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ASIA EDITION

Phylogica gets $400K grant to boost drug discovery

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Singapore: Australia's peptide drug discovery company, Phylogica has received linkage grant from Australian Research Council (ARC) to collaborate with scientists at University of Queensland's Institute for Molecular Bioscience (IMB). The grant, which the University of Queensland applied for in conjunction with Phylogica, will provide funding of $402,614 for a project titled, 'A microfluidic array of Phylomers for rapid discovery of peptide probes and biomarkers.'

In this project, Phylogica and its collaborators at the IMB will exploit the unique structural diversity of Phylogica's Phylomer libraries for biomarker discovery. The partners will jointly develop a single biosensor, displaying tens of thousands of synthetic Phylomers in a parallel format for screening in high throughput.

A universal Phylomer array based on this platform will allow rapid identification of unique signatures for biomarker discovery from any biological sample. Such biomarker signatures may subsequently be used to develop diagnostic tests and to profile patients and their responses to particular treatments.

The ultimate goal of the collaboration is the construction of a universal specificity Phylomer chip. This low-cost consumable device will allow the identification of peptide probes that are specific for any target biomolecule, in a matter of minutes.

This goal has not been achieved with existing approaches (eg. antibody arrays) on a single chip due to the intrinsic biases that are inherent with existing classes of biologics based on one structural family (eg. the antibody variable region). Even comprehensive arrays of antibodies, peptides of random amino acid composition, or protein scaffolds, cannot be used reliably to detect any biological antigen due to this issue of structural bias.

Labelled protein mixtures from abnormal versus corresponding normal clinical specimens could be used to probe a Phylomer chip to identify a disease-specific signature of biomarkers. Similarly, the technology could be applied to detect the emergence of a new signature corresponding to an illegal substance such as in the blood of athletes or to detect a characteristic biomarker profile of relatively common cancers, which are often diagnosed late, such as prostate or colon cancer.

Phylogica's CEO Dr Paul Watt said, "We are delighted to be working with the IMB team at The University of Queensland because of their complementary expertise. Professor Kirill Alexandrov and Dr Yann Gambin are experts in the application of

cutting edge microfluidics and fluorescence detection technologies, in combination with high-throughput and high-content protein characterisation. It is this technological synergy that led us to choose the IMB as our partner for the project. This world-class team has extensive experience of working with industry to achieve commercial objectives."

Dr Gambin commented, "We are looking forward to working with Phylogica on this exciting opportunity to commercialise such a unique product. The diversity of the Phylomer platform offers powerful advantages for development of a universal peptide-based biosensor. The potential applications of this technology are vast in healthcare, industrial and agricultural markets."