PHYLOGICA

BREAKTHROUGH PEPTIDE THERAPEUTICS

Olivia Newton-John Cancer Research Institute

Combination therapy escalates potency of Phylogica peptides against MYC-driven cancer

Over 7 in 10 cancer cases depend on the cancer gene MYC for survival[1]. Phylogica is developing first-in-class therapies for the treatment of MYC-driven cancers using its proprietary drug discovery/delivery platform.

As part of this drug development program, Phylogica is exploring if combination therapies, targeting different cancer pathways, can increase the potency of its existing best in class MYC therapies.

Phylogica is delighted to announce that:

- *Independent studies by a leading cancer researcher have shown linking a Cell Penetrating Phylomer (CPP) to a novel "pro-death" peptide leads to potent killing of lymphoma cancer cells.*

- *A combination of the "pro-death" peptide and a drug targeting the MYC oncoprotein (OmoMYC), delivered inside cells improves killing activity of each drug by up to 600%.*

- *This combination has achieved the most potent activity ever reported for drugs targeting the MYC oncoprotein.*

- Phylogica and Olivia Newton-John Cancer Research Institute (*ONJCRI) awarded $147K in grant funding to expand the collaboration around novel drug combinations.*

Perth, Australia, 9th December 2015: Phylogica Limited (ASX:PYC) is pleased to announce the outcome from an independent study undertaken by Dr Doug Fairlie, a cancer researcher based at the Olivia Newton-John Cancer Research Institute (ONJCRI) and holding a joint appointment with La Trobe University.

Dr Fairlie showed that delivery of a novel "pro-death" peptide inside cells using Phylogica's cell penetrating Phylomer (CPP) technology resulted in potent killing of lymphoma cancer cells (lymphoma is a type of blood cancer). Similar results were observed when lymphoma cells were treated with a CPP linked to a drug (OmoMYC) targeting the MYC cancer protein.

[1] Cancer research UK available at: https://www.cancerresearchuk.org/funding-for-researchers/how-we-deliver-research/grand-challenge-award/challenge6?wssl=1

Dr Fairlie commented “Phylogica’s cell penetrating Phylomers are the most effective we’ve ever used to deliver peptides inside cells. Our peptides work by turning on “suicide” pathways in cancer cells, causing them to die. This approach has been challenging until now due to the difficulties in delivery of peptides inside of cells where they are active.”

Dr Fairlie’s team also observed that a combination of the “pro-death” peptide and OmoMYC both fused to CPPs improved the cancer killing activity of each drug by up to 600%.

Phylogica’s CSO, Dr Paul Watt said “This study demonstrates the power of our technology to identify novel combinations of drugs that work better together than they do alone. This approach has already yielded the most potent inhibition of the MYC cancer protein every reported – an outcome that has major implications for increasing drug activity and reducing side effects in ways not previously possible.

“The finding that cell penetrating Phylomers linked to OmoMYC can kill lymphoma cells is also notable. Our current goal is to test the activity of our best-in-class MYC inhibitors in an animal model of lymphoma. Confirming that OmoMYC can kill lymphoma cells validates the choice of this animal model for testing the efficacy of drugs targeting MYC.”

In another positive development, Phylogica and ONJCRI have been awarded Research Connections and Research Partnership grants totalling $147K from the Department of Industry, Innovation and Science and La Trobe University respectively to expand their collaboration to develop “Smarter Cancer Drugs”.

Phylogica’s CEO Richard Hopkins commented that “We are very grateful for the funds awarded that recognise the promise of our collaboration. Phylogica is also delighted to be working with the ONJCRI, which is home to many of Australia’s leading cancer researchers and clinicians. The translational capacity of this institute is formidable as it integrates both basic and clinical research with 60-70 clinical trials in progress at any one time.”

About MYC

MYC is one of the first cancer causing proteins (oncoproteins) to be discovered because of its profound effects on the growth and differentiation of cancer cells; yet it has not been successfully targeted in 30 years with conventional therapies. The MYC gene is the most frequently over-expressed cancer causing gene (oncogene) being amplified in more than half of common cancers such as breast, lung, lymphoma, leukaemia and brain tumours. Many of these cancers have an absolute dependence on MYC for continued growth and are therefore described as being ‘addicted’ to MYC. This makes MYC a very attractive drug target avoiding problems of resistance to chemotherapy and addressing a major unmet need.

About ONJCRI (http://www.onjcri.org.au)

The Olivia Newton-John Cancer Research Institute (ONJCRI) is embedded within the inspiring Olivia Newton-John Cancer Wellness & Research Centre. Our mission is to discover and develop breakthrough therapies to treat all cancers for the benefit of patients. Our state-of-the-art laboratories are co-located with patient wards so researchers and clinicians can work together everyday to translate scientific discovery through clinical trial. We are leading the way in the development of immunotherapies, targeted therapeutics and personalised medicine. The ONJCRI is the successor to the world-renowned Ludwig Cancer Research and through a partnership with La Trobe University we are the La Trobe School of Cancer Medicine.

About Phylogica

Phylogica Limited (ASX: PYC) is an oncology-focussed biotech company discovering and developing a new generation of biologics-based therapies against intracellular cancer targets. The Company was originally spin out from the Telethon Kids Institute (Perth, Australia) and the Fox Chase Cancer Centre (Philadelphia, USA). Phylogica controls access to the world's most structurally diverse source of peptides - called Phylomers. The company specialises in Phylomer-based solutions to discover and deliver novel biologics drugs against intractable intracellular cancer targets with unprecedented potencies. Phylogica is advancing its proprietary oncology programmes developing first in class therapies against transcription factors such as MYC and STAT5. These targets play a critical role in many common cancers such as breast, lung, prostate and pancreatic but have proven undruggable with conventional small molecule therapies. Within the last six years the company has entered into discovery collaborations with Roche, Genentech, MedImmune, Pfizer, Janssen and Cubist Pharmaceuticals.

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