

Metagen, Inc. , Celebrating 10th Anniversary



Shinji Fukuda, President and CEO

Metagen, Inc. is engaged in R&D and business development related to the gut environment. On March 18th, 2025, the company celebrated its 10th anniversary. We had the opportunity to hear from President and CEO, Dr. Fukuda about his insights into the company's business and its future outlook.

About Metagen, Inc.

Metagen, Inc. is a leading company aiming to realize “zero-disease” by appropriately designing the gut environment based on advanced science. The gut environment varies from person to person and has been reported to influence the effectiveness of drugs, foods, and supplements. With the mission of “Make gut environment-based healthcare a new standard,” we are working to bring our research results into practical use in society through our unique concept of “Gut Design,” which involves scientifically controlling the gut environment to propose optimized healthcare approaches tailored to each individual.

☆Activities at KING SKYFRONT

Our base at KING SKYFRONT is dedicated to R&D.

To achieve our vision of “zero-disease,” advanced technology and science are essential. This lab is the place where the seeds of such innovative technologies are cultivated. We hope that the innovations born here will soon be put to use in your daily lives.

☆About the “Brown Gem”

Stools contain valuable information about an individual's gut microbiota (gut flora) and metabolites, as well as microbial resources with the potential to cure incurable diseases. This is the value that you may not have noticed. We refer to stools as “Brown Gem” to signify that they are as valuable as a precious gem.

Our core technology is the comprehensive analysis of the genetic information of the gut microbiota and the various metabolites produced by those microbiota contained in the “Brown Gem.” By

integrating both genetic analysis (metagenomics), which investigates the types and quantities of gut microbiota, metabolite analysis (metabolomics), which examines the types and quantities of metabolites, and applying bioinformatics to integrate and analyze the vast amounts of data obtained, we have established a unique method for evaluating the gut environment, “Metabologenomics®” and we are advancing R&D with the aim of controlling the gut environment. The name “Metabologenomics®” is the root of our company name, “Metagen, Inc” In addition, at our group company Metagen Therapeutics, Inc., we invite individuals to become stool donors to provide high-quality “Brown Gems.” Donors are given a stipend for each donation, which serves as part of our cultural effort to recognize the value of stools. At present, few people are aware of this value, but stool is actually a precious microbial resource that may one day help save humanity. At Metagen Therapeutics, Inc. we aim to apply insurance coverage and develop drug therapies by transplanting stools collected from approved donors to treat diseases and restore health.



The team and Brown Gem

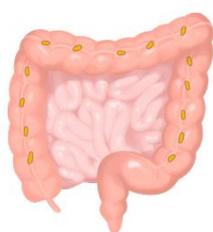
Now, only about 5% of applicants pass the donor screening process. We encourage you to try our online screening.



[Click here for details](#)

☆About our LOGO

The logo is designed with the two letters "MG" from "Metagen" to mimic the shape of the gut. When we arranged the "MG" vertically instead of horizontally, it felt exactly right, so we decided on this identity. Among the options, we also considered designs with a mouth or one with a jewel placed in the center, however, we settled on the current simple logo in the end.



A logo shaped like intestines

Communicating the Importance of Gut Environment to Society

As a scientist, I am conducting research while working as an entrepreneur to implement our research findings into society. The reason I am doing both is because what has been revealed in the scientific field has not been sufficiently conveyed to the general public.

For example, are you familiar with short-chain fatty acids, which are beneficial components produced by gut microbiota? The importance of this component has been known in the field of gut microbiota research for over 25 years, and even as a student myself at that time, it was a well-known fact. However, a recent public awareness survey showed that only 16% of the general public were aware of it. I believe that this information gap between academia and society is a challenge that must be addressed to achieve a "disease-free" world. At the same time, to advance the social implementation of the latest scientific discoveries, I believe it is the duty of scientists to clearly, accurately, and widely communicate their importance to society. To achieve this, Metagen has created Onakademy, an owned-media platform, to serve as a tool to communicate the importance of gut microbiota and the latest scientific findings. We also established the Short-Chain Fatty Acid Promotion Association, a public interest organization, to raise awareness about the value of short-chain fatty acids and expand recognition through various media platforms. We want to create a situation when someone wonders, "What are short-chain fatty acids?" they can easily find information and gain an understanding. Over the past 10 years, we have been working on such initiatives to create an informed, healthier society.



Owned media [onakademy]



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Long-Awaited Social Implementation

After obtaining my degree at Meiji University, I conducted research at RIKEN (The Institute of Physical and Chemical Research). The very first paper I wrote was about *Bifidobacterium*. Through my research, I discovered that certain strains of *Bifidobacterium* possess a specific gene to produce large amounts of acetic acid—a type of short-chain fatty acid—in the gut, which acts on gut epithelial cells and ultimately helps suppress infection by enterohemorrhagic *Escherichia coli* O157:H7. There are several types of *Bifidobacterium*—some with beneficial functions and some without. This finding was published in the scientific journal *Nature*. In addition, it had already been recognized at that time that gut environments vary from person to person. Considering this evidence, I realized the necessity of personalized approaches based on each individual's gut environment.

I proposed this idea to several companies, but while they all listened, none of them were willing to pursue it as a business. The reason was simple: if companies had to offer multiple product variations instead of just one standard version, it would increase production costs, and from a conventional business perspective, it did not seem profitable.

This was in 2010 and then I thought, "If no one else is going to do it, I'll just have to do it myself," and in 2015, I founded Metagen. From there, we conducted collaborative research with many companies, and in 2020, we began a joint development with Calbee, Inc. In 2023, we launched "Body Granola," a personalized granola tailored to individual gut microbiota. Then, in 2024, "Inner Garden", a personalized beverage service by Meiji Co., Ltd., was launched.

These products can only be purchased after having one's gut microbiota tested, ensuring that each person consumes food optimized for their specific gut environment.

Although it took 13 years to realize the vision of delivering personalized food based on the gut microbiota, I also realized that if you persist for about 10 years, you can bring what you believe to be scientifically correct to the world.

Persisting and continuing without giving up is extremely important.

Moving forward, we will continue developing such products and aim to create a healthier society starting from the gut.

The Society Metagen Aims to Create

Our mission is to build a society where personalized services tailored to each individual's gut environment are the new standard. Since it is scientifically proven that the gut microbiota affect the efficacy of medications, foods, and supplements, we believe that keeping record of your own gut microbiota will contribute to their health 20 to 30 years from now. While some aspects of gut microbiota may still be unknown today, we expect many of them to be uncovered over the next 20 to 30 years. Therefore, it is extremely important to understand your own gut environment while you are still healthy—because once you become ill, your gut environment changes. In addition, since even healthy individuals have different gut microbiota, using someone else as a reference is not meaningful. Based on scientific evidence, we aim to eliminate disease through personalized nutrition that matches each person's unique gut microbiota.

Metagen Therapeutics Unveils New Logo and Brand Identity

Metagen Therapeutics, Inc. launched a new logo and brand identity, driven by its purpose of “living up to the hopes of patients through microbiome science,” and its focus of creating a Health Sharing Community centered on gut microbiota donation.

The logo redesign is built around two key elements.

① New Perspective: Approaching the gut microbiome from a new perspective to drive innovation in medicine and drug discovery.

The design reflects our commitment to re-examining gut microbiota—organisms that predate humanity itself—through the lens of technology and science. By approaching gut microbiota from a new perspective, we aim to drive innovation in medicine and redefine the meaning of health through stool donation.

② Torch: Building a new community where health is passed from person to person.

The torch represents a movement where the value of gut microbiota is widely shared, fostering a culture where health is passed from person to person. This symbolizes our vision of expanding the gut microbiota donation system and creating opportunities for broader participation in this transformative healthcare approach.



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Confirmation of the Safety of iPSC-Based Spinal Cord Injury Treatment at Keio University

A research team led by Dr. Hideyuki Okano, Director of the Center for Regenerative Medicine at Keio University, and Professor Masaya Nakamura of the Keio University School of Medicine, has announced the completion of follow-up



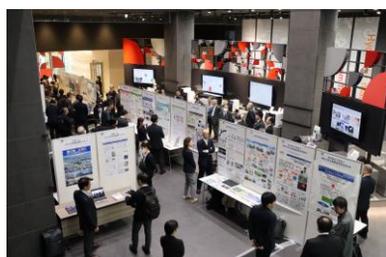
observations for all four planned cases in a clinical study involving the transplantation of iPSC cells derived Neural progenitor cells into patients with subacute-stage spinal cord injuries. As a result, the safety of the cell transplantation was confirmed, and partial neurological improvements were observed, including one patient who regained the ability to stand. The team now aims to conduct a clinical trial to rigorously evaluate the treatment's effectiveness. The upcoming clinical trial is scheduled to be conducted by K Pharma Inc., a Keio University-based venture company. This development has been reported in the scientific journal Nature NEWS.

[Click here for details](#)

Event Report

King SkyFront Science Forum 2024 (March 14th, 2025)

The Forum serves as a platform for scientists and engineers engaged in diverse fields of R&D at King SkyFront to share information and technologies actively and independently. This year, the forum was held under the related topic “The Future of King SkyFront Accelerated by Open Innovation through Industry-Academia-Government Collaboration” and was conducted in three parts: : lectures, poster presentations,



and a networking session. In the first part, four speakers from institutions based in King SkyFront delivered presentations, including a keynote speech by Dr. Makoto Suematsu (Director, Central Institute for Experimental Medicine and Life Science) highlighted innovative research results, prospects for social implementation, and relevant case studies. Each presentation was followed by a lively Q&A session, stimulating a prominent level of interest from the attendees.

The second part showcased the research findings, proprietary technologies, products, services, and projects of institutions through poster and demo exhibitions. A total of thirty-nine presentations from thirty-one institutions were exhibited, including five presentations from four institutions located in Ota-ku across the river from King SkyFront. It provided a valuable opportunity for fostering future collaboration. The final part featured a buffet-style standing networking session, where speakers, exhibitors, and participants engaged in lively discussions. Many expressed interests in the next event, and we were able to feel a strong sense of unity across the entire King SkyFront.



RINK FESTIVAL 2025 was held (February 14th, 2025)



The Regenerative medicine & cell therapy Industrialization Network of Kanagawa (RINK) organized the RINK FESTIVAL 2025, which marks its seventh time at TIAT SKY HALL in Haneda International Airport Terminal 3. This event aims to strengthen lateral connections within the industry for promoting industrialization of regenerative medicine. Every year, companies, scientists, students, and others from across Japan gather at the event, which has proven extremely popular as a place for PR and networking. Also, as the session touched on collaboration with King SkyFront, expectations for future developments were raised.

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“Shonan Health Innovation Park (Shonan iPark) Science Café xShonan Kamakura General Hospital x Tonomachi King SkyFront” Collaboration Seminar was held (February 14th, 2025)



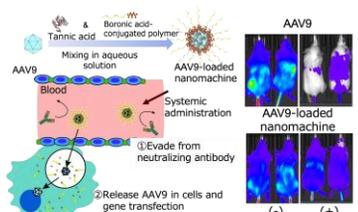
As a collaboration project of Shonan Health Innovation Park (Shonan iPark) Science Café, Shonan Kamakura General Hospital, Tonomachi King SkyFront, a seminar was held under the theme of “Latest Clinical and Research Trends in Alzheimer's Disease”. Dr. Junya Kawada, Director of Neurology from Shonan Kamakura General Hospital, Dr. Li Mei Hong from Takeda Pharmaceutical Company Limited, and Dr. Erika Sasaki from Central Institute for Experimental Medicine and Life Science in King SkyFront gave lectures. Through their lectures and subsequent discussion, we were able to gain new knowledge about the diagnosis, treatment, and prevention of Alzheimer's disease.

iCONM Now

Gene therapy with nanomachines loaded with a wine ingredient

The research team led by Assistant Professor Yuji Honda at the Institute of Advanced Research, Tokyo University of Science, along with iCONM, has made a groundbreaking achievement by demonstrating for the first time that a novel smart nanomachine equipped with adeno-associated virus vectors (AAV)* can overcome significant challenges in AAV-based gene therapy, such as the "production of neutralizing antibodies" and "hepatotoxicity," in mouse models. These findings were published online in the journal ACS Nano on February 4, 2025.

AAV is widely used as a vector for gene therapy, but patients with neutralizing antibodies against AAV often experience insufficient gene delivery efficiency, which limits treatment options for many. The research team focused on tannic acid, a natural component found in wine, which easily adheres to biomolecules. By combining it with precision-synthesized polymers made from phenylboronic acid, they developed a



novel AAV-equipped nanomachine. This nanomachine demonstrated robust gene delivery activity even in the presence of neutralizing antibodies and effectively suppressed the increase in hepatotoxicity markers caused by AAV9 by inhibiting AAV accumulation in the liver. Additionally, the AAV-equipped nanomachine showed gene delivery efficiency to the central nervous system that is comparable to AAV alone, indicating promising therapeutic effects for gene therapy.

*Adeno-associated virus is a type of non-pathogenic virus whose shell, after the removal of contents like nucleic acids, is often used as a carrier for gene delivery.

Y. Honda et al., ACS Nano, in press
<https://doi.org/10.1021/acsnano.4c11085>

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