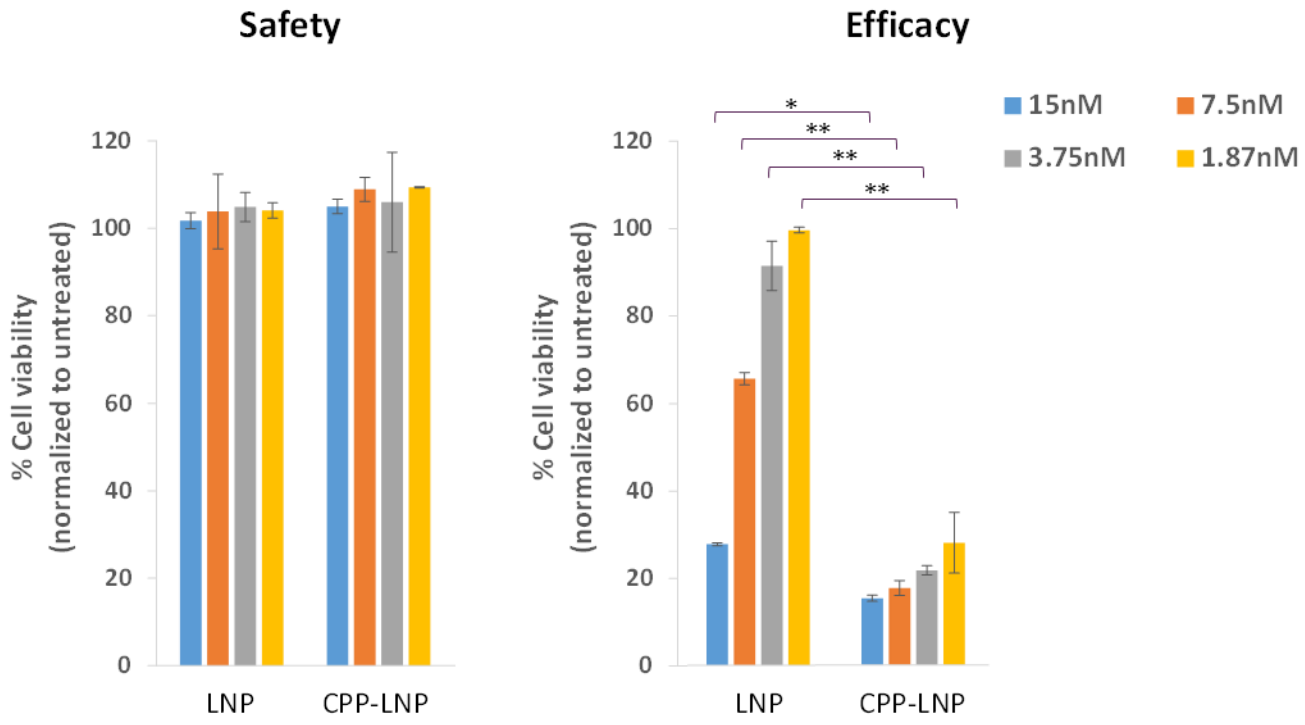
Figure 1 – Illustration of a Lipid NanoParticle (LNP) shell (pink and blue dots) with Cell Penetrating Peptides (red lines with purple triangular heads) embedded in the LNP surface with a siRNA drug cargo (red and blue helices) contained within the LNP.



Despite the enormous interest in gene therapy, the field has been held back by the lack of safe and effective genetic drug delivery technologies. The currently utilised viral approaches are restricted by uneven distribution between cells and a raft of safety concerns. Non-viral approaches are therefore preferred, yet suffer from low drug uptake (transfection) in target cells (efficacy). Lipid NanoParticles (LNPs) are a leading form of non-viral delivery technology for gene therapies that are increasingly being adopted in clinical development programs (including by Moderna's mRNA vaccine for COVID-19). Improved transfection efficiency (efficacy) is the key to broader uptake of LNPs as a delivery technology for gene therapy. The results described below demonstrate the utility of combining PYC's proprietary CPPs with LNPs to improve their transfection efficiency (efficacy).

In vitro data evaluating PYC's CPPs embedded in the surface of Lipid NanoParticles (LNPs) demonstrate a substantial improvement in efficacy of the LNPs with no observed toxicity – opening up a path to non-viral DNA and RNA drug delivery (see Figure 2).

Figure 2 – results of evaluation of 'naked' LNPs and CPP-LNP combinations across both safety (toxicity) and efficacy read-outs. Higher cell viability in the safety assay demonstrates no observed toxicity with either the 'naked' LNPs nor the CPP-LNP combination, illustrating the safety of both delivery technologies (note: a negative control siRNA cargo that does not trigger programmed cellular death inside the LNPs is included in the safety assay). Lower cell viability in the efficacy assay demonstrates successful delivery of the siRNA cargo that causes programmed death of the cancer cells – the CPP-LNP combination is far more efficient at delivering the siRNA cargo than the 'naked' LNP – particularly at low doses. * = p<0.05, ** = p<0.01



OVACAR8 cells were treated for 72hrs with LNPs or CPP-LNPs at different PLK1-siRNA doses. Cell viability was measured by XTT assay

The LNPs used in these experiments were developed in the laboratory of Professor Dan Peer, from Tel Aviv University (TAU), patented by Ramot, the technology transfer company of TAU and funded by The Technology Innovation Momentum Fund.

Professor Dan Peer is a leading expert in the field of LNPs whose technology is currently in clinical development and who has published widely on the subject matter.

The next step for PYC is to demonstrate the utility of these CPP-LNP combinations in animal models.

Comments

Sue Fletcher, PYC's CSO: *Our CPP-LNP delivery technology is an exciting development that we expect will open the door to many additional nucleic acid drugs. We are particularly delighted by this demonstration of the benefits of our collaborative approach to research and drug development and thank Prof. Dan Peer for joining us on this journey.*

Prof. Dan Peer , Tel Aviv University: *I am excited to work with PYC and hope these CPP-LNP combinations will generate novel therapeutic opportunities that improve patients quality of life.*

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About PYC Therapeutics

PYC Therapeutics (ASX: PYC) is a drug development company solving a major challenge in the development of a revolutionary new class of drugs – delivering large drugs into cells. Cell Penetrating Peptides (CPPs) can overcome 'the delivery challenge' and provide access for a wide range of potent and precise drug 'cargoes' to the 'undruggable genome' – the highest value drug targets that exist inside cells. PYC Therapeutics is using its CPP platform to develop a pipeline of novel therapies with an initial focus on inherited retinal diseases.

About Vision Pharma

Vision Pharma Pty Ltd (Vision) is a joint venture between PYC Therapeutics (PYC) and the Lions Eye Institute (LEI) dedicated to the development of new treatments for a range of debilitating eye diseases. Vision is advancing a lead program for the treatment of a form of Retinitis Pigmentosa as well as a range of other precision medicines for different eye diseases. Vision

combines the clinical expertise of LEI with the drug development capabilities of PYC and is owned according to a 90% (PYC) and 10% (LEI) shareholding distribution.

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 the Company'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 the Company'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. The Company undertakes no obligation to publicly update any forward-looking statement whether as a result of new information, future events or otherwise.

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