

PANCREAS
CELLS RESISTANCE **INSULIN**
 METABOLISM **STAGES** **ISLETS** **MONITOR**
GLUCOSE **WEIGHT**
DIABETES **CONGENITAL** NERVE
 ENDOCRINE WELL **DIABETES** TYPE HEALTHCARE
 ACUTE **SYMPTOMS**
HYPERGLYCEMIA **COMPLICATIONS**
 KETOACIDOSIS **SUGAR** **RESPOND** **INSULIN** PANCREAS
ADULTS **INJECT** **MELLITUS**



INNOVUS

CONTACT

OFFICE: +27 (21) 808 3826
 FAX: +27 (21) 808 3913
 EMAIL: info@innovus.co.za

A Method of Treating Abnormal Blood Clotting Associated with Type 2 Diabetes Mellitus

Innovus Technology Transfer (PTY) Ltd is Stellenbosch University's wholly-owned technology transfer company. Contact Anita Nel, Innovus Chief Executive Officer, on (021) 808 3826 or send an email to ajnel@sun.ac.za for more information.



The use of lipopolysaccharide (LPS)-binding protein (LBP) to treat Type 2 Diabetes Mellitus (T2DM) by reducing hypercoagulation (exaggerated blood clotting) commonly associated with this disease.



INNOVUS

BRIEF DESCRIPTION

The use of lipopolysaccharide (LPS)-binding protein (LBP) to treat Type 2 Diabetes Mellitus (T2DM) by reducing hypercoagulation (exaggerated blood clotting) commonly associated with this disease.

UNIQUE CHARACTERISTICS

The researchers responsible for the development of this innovation have recently shown that there is a bacterial component involved in the aetiology of Type 2 Diabetes Mellitus. Multiple research studies have shown that the pyrogenic bacterial wall component, LPS (from the outer membrane of gram negative bacteria) is a potent inflammagen (elicits an inflammatory response) that causes hypercoagulation in a multitude of inflammatory conditions. LBP naturally occurs in the human body, and in diseases such as T2DM, the production of LBP is reduced. Consequently, in the context of systemic inflammation, excess LPS cannot be bound and cleared to a sufficient degree, resulting in a hypercoagulable state. This innovation proposes the use of LBP to treat hypercoagulation in inflammatory conditions such as T2DM.

TARGET MARKET

This innovation is targeted to the following industries:

- Pharmaceutical companies
- Biotechnology companies
- Clinical trials companies

VALUE PROPOSITION/BENEFITS

Inflammation contributes to the development of T2DM. Hypercoagulation is an important hallmark of inflammation, and reduction of this exaggerated clotting of blood, through the use of LBP, has the potential to limit the development of various comorbidities (cardiovascular complications; pulmonary embolism; thrombotic ischemic stroke, etc.) in patients afflicted with T2DM. Additionally this technology can be used to prevent/reduce chronic, systemic hypercoagulation which ultimately results in the impairment of microcirculation and vascular disease.

This innovation provides a limited, non-invasive treatment option for hypercoagulation associated with conditions, such as T2DM, that are inflammatory in nature.

TECHNICAL DESCRIPTION

Type 2 diabetes mellitus has a massive impact on global health through its contribution to cardiovascular disease and mortality, and in 2011 the International Diabetes Federation suggested that each year 5 million deaths are directly attributable to T2DM, which is a greater burden than HIV/AIDS, tuberculosis and malaria combined.

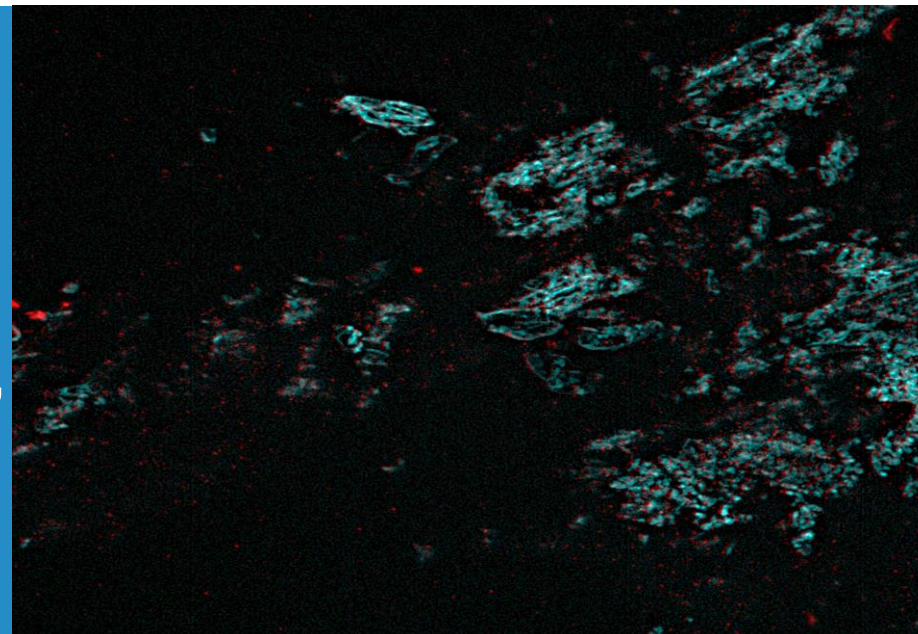
Our researchers have recently shown that LBP has the potential to reverse hypercoagulation in T2DM, amongst other conditions. Using scanning electron microscopy (SEM) and confocal microscopy, the researchers showed that platelet-poor-plasma from subjects with T2DM had a much greater propensity for hypercoagulation and for amyloidogenesis, and that these could both be reversed by LBP treatment. These data demonstrate that T2DM can be treated by administering LBP to patients suffering from this disease.

PRINCIPAL RESEARCHERS

Professor Resia Pretorius, Department of Physiological Sciences, Faculty of Science, Stellenbosch University

Professor Douglas Kell, School of Chemistry & Manchester Institute of Biotechnology, University of Manchester

LBP has the potential to prevent/reduce hypercoagulation associated with Type 2 Diabetes Mellitus, which results in the development of various co-morbidities, such as thrombo-embolic ischemic stroke, heart attacks, deep vein thrombosis, lung embolisms ,etc.



INNOVATION STATUS

A PCT application, with application number PCT/IB2017/056115, has been filed for this innovation.