



PHYLOGICA

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PHYLOGICA PATENTS TECHNOLOGY TO DISCOVER SOPHISTICATED CELL-PENETRATING DRUGS

PERTH, AUSTRALIA: 27 June 2013 – Leading peptide drug discovery company Phylogica Ltd (ASX: PYC, XETRA: PH7) has developed and patented an enhancement to its Phylomer® peptide platform to discover more sophisticated cell-penetrating drugs to help tackle disease.

This new component of Phylogica's technology will enable more efficient screening of its library of billions of naturally occurring peptides to identify and capture those with greatest potential to target disease proteins inside of cells.

To develop a new generation of therapies, there is global demand for novel peptides that can effectively deliver biologics drugs to cells where most targets reside. These peptides need to:

- penetrate natural cell membrane barriers;
- target particular parts of the cell such as nuclei; and
- ensure that drug cargos are not trapped in endosomes.

Phylogica's technology satisfies these criteria by identifying effective cell-penetrating peptides that can deliver targeted therapeutic drug cargos to a desired location.

"We are not aware of any other peptide discovery company that has overcome the challenge of identifying effective cell-penetrating peptides," said Dr Paul Watt, Phylogica's Chief Executive Officer.

"We are already applying this technology in collaboration with a pharmaceutical company to discover novel Phylomer-drug conjugates and anticipate new partnerships in this field to further realise the value of this exquisitely sensitive technology."

"The opportunity for developing peptide-drug conjugates targeting abnormal processes that manifest within the cell is substantial, with the potential to treat an enormous variety of diseases more effectively. This new technology is game changing and we look forward to the opportunity to present data to the global scientific and pharmaceutical community.

"The vast majority of known disease targets reside inside of cells, yet we can't reach them with the next generation of molecular therapies, because of the barriers presented by cell membranes."

"By efficiently detecting Phylomer peptides or peptide-drug combinations that can penetrate cell membranes and be active in cells, Phylogica is addressing a major demand within the industry."

Dr Richard Hopkins, Phylogica's Chief Scientific Officer, is presenting the 'Endosomal Escape Trap' technology at two prestigious US scientific conferences attended by leading global pharmaceutical licensing executives: the 23rd American Peptide Symposium, Honolulu, Hawaii, 25 June 2013; and the 8th Next Generation Protein Therapeutics Summit, San Diego, California, 27 June 2013.

Phylogica has filed an international patent application on the new technology with claims covering:

1. Techniques for the specific capture of the rare class of cell-penetrating peptides that escape from endosomes, from its library of over 400 billion peptides.
2. Assays for detecting efficient delivery of therapeutic cargoes or toxic payloads to particular locations within the cells, eg cytoplasm or nucleus.
3. Specific functional assays for detecting the therapeutically relevant activities of Phylomer peptide drug conjugates.

There is a significant requirement for technologies that improve the efficiency of the delivery of large therapeutic molecules such as proteins into cells - more specifically into the cytoplasm and nucleus. Cell membranes are the major impediments to the delivery of therapeutic macromolecules into cells. Although conventional cell-penetrating peptides (CPPs) can be used to inefficiently deliver cell-impermeable therapeutic cargos into cells via peptide-drug conjugates, these conjugates often remain trapped inside 'endosomes' and fail to reach the disease target within the cell from which they remain isolated.

Phylogica's Endosomal Escape Trap enables the efficient identification of Phylomer CPP-drug conjugates that not only deliver the therapeutic payload across the cell membrane, but also efficiently escape from the endosome so that the drug can have a therapeutic effect.

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About Phylogica

Phylogica Limited (ASX: PYC) is a biotechnology company based in Perth, Australia with a world-class drug discovery platform harnessing the rich biodiversity of nature to discover novel peptide therapeutics. The Company was incorporated in 2001 as a spin out from the Telethon Institute for Child Health Research (Perth, Australia) and the Fox Chase Cancer Centre (Philadelphia, USA). The Company's drug discovery platform is based on its proprietary Phylomer[®] libraries containing over 400 billion unique natural peptides, which have been optimised by evolutionary selection to have stable drug-like structures. Phylogica offers fully integrated drug discovery services to the pharmaceutical industry utilising its Phylomer[®] libraries and proprietary screening technologies. Its current partners include Genentech (a member of the Roche Group), MedImmune (the worldwide biologics arm of AstraZeneca), Pfizer and Janssen Biotech, Inc.

About Phylomer[®] Peptides

Phylomer peptides are derived from biodiverse natural sequences, which have been selected by evolution to form stable structures, which can bind tightly, and specifically to disease associated target proteins, both inside and outside cells. Suitable targets for blockade by Phylomers include protein interactions that promote multiple diseases, such as infectious diseases, cancer, autoimmunity and heart disease. Phylomer peptides can have drug-like properties, including specificity, potency and thermal stability, and are capable of being produced by synthetic or recombinant manufacturing processes. Phylomer peptides are also readily formulated for administration by a number of means, including parenteral or intranasal delivery approaches.