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Media Statement

NEXT GENERATION RESEARCH SETS SIGHTS ON DIABESITY

During National Diabetes Week (July 11 to 17), West Australian researchers will continue their mission to analyse the twin epidemics of diabetes and obesity, dubbed 'diabesity', by joining forces with one of the most famous research projects in history, the Busselton Health Study.

The research could offer the needle in the haystack needed to refine a target for developing early diagnosis, prevention as well as a cure.

As part of the work being done at the Centre for Food and Genomic Medicine (CFGM) scientists from Proteomics International are using the latest cutting edge techniques in protein analysis to test blood samples from volunteers suffering from diabetes, including those of the Busselton Health Study.

Leading the team, based at the Western Australian Institute for Medical Research (WAIMR), Proteomics International managing director Dr Richard Lipscombe said super computers and advanced equipment were searching for 'biomarkers' that give clues into how diabetes might be 'switched on' by certain proteins.

"Diseases such as diabetes have complex causes, so our research is focused on better understanding biological processes and identifying proteins in the blood known as biomarkers, which could be used as a diagnostic tool and a predictor of diabetes and its complications," he said.

Dr Lipscombe said the aim of the project was to gather protein 'signature' information from the blood of people living with diabetes as well as those who do not have the condition, and compare the differences.

"By using samples from the Busselton Health Study and the latest technology of proteomics we're analysing the function of a cell to find out how and why things 'switch on' or 'switch off' to uncover what might trigger diabetes and associated complications of the disease," he said.

"By utilizing this world-class resource we have access to a large number of blood samples of people with diabetes and are able to compare and match thousands of proteins to look for signals which might signify the onset of diabetes and possibly identify those at high risk."

CFGM director and endocrinologist Professor Peter Leedman said this project represented a significant technological advance in the field of diabetes research.

"If we can pinpoint what it is that triggers diabetes, we would have a huge advantage in being able to identify those most likely to develop the condition, giving them a head start in being able to change lifestyle factors to help avoid onset or serious complications," he said.

"We would also be a big step ahead in looking towards prevention of diabetes and early warning of those at risk of developing the devastating complications of the disease – this work could give us the 'needle in the haystack' to focus our research efforts on being able to intervene and dramatically change a patient's future.

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**MEDIA CONTACT: Sarah Hayward, WAIMR Media Consultant
M: 0401 141 483, O: 9381 8237**

“Biomarkers have already been used to develop new treatments for other serious health concerns such as cancer, and now we have turned our focus to improving health outcomes for diabetes.”

Dr Lipscombe said the scientific field of ‘proteomics’ was taking biological research to the next level.

“Proteomics looks closely at proteins responsible for how each cell operates and functions, so it has huge potential to unlock clues to hundreds of health conditions which it can do on an industrial scale not seen before” he said.

According to the latest Australian Institute for Health and Welfare’s biennial snapshot of the country’s health, type 2 diabetes is projected to overtake cancer and heart disease as the biggest drain on health services by 2023.

An estimated 275 Australians develop diabetes every day.

1.7 million Australians have diabetes, but up to half of the cases of type 2 diabetes remain undiagnosed.

The total financial cost of type 2 diabetes is estimated at \$10.3 billion.*

Led by Proteomics International, the project is a collaboration between multiple clinical research groups, including the Fremantle Hospital Diabetes Research Group, Royal Perth Hospital, Princess Margaret Hospital, the University of Western Australia, WAIMR and the CFGM.

The project has been funded by the Western Australian State Government Centre of Excellence programme.

The CFGM will host a free public symposium on Friday August 6 at the University Club of WA highlighting the past four years of its research into the twin epidemics of diabetes and obesity.

Guest speakers from the CFGM as well as the University of Sydney’s Professor Ian Caterson and CSIRO Preventative Health Flagship Director Dr Richard Head will discuss cutting-edge research and initiatives to prevent and manage these twin epidemics.

Bookings are essential.

For more information or to reserve a seat, please email carolynw@waimr.uwa.edu.au or call (08) 9224 0338 by Friday July 30.

BACKGROUND INFORMATION

The Busselton Health Study

The Busselton Population Medical Research Foundation's "Busselton Health Study" is one of the longest running epidemiological research programs in the world, having been in operation since the 1960's.

Residents of the WA Southwest coastal town of Busselton have been involved in a series of health surveys and have donated genetic samples since 1966.

To date, more than 16,000 men, women and children of all ages have taken part in the surveys and helped contribute to our understanding of many common diseases and health conditions.

-MORE BACKGROUND INFO CONTINUES-

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Proteomics International Pty Ltd

Proteomics International is both a drug discovery company and contract service provider, focused on providing quality analytical services to the biological research market and on developing value from protein drug discovery.

Proteomics International combines the most advanced high throughput mass spectrometry instrumentation and a team of qualified scientists with proven expertise in protein and peptide chemistry.

The company has two focal research activities; analysis of venoms using its proprietary Bioven process, and the discovery and use of biomarkers from a variety of tissue sources.

Skills developed from these research programs are incorporated into the sophisticated suite of specialist contract research techniques provided to clients.

Proteomics International is based in Perth, Western Australia and has established itself as an industry leader in the delivery of contract research and lead molecule discovery services in the Asia Pacific region.

Centre for Food and Genomic Medicine (CFGM)

The CFGM is a world-class research facility that harnesses the power of plants and genetics to tackle the twin epidemics of diabetes and obesity, known as "diabesity".

Established in 2006 with \$4.5 million seed funding from the Government of Western Australia, the Centre brings together scientists from the biotechnology, medical research, agriculture and food technology sectors to investigate new ways of beating these growing health conditions.

The CFGM's approaches to improve health focus on two main areas:

- Preventative measures by developing better food using genomic technology; and
- Developing better treatments based on understanding the genetic causes of disease, also utilizing genomic technology.

The CFGM is based at the Western Australian Institute for Medical Research (WAIMR).

Other partners include the major Universities and Hospitals in WA, CSIRO Plant Industry, the Telethon Institute for Child Health, the WA Department of Food and Agriculture, and biotech company Proteomics International.

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*Source: Diabetes Australia

<http://www.diabetesaustralia.com.au/en/Understanding-Diabetes/Diabetes-in-Australia/>

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