KING SKYFRONT
Kawasaki INnovation Gateway at SKYFRONT
i-Newsletter
2024winter

The National Institute of Health Sciences is celebrating its 150th anniversary. We interviewed Dr. Masamitsu Homma, Director General.

Researchers at the National Institute of Health Sciences

This year marks the 150th anniversary of the founding of the National Institute of Health Sciences (NIHS), Japan's longest-running national research institute. Today, NIHS conducts tests, surveys, and research to accurately evaluate the quality, efficacy, and safety of pharmaceuticals, medical equipment, regenerative medicine products, foods, food additives, and other chemical products. Our mission is to reflect the results of our research to the health, labor and welfare administration and other national policies, thereby maintaining and improving the public health and living environment. We interviewed Dr. Masamitsu Homma, the 31st Director General of the NIHS, about the origins of the NIHS, special efforts for its 150th anniversary, and human resource development targeting young people. We are pleased to share Dr. Homma's passionate thoughts with you in this i-Newsletter.

What was the purpose of establishing the National Institute of Health Sciences (NIHS)?

About 150 years ago, with the Meiji Restoration, Japan was on the path of modernization, incorporating Western civilization and modernize as trade with foreign countries flourished. In terms of medical care, the focus had been on Japanese and Chinese medicines until then, however new Western medicines were being introduced. This Western medicine, unlike previous medicines, were overwhelmingly more effective and instantly became available on the market. However, counterfeit products also began to be distributed on the market, some of which were inferior and contained many impurities that were harmful to health. As this situation could lead to health damage for Japanese people, Dr. Anton Johannes Geerts, a Dutch teacher of chemistry and pharmacy at Nagasaki Medical School at the time, was concerned and advised Sensai Nagayo, the first director-general of medical affair bureau in the Meiji Goverment to establish a facility to test drugs. It all started that in 1874, the Tokyo Drug Control Laboratory (later renamed the Tokyo Institute of Hygienic Sciences) was established in Kanda Izumi-cho.

The evolving Tokyo Drug Control Laboratory

After World War I, it became difficult to import Western medicines and it became necessary to establish the pharmaceutical technology domestically. The NIHS took the lead and was able to produce basic medicines in the Taisho era. Taking this opportunity, it evolved into the creation of a pharmaceutical foundation.

In 1945, the building was destroyed by fire in an air raid during World War II, and ended the 71-year history of the research facility in Kanda Izumi-cho. During the turmoil of post-war period, there was an urgent need to improve public health to protect people's health.

Dr. Masamitsu Honma, Director General

Fortunately, we were able to relocate to Kami-yoga, Setagaya-ku, Tokyo, where there was a supply base of food and medicine to the former Army. We renamed the institute the "National Institute of Hygienic Sciences" and resumed operations. During the post-war period of economic growth, pollution, drug induced suffering, and food safety were becoming problems. For example, in the case of pollution, these could be “Minamata disease, Itai-Itai disease”; in the case of drug induced suffering, “thalidomide, Sumon, chloroquine, and the ampoule cold medicine incident”; and in the case of food safety, it includes “food additives and colorants suspected of being carcinogenic” etc. At that time, there was a need to increase food production, and while industrialization was progressing, the Food Sanitation Law was enforced. Thus, food testing service became an important role for the institution. Thereafter, the Biological Safety Research Center was established to ensure the safety of pharmaceuticals, foods, and related chemicals, and a system was put in place.

In 1997, with the overall re-evaluation of the Pharmaceutical Administration and Regulations in Japan, the name was changed to the National Institute of Health Sciences (NIHS).

Interaction at King SkyFront

For us, the King SkyFront is an attractive place where there are many companies and research institutions concentrated. Technical exchanges have already begun at the field level, including venture companies specializing in pharmaceuticals, medical devices, regenerative medical products, etc., and companies specializing in chemical analysis of foods and food additives. Furthermore, all our members are eager to collaborate with some company and hoping to make contact and develop professional relationships. To do this, it is certainly important to first create an opportunity. At the KSF Science Forum* which was held the other day, we could understand each other’s research work. I felt it was an excellent event!

Regulatory Science original monument

150th anniversary event

We are planning to organize some special 150th anniversary events. In autumn, we plan to invite alumni of the NIHS to a commemorative ceremony and celebration together with current employees and related parties. Before that, we will hold a commemorative symposium, which will also be streamed online, and anyone can participate. In addition, we plan to hold a public lecture in June in cooperation with Kawasaki City that is celebrating the 100th anniversary of its municipal government this year. Also in August, we will hold a 150th symposium and open campus. We hope that everyone will deepen their understanding of the NIHS through these events. During the event, photographs of previous Directors will be displayed on the walls in the entrance lobby. Mitsuru Uchiyama, the 21st Director, is the person who propounded the concept of "Regulatory Science," which is the current motto of the NIHS proposed. “Regulatory Science” refers to research that harmonizes the results of science and technology with “people and society” in order to truly benefit the interests of the people. As one of the events to commemorate the 150th anniversary of NIHS, a monument of the original text of "Regulatory Science" propounded by Dr. Uchiyama will be exhibited at the entrance lobby of the NIHS.

Human resource development for the future

When I was in graduate school, I studied molecular genetics while enrolled in the forensic medicine department, and as a result, I conducted DNA testing for the first time in Japanese criminal history. I then spent two and a half years at the NIHS as a pos-doc conducting research in the cell bank developing methods for identifying cultured cells by DNA profiling system. During that time, I continued to look at so many types of cells every days, so I was able to tell the types of cells just by looking at them under a microscope. After that, I was officially hired and engaged in various researches. One is that I was involved in an experiment in which cells I created through genome editing were used in the “Kibo” laboratory in JAXA's space station to study the effect of cosmic radiation and micro-gravity on DNA repair of the cells. It turned out that the results were not much different from those on Earth, but I really enjoyed interacting with the academia I met through JAXA and the Astrobiology Society, and this increased my motivation for research. As researchers at the NIHS, we value our "Regulatory Science" mission and our sense of responsibility very much. However, this research may be unspectacular due to the nature of the research institution. That's why I have tried to find interesting research that goes beyond my work. I always tell young researchers that if they have the time, they should find interesting research topics on their own and work on them freely. As one of the ways to promote this, I have started to provide "Director General's Research Funds". This year, I awarded two studies out of more than a dozen applications. In addition, to encourage the research activity, we hold the NIHS regular research conference several times a year, which is an opportunity for young researchers. However, I am worried that international exchange is stagnant compared to the past. We would like to work hard on fostering young researchers through exchanges with overseas research institutions. As part of this effort, we are approaching research exchanges with the National Institutes of Food and Drug Control (NIFDC) in China and the National Institute of Food and Drug Safety Evaluation (NIFDS) in South

Korea, which have similar functions to the NIHS.

The NIHS is a national research institution. However, like universities, we have a certain amount of discretion in selecting research themes and obtaining research funds and can conduct research based on our own expertise and interests. Also, we can feel that the results of our research will be returned to "people and society" through government. I would like to strongly highlight this successful experience and enhance the image of the NIHS.

It was motivating to hear about the history of the NIHS, the connection of King SkyFront, the 150th anniversary events, and the thoughts of Director General on fostering young researchers. Thank you very much Dr. Honma, Director General.

* KSF Science Forum

It is opportunities to actively exchange information and technology through science and engineering for researchers and engineers engaged in R&D in various fields at institutions located on the King SkyFront.

Surrounded by past Director Generals

Metcela to Strengthen Clinical Pipeline Development, New Headquarters and R&D Center at Kawasaki King SkyFront

Metcela Inc. (headquartered in Kawasaki, Kanagawa Prefecture) has established a new head office and R&D facility in the Cybernics Medical Innovation Base A Building located at the King SkyFront International Strategic Base in Tonomachi, Kanagawa Prefecture. The approximately 600 square meter space includes an R&D base, offices, as well as a cell processing facility in a nearby building. The newly integrated facilities will accelerate the development of cellular medicines for chronic respiratory diseases utilizing Metcela's fibroblast cell technology.

Click here for Metcela news release

New Headquarters and R&D Center at Kawasaki King SkyFront

Kao Corporation; A Steady Step Towards Establishing Alternative Developmental Toxicity Evaluation Using a Transgenic Zebrafish Embryo

Animal-free testing (alternative methods) is essential on a global scale for the safety evaluation of chemical substances. Safety Science Research, Kao Corporation is actively promoting the development of alternative methods and has recently collaborated with The University of Tokyo (Graduate School of Science), to pioneer a developmental toxicity evaluation technique for the craniofacial anomalies using a transgenic zebrafish embryo.

In this study, we utilized transgenic zebrafish embryos in which neural crest cells, which form craniofacial structures, are visualized with a fluorescent dye. We successfully detected the developmental toxicity of chemicals that cause craniofacial abnormalities in mammals through abnormal migration of neural crest cells (Liu et al., Toxicological Sciences 2023). We believe that this technology will enable rapid and accurate developmental toxicity evaluation without the use of animals. Furthermore, this innovative technology is expected to be applied to the search for safe and secure materials and product development.

Click here for KAO news release

Hello, we are happy to introduce to you our firm, "CP JAPAN IP Attorneys"!

We are here to be a reliable collaboration partner to you in your research and development and business situations, to think together about the creation, acquisition of rights, and utilization of intellectual properties (IP), IP-related problems, etc. and to strategically solve them. Our experience at the recent enthusiastic New Year's exchange meeting at King SkyFront reinforced our commitment to this mission!

CP JAPAN IP Attorneys' strength is in the life science field, but not only that, we have had a lot of experience in business planning, management support, and licensing with others from various aspects of IP, from startups to mid-sized companies. We have also contributed to the creation of a local start-up support system in cooperation with administrative organs. Especially when it comes to startup IP support, some members of CP JAPAN IP Attorneys have personally experienced financing from the aspect of IP, founding and selling startups, etc. Since the founding of CP JAPAN IP Attorneys, we have had much know-how to internationally pursue patents for an overseas presence, and therefore, we hope to be able to cooperate in bringing Japan's advanced innovative technologies to light around the world.

Click here for CP JAPAN IP Attorneys website

We Phicell uses our technology and experience to protect cells

Phicell Corporation specializes in the storage of samples, specimens, cells, and investigational drugs. In cooperation with the group company SAROUTE Co.,Ltd., we offer a one-stop service for the storage and transport of biological samples. We entered Tonomachi Connect at King SkyFront to prepare a new storage facility in the Tokyo metropolitan area in December 2023.

Please feel free to contact us if you are considering storing samples, specimens, cells, or investigational drugs.

Contact information :

HP：https://phicell.co.jp/

Contact person: Furuta（m.furuta@phicell.co.jp）

Currently, the GMP-compliant, ISO 9001-certified our storage facility in Kobe is equipped with a backup power supply and auxiliary cooling system to prevent power outages, as well as a temperature monitoring system for storage containers to ensure disaster control. Moreover, the personal information we store is anonymized and safely stored in a data center in Japan, providing you with a system to ensure peace of mind that your information is in safe hands.

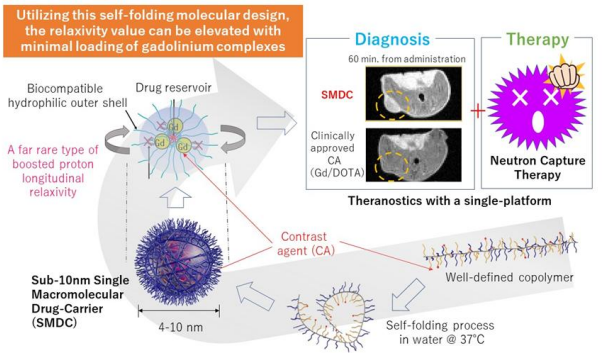
Our storage facilities in Kobe, Hyogo Prefecture, Japan

iCONM Innovation Center of NanoMedicine

Contrast Media Find Smaller Lesions with Lower Doses

CHANGE Center of Healthy longevity And Nursing innovation with Global Ecosystem

Nuclear magnetic resonance tomography (MRI) is a diagnostic tool that allows tomographic imaging of the body without radiation exposure, but it has the disadvantage of being less sensitive than other examinations that use radiation. To compensate for this disadvantage, Gadolinium (Gd) is widely used as a contrast agent. However, it cannot be used for people with impaired kidney function, and there are concerns about the environmental impact of excreted Gd. iCONM's Visiting Scientist, Dr. Yutaka Miura (Associate Professor at Tokyo Institute of Technology) and his colleagues have developed a new method to increase the sensitivity of MRI by a factor of 7 by self-folding and encapsulating Gd-bound polymers into ultra-small nanomachines measuring 5 to 10 nm. It was also found that the Gd-bound polymer is excreted from the kidneys immediately after the test is completed, which is expected to reduce the risk of side effects. This research has been published in the November 2023 issue of Advanced Science.



Click here for Advanced Science website

【Recruiting pitch speakers ～ 2/12】 Global life-science pitch 2024

iCONM in collaboration with BioLabs is organizing a global pitch event "Global life-science pitch 2024" on Thursday, March 14 JST. We will provide an environment where you could connect with world's life-science community, thus support the growth of start-ups.

Click here for Global life-science pitch 2024 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/S93679955/

Date of issue: February 2024
Publisher: TONOMACHI LifeScience Cluster Division
Kawasaki Institute of Industrial Promotion
Mail：pr-ksfcl@kawasaki-net.ne.jp