PHYLOGICA

BREAKTHROUGH PEPTIDE THERAPEUTICS

Phylogica Peptide Fusion Kills Aggressive Breast Cancer Cells

- *Phylogica's peptide fusions kill aggressive, drug resistant breast cancer cells*
- *Phylomer peptide fusions significantly boost potency of cancer drugs*
- *In vivo evidence of potent Phylomer fusion activity against Myc – a 'holy grail' cancer target*

Perth, Australia March 30 2015: A pilot study by one of Australia's leading breast cancer experts, Associate Professor Pilar Blancafort, a member of the Harry Perkins Institute of Medical Research, shows that Phylogica's cell penetrating peptides (CPPs) linked with the Omomyc drug kill aggressive drug resistant breast cancer cells *in vivo*.

Professor Blancafort also observed that Phylogica's CPP fusion significantly improved the efficacy of existing anticancer drugs including the antibody Cetuximab and the chemotherapy agent Docetaxel. For example, a combination of Cetuximab and a Phylomer CPP-Omomyc fusion was more than three times more effective at killing drug resistant breast cancer cells than either of these agents alone.

Associate Professor Blancafort commented*: "The ability to combine drugs to treat breast cancer is particularly exciting as it has the potential to lower the likelihood of resistance, improve drug activity and reduce chemotherapy side-effects."*

In a final pilot study, Associate Professor Blancafort tested the activity of Phylogica's CPP fusion in an *in vivo* breast cancer model. A substantial reduction in tumour size was observed in tumours injected with Phylogica's CPP fusion when compared to controls. This pilot study needs to be repeated using larger groups to confirm its significance.

Dr Paul Watt, Chief Scientific Officer of Phylogica said: "We were not expecting such a striking result from the pilot study. We believe this is the first time anyone has shown a CPP-Omomyc fusion protein to be active in vivo, as to our knowledge Omomyc has only previously been successfully delivered to tumours using a complex 'gene therapy' approach, associated with significant regulatory hurdles to clinical application."

Phylogica's CEO, Dr Richard Hopkins noted: *"The ability of Phylogica's delivery system to kill cancers from the inside and improve the efficacy of existing drugs is a potential paradigm shift for cancer therapeutics because it opens up the intracellular target landscape to next generation biologics drugs such as proteins."*

Phylogica Limited ACN 098 391 961
PO Box 8207, Subiaco East, Western Australia 6008
100 Roberts Road, Subiaco, Western Australia 6008
Tel: +61 8 9489 7777 Fax: +61 8 9489 7700
www.phylogica.com
ABN 48 098 391 961

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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 from the most structurally diverse libraries available. The Company listed on the ASX in 2005 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 adopt stable drug-like structures. Phylogica offers fully integrated drug discovery services to the pharmaceutical industry utilising its Phylomer® libraries and proprietary screening technologies in exchange for licence fees, milestones and royalties. Partners from discovery alliances within the last 5 years include Roche, MedImmune, Pfizer, Janssen, Cubist Pharmaceuticals and Genentech.

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. Current Phylomer libraries comprise more than 400 billion distinct sequences derived from thousands of protein structure families encoded by biodiverse genomes, representing the most structurally diverse peptide libraries available. Phylomer peptides have also been demonstrated to have world-class cell penetrating ability, enabling them to deliver protein cargoes with unprecedented efficiency.

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