KiwiNet

Kiwi Innovation Network

EMERGING OPPORTUNITIES

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ABOUT KIWINET

The Kiwi Innovation Network (KiwiNet) is a consortium of Universities, Crown Research Institutes and other publically funded research organisations who are dedicated to taking a collaborative approach to research commercialisation. Together these research organisations represent a total combined annual research expenditure of over $500 million and represent over 66% of the publically funded researchers in New Zealand.

KiwiNet's role is to empower people who are involved in research commercialisation by helping them to access the tools, connections, investment and support they need. By collaborating on projects, combining capability and sharing networks, we at KiwiNet believe that we can better leverage the limited resources available for commercialisation and help each another improve commercial outcomes for New Zealand.

KiwiNet is funded from the shareholder research organisations and the Ministry of Business, Innovation and Employment.

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ABOUT THIS DOCUMENT

This document provides an overview of some of the recent investments made by the KiwiNet Investment Committee (IC). The KiwiNet IC invests PreSeed Accelerator Funding (PSAF) provided by the Ministry of Business, Innovation and Employment (MBIE). This PSAF funding is targeted at developing research discoveries to the point where they are “investor ready”.

These projects are very early stage and may not yet be developed to the point where they can secure private investment. However, each project has had some targeted due diligence carried out as part of preparing a business plan for presentation to the KiwiNet IC.

The purpose of this document is help potential investors and business partners have more visibility of the opportunities that are emerging from research organisations. We encourage people who are interested in learning more about these projects to contact KiwiNet and we’ll introduce you to the relevant research organisation.

The project may not be ready for investment yet, but if you become involved early on, you may be able to help guide the project to become an attractive investment proposition in the future.

RAPID COWSIDE ENDOMETRITIS DIAGNOSTIC

waikatolink
University of Waikato Commercialisation

An exciting agricultural project from WaikatoLink looks to provide rapid identification of cows with subclinical endometritis (SCE).

THE PROBLEM

SCE is a disease which delays conception in cows, reducing days in milk and in turn economic returns to the farmer. Conservative estimates suggest the cost to the NZ economy as a result of SCE is around $50 million NZD p.a. in lost milk production, and in the US up to an estimated $665 million USD p.a.

There is currently no cowside diagnostic for identifying SCE in cows.

SOLUTION

The PSAF project approved by the KiwiNet Investment Committee seeks to develop a relatively cheap method for the diagnosis of SCE in cows. Through early detection of SCE, it can be treated earlier thereby minimising the days of lost milk ultimately resulting in better economic return from the dairy industry.

By solving this problem WaikatoLink are looking to increase milk production efficiency and export earnings, while boosting the profile of the NZ dairy industry through optimal animal welfare practices.

COMMERCIAL OBJECTIVE

The first stage of the commercial project looks to get to a proof of concept stage for the rapid cowside diagnostic, to achieve an investor ready stage for the New Zealand market.

WaikatoLink will look to align with a distributor who already has a high level of market penetration into the animal health sector, to establish distribution agreements within New Zealand.

WaikatoLink will partner with Aldera Ltd as a commercialisation partner for the technology. With their established relationships in the dairy diagnostics space they will be able to provide strong channels to market for this product.

Please contact KiwiNet and we will put you in contact with this organisation for more information on this development.

SILVER NANOPARTICLES FOR PREVENTION OF TOOTH DECAY

OTAGO INNOVATION
A UNIVERSITY OF OTAGO COMPANY

An advanced formulation to prevent tooth decay developed in collaboration by Otago University's School of Dentistry and Department of Chemistry.

THE PROBLEM

Secondary caries is the most common reason for dental restoration replacement. Given that 280 - 350 million fillings are placed every year in the US, Europe and Australia, increasing the longevity of restorations is a human oral health priority. Antimicrobial silver preparations, including silver diamine fluoride (SDF), have been used for the prevention of tooth decay since the early 1970s. However, existing liquid silver products cause permanent dark staining of the teeth, limiting their usefulness.

SOLUTION

Researchers at the University of Otago have created a silver NanoParticle ("NP") formulation for application on dentine without staining the teeth. It kills bacteria associated with caries to protect against development of secondary caries beneath restorations.

Silver NP formulation: The micelle-stabilised silver colloid preparation critically controls the size and shape of the silver nanoparticles, whilst keeping silver ions apart to prevent staining. The resultant advanced formulation provides smaller-sized nanoparticles with enhanced antimicrobial activity that are ideally shaped to reach deep into the pores of the dentine. In vivo studies indicate the silver nanoparticles bind efficiently to both the organic component of dentine (principally collagen) and to the inorganic component (hydroxyapatite).

Silver NP formulation use: The silver NP formulation can be included after drilling in all standard filling procedures. It can be applied either to sound, freshly-cut and cleaned dentine surfaces, or directly onto carious tissue, in cases of deep decay. The silver NP formulation is a colourless, lightsensitive liquid, which may be packaged in dropper bottles or single-use foil packages with a brush attached. About two drops (0.3-0.6 µg silver content) is applied to the drilled tooth with a syringe or micro brush, and allowed to soak in for one minute. After washing, the entire restorative procedure continues as usual.

INVESTMENT OPPORTUNITY

Manufacturing and material costs for the silver NP formulation are low. At a retail price US$1.50- $6.50 per filling, the formulation has a market potential of US$525 - $2,275 million across US, Europe and Australian markets. Otago Innovation is now seeking collaborators and partners with expertise and relevant resources to guide further translation into the market.

IP Position: The intellectual property is protected within PCT application PCT/NZ2014/000006. Inventors: Dr Carla Meledandri and Dr Don Schwass of the University of Otago.

BIOPESTICIDE FOR PSA-V

Plant and Food are working on development of a novel biopesticide for Psa-V, to protect export crops of New Zealand Kiwifruit.

THE PROBLEM

Psa is a plant bacterial disease that aggressively attacks kiwifruit, resulting in crop loss and vine death. It was been present in NZ for 3 years, and currently control options are limited. The damage from Psa to New Zealand Kiwifruit crops has been well documented, particularly in the Bay of Plenty. An economic review in 2012 estimated the cost of Psa could be as high as $400M over the next 5 years.

SOLUTION

Plant and Food have developed a novel technology for mitigating the symptoms of Psa. The active components of the formulation are food-grade GRAS (generally recognised as safe) products, meaning no issues of impact on human health. Furthermore they are unlikely to have any impact on bee health (this is to be tested). Together this technology is a promising, unique tool as part of a package to assist in the Kiwifruit industries Psa crisis.

COMMERCIAL OBJECTIVE

The primary objective for Plant and Food with this project is to create a tool for combating Psa, and get it into the hands of NZ kiwifruit growers as fast as possible. Once this has been realised, Plant and Food, with Zespri will look to secure a commercialisation pathway to territories outside of New Zealand as appropriate .

To achieve a rapid introduction to the NZ market, Plant and Food will be looking for a commercial partner with:

- Expertise in plant protection and registration of biological agents
- A good reputation and established distribution channels
- A network for good customer support

When this primary objective has been achieved with the correct partner, Plant and Food will begin mapping the path to the international market to capture returns to New Zealand from this technology.

Please contact KiwiNet and we will put you in contact with this organisation for more information on this development.

WETOX BIO WASTE MANAGEMENT SYSTEM

viclink

WETOX is a technology out of the University of Victoria that seeks to provide an economic and environmentally friendly way of disposing of waste sludge products.

THE PROBLEM

There are a number of acute issues associated with the disposal of waste sludge. The receiving environment and particularly waterways are stressed, valuable resources are being wasted and disposal sites are becoming scarce. These issues are global and increasing. The Wetox technology addresses this by reducing sludge volumes by over 95% and receiving re-usable constituents.

SOLUTION

WETOX provides a complete onsite disposal option which separates wastewater products into clean water and re-usable resources, in a competitive and environmentally acceptable way.

COMMERCIAL OBJECTIVE

The overall commercial goal for Viclink on this project is to prove critical technical and economic aspects of the WETOX system, to enable external investment from the private sector into this technology.

The path to achieving this is through the PSAF funded project, approved by the KiwiNet Investment Committee. By validating and fine tuning the operating conditions for the Wetox process while also proving a viable economic model, WETOX will be in a position to form business partnerships and implement their commercialisation plan.

Once proven, WETOX will seek to expand overseas where it will be in a position to generate export returns to New Zealand through leasing the technology internationally to companies and organisations that process organic sludge.

Please contact KiwiNet and we will put you in contact with this organisation for more information on the development of this technology.