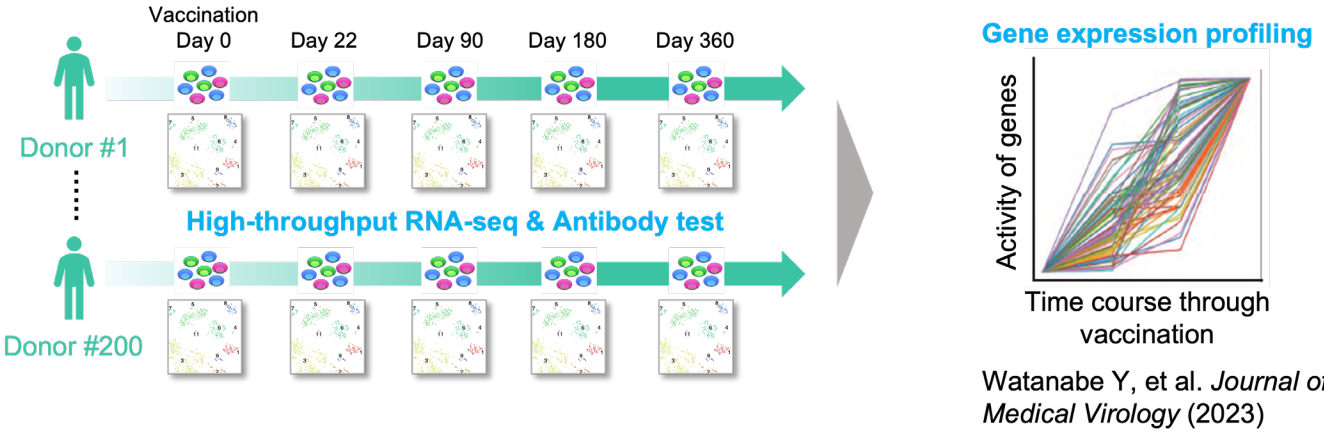
KING SKYFRONT
Kawasaki INnovation Gateway at SKYFRONT

i-Newsletter

TOKOMACHI Lifescience Cluster Division
殿町キングスカイフロントクラスター事業部

2023autumn

Knowledge Palette's gene expression profiling technology contributes to new discoveries!



Watanabe Y, et al. *Journal of Medical Virology* (2023)

Research on New Corona Vaccine in Kawasaki City

In July 2023, a press release was issued by Knowledge Palette, Inc., Kawasaki Physicians Association, Kawasaki Rinko Hospital, and St. Marianna University School of Medicine, under the title "We have discovered a group of genes affected by multiple doses of corona vaccine".
We interviewed Dr. Hiroki Danno, Co-founder, Representative Director & CEO and Dr. Masakazu Fukuda, Co-founder, Representative Director & CTO of Knowledge Palette, Inc., headquartered in King SkyFront, about Knowledge Palette's areas of expertise, strengths, prospects, and the background leading up to the press release.

What does Knowledge Palette aim to contribute to health?

Knowledge Palette, Inc. was founded in 2018 and is a startup company currently in its fifth year.
The company is growing through R&D and collaborative research, and it is a life science and healthcare company currently working on approximately 20 projects. Our specialty is the world's most accurate and fastest profiling of cellular big data. Quartz-Seq2 (gene expression profiling) technology was developed at RIKEN in 2018. In 2020, we won first place in "gene detection performance, marker identification performance" and "overall score" in an international benchmark by the Human Cell Atlas project and were recognized globally as the gene expression profiling technology with the highest accuracy among 13 competing technologies. Currently, as the next step, our R&D has the aim of controlling cells. Using highly accurate gene expression big data, we are working to control quality at the cell manufacturing stage by diagnose and control cell conditions. For cells used in regenerative medicine, in particular not only is "cell growth" but also "cell properties (safety and efficacy)" are important, and higher quality and more stable cells are required.

What is the reason to issue a press release？

The research project presented at a press release was motivated by an information exchange event held at the King SkyFront. While the emergency approval of the corona vaccine has saved many lives, there is no history of administering large amounts of RNA material into the body. Therefore, we started this research. Nearly 200 medical workers in Kawasaki City took blood samples and analyzed samples before and after the second vaccination, and before and after the third booster vaccination.
As a result, long-term changes in genes related to immunity were suggested. The results of this study were peer-reviewed by experts and were published in the Journal of Medical Virology.
Knowledge of Palette's technology for transcriptome analysis (visualization of gene and-cell function) led to the success of this study and has motivated ongoing research.

Dr. Fukuda, CTO and Dr. Danno, CEO

Click here for news release

Cellab Healthcare Service CO., LTD. began cell manufacturing contract business

In June 2023, Cellab Healthcare Service CO., LTD., a wholly owned subsidiary of DAI-DAN CO., LTD. began a cell manufacturing contract business at the cell culture and processing facility "Cellab Tonomachi".

Cellab Tonomachi

The company obtained a manufacturing license for regenerative medicine products at Cellab Tonomachi in May 2023 and has acquired an exclusive license to manufacture clinical trial products and the non-exclusive license to manufacture commercial products for the cancer immune cell therapy product “GAIA-102 (NK-like cells)”. This is currently undergoing clinical research by GAIA Biomedicine, a start-up company from Kyushu University, and has started contract manufacturing of GAIA-102 clinical trial product. With this contract, the DAI-DAN CO., LTD. Group will make a full-scale entry into the cell manufacturing contract business and thus expand its share of the market.

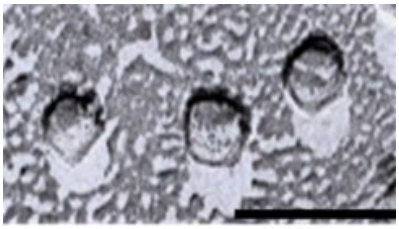
Click here for Cellab Healthcare Service news release

NANOEGG® Research Laboratories, Inc. began collaborative research using “Nano capsule Technology”

In August 2023, NANOEGG® Research Laboratories, Inc. began collaborate research of medical ophthalmic products using their own “nano capsule technology” with Rohto Nitten Co., Ltd of the ROHTO PharmaceuticalGroup.

Spherical formulations with a particle size of several 10 nm (1 nm = one billionth of a meter) are called “nano capsules” by NANOEGG and they have the technology to achieve a drug content of nearly 100% in these capsules.

In addition, by coating the nano capsules with a thin film of amorphous inorganic material, a mechanism (drug delivery system) is realized in which the drug inside the capsule is gradually released. In this collaborative research, NANOEGG aims to apply “nano capsule” technology for medical ophthalmic products and eye drops.

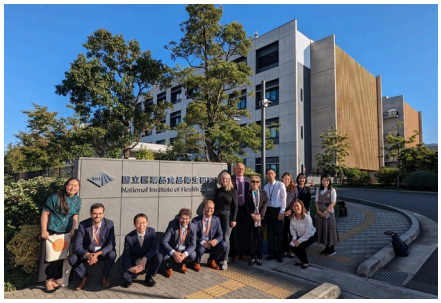


Electron micrograph photo of nano capsule

Click here for NANOEGG news release

Visit by the Embassy of the Kingdom of the Netherlands and the Dutch delegation of the Regenerative Medicine Crossing Borders

On October 13, 2023, the members of the Embassy of the Kingdom of the Netherlands and the Dutch delegation of the Regenerative Medicine Crossing Borders (RegMed XB) visited King SkyFront. The purpose of their visit was to find out about regenerative medicine initiatives in Japan and explore collaborative business opportunities through interaction with local institutions.



They visited the open lab developed by the Kanagawa Prefectural Government through public-private partnership in the Life Innovation Center and the analytical instruments for in-house displays in Shimadzu Tokyo Innovation Plaza.

They also visited the division of medical devices National Institute of Health Sciences(Director, Eiichi YAMAMOTO, Ph.D.) and the division of cell-based therapeutic products National Institute of Health Sciences(Director, Satoshi YASUDA, Ph.D.) and active discussions took place.

The event “Building Startup Community in King SkyFront” was hosted by iCONM with BioLabs

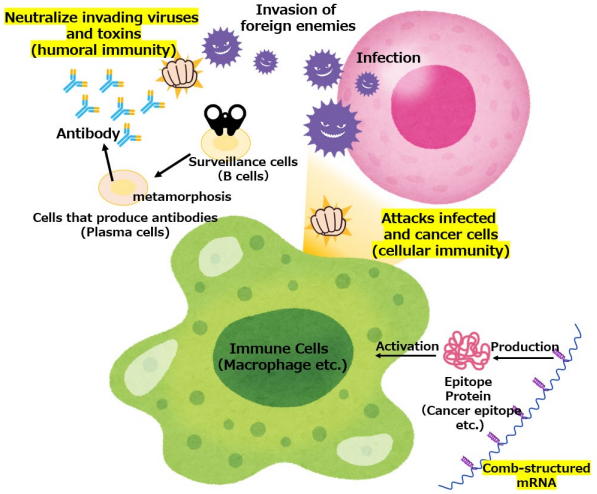
“iCONM in collaboration with BioLabs”, an incubator for biotech startups, held a networking event on October 12, 2023. With a lab-tour of iCONM, they had a panel discussion with 4 panelists including Dr. Johannes Fruehauf, CEO of our partner “BioLabs”, and discussed on “What community helps startup’s growth”. 60+ participants including biotech-startups, VCs, and other ecosystem builders joined the discussion and expanded their networks.

Click here for Linkedin

Innovation Center of NanoMedicine

About a comb-structured mRNA vaccine

The worldwide outbreak of the new coronavirus attracted attention to “mRNA vaccine”, the first preventive vaccine in human history, which can be developed in a short period and immediately applied to the newly generated virus. It was the subject of this year‘s Nobel Prize. This vaccine eliminates viruses by producing a large number of antibodies that recognize and eliminate the spike proteins on the surface of the virus. However, antibodies are ineffective against large foreign substances (which the body wants to eliminate) such as infected cells and cancer cells. Prof. Satoshi Uchida, iCONM’s Principal Research Scientist (Professor of Tokyo Medical and Dental University) and his group have developed a therapeutic vaccine that can eliminate cancer cells by comb-structured mRNA, and demonstrated its effectiveness in a mouse model of malignant melanoma. The results were published in the online version of the Proceedings of the National Academy of Sciences of the United States of America (PNAS) on July 10, 2023.



Click here for PNAS website

Update of the King SkyFront pamphlet and website for the 2023 – 2024 edition

We have updated the King SkyFront pamphlet and website for the 2023 – 2023 edition.
Please visit the website at the following link for more information.

Click here King SkyFront website

For subscription

Keep you updated with the latest news from KING SKYFRONT
Please apply here for subscription. i-Newsletter comes out quarterly and free subscription.
https://ws.formzu.net/fgen/S11051741/

Date of issue: November 2023
Publisher: TONOMACHI LifeScience Cluster Division
Kawasaki Institute of Industrial Promotion
Mail : pr-ksfcl@kawasaki-net.ne.jp