

## TECH OFFER

### Next-Generation Microbiome Analytics For Water Quality And Early Disease Detection



#### KEY INFORMATION

TECHNOLOGY CATEGORY:

Life Sciences - Agriculture & Aquaculture

Life Sciences - Industrial Biotech Methods & Processes

Life Sciences - Biotech Research Reagents & Tools

Infocomm - Healthcare ICT

Sustainability - Food Security

TECHNOLOGY READINESS LEVEL (TRL): **TRL9**

COUNTRY: **SINGAPORE**

ID NUMBER: **TO174518**

#### OVERVIEW

Aquaculture is one of the most important sources of protein and nutrition for the rising global population. Water quality related issues and diseases caused by viruses and bacteria are the biggest challenges that the aquaculture industry faces today. Pathogen infestation can cause serious diseases and loss of fishes, shrimps, and mollusks. This impacts the overall yield, resulting in huge economic losses.

Current pathogen detection methods are slow, imprecise and do not identify unknown pathogens. These methods neither diagnose mystery ailments nor provide any visibility into the very foundation of health in any aquatic environment: the marine microbiome. Effective management of waterborne diseases and water quality requires a holistic understanding of the microbial consortia in the aquatic setting.

This technology provides next-generation metagenomic insights in the microbiome and further data-driven solutions provided with the company's proprietary AI algorithms.

The technology provider is seeking partnerships with aquaculture players who are interested in applying microbiome analytics to their current applications for decreasing operating expenses and increasing yield.

## TECHNOLOGY FEATURES & SPECIFICATIONS

This technology involves a range of easy-to-use self-sampling kits which provide end users with all tools and reagents required to take, preserve, and ship a sample in for next-generation sequencing (NGS) and analysis. Further in-depth analytics can be provided with proprietary auto-sampling equipment and larger sets of samples.

This technology further comprises an AI-driven microbiome analytics platform which provides insights into the aquatic microbiome conditions, imbalances, and diseases. Such insights can allow end users to make appropriate targeted mitigation planning.

## POTENTIAL APPLICATIONS

The technology is applicable to any industry which relies on good water quality and good disease management, including:

1. Aquaculture
2. Agriculture/hydroponics
3. Industrial water
4. Urban water

## UNIQUE VALUE PROPOSITION

Microbiome analytics offers a number of benefits, including:

1. Early disease detection
2. Pathogen ID of both known and unknowns
3. Test quarantined stock for parasites and nuisance species
4. Track overall system health during grow out
5. Optimise inputs including probiotics and feeds
6. Targeted disease management
7. Water Doctoring and diagnosis of mystery ailments
8. Waterbody planning and prep prior to grow out
9. Decrease operating expenses
10. Increase yields