

Japanese companies at the forefront of global health challenges

The country with the longest life expectancy in the world at 85 years, Japan is home to 9 of the 20 oldest living people on the planet. Underpinning these extraordinary demographic statistics are several factors, the most prominent being the Japanese diet and the excellence of the nation's universal healthcare, a system that owes its success to the strong foundations built through decades of government policy and a flourishing private sector that has enabled Japan to cement its place as the third largest pharmaceutical market and fourth largest medical technology market in the world. Moving forward, Japan's pharmaceutical and healthcare companies aim to place themselves at the forefront of the greatest global health challenges of the 21st century, including cancer, rare diseases, infertility, myopia and the issues brought about by aging populations, particularly in Japan and other developed nations.

In recent years, the regenerative medicine industry has flourished in Japan, mainly thanks to government regulatory overhaul and the SAKIGAKE system introduced in 2015, which allowed companies to fast-track the development and testing of new drugs. Worldwide recognition of Japan's leading role in the field came when Professor Shinya Yamanaka, who has led research in regenerative medicine applications for iPS cells, won the Nobel Prize in Physiology and Medicine in 2012.

"The impact of that Nobel Prize was great and became a major driving force for Japan as a country to focus on regenerative medicine," says Hideo Takahashi, President of Ikeda Scientific, which manufactures science and biotechnological equipment. Among its developments is SAITAS, a platform that brings together unique, cutting-edge regenerative medicine-related instruments and introduces them to researchers. "Our approach and mission are to build momentum in the research community. To this end, we provide grants to researchers in regenerative medicine and we have an extensive network within the regenerative medicine research community that allows us to directly contact most of the researchers currently involved in regenerative medicine, so our approach is more of a bottom-up approach. We try to utilize and introduce our products, such as SAITAS, for example, and use them as a channel between manufacturers and researchers."

Regenerative medicine for cancer treatment is one of the focus areas for Dojin, a leading Japanese healthcare and life science company which celebrates its 100th anniversary in 2023. "Traditionally, the three predominant methods for cancer treatment are chemotherapy, radiation and surgery. The fourth treatment that has emerged from the advancements in regenerative medicine is immunotherapy. This treatment is characterized by almost no side effects because it increases and returns the immune cells that are originally in the patient's body," says Dojin CEO Keima Ueno. "The applications for regenerative medicine are broad. In addition to cancer immunotherapy, we are leveraging the

technology to expand into several new areas, such as joint pain treatment, gum health, skin treatment, and fertility treatment."

Successfully developing revolutionary biotechnologies such as gene and cell therapy products and regenerative medicines, Takara Bio is another leader in the field, having previously been named by *Fortune* as one of the world's top five biotech stocks. "Takara Bio has been providing services to support research and development of regenerative medicine. We call this service our Contracted Development and Manufacturing Organization (CDMO)," says company president and CEO, Koichi Nakao.

Through its CDMO service, Takara Bio supports its clients' regenerative medicine products, from development to manufacturing, and provides services for viral vector production, cell processing, clinical-grade human embryonic stem (hES) cell line derivation, quality testing, and cell banking. "The biggest advantage that we have in the CDMO business is that because we have already engaged in the development of gene and cell therapy for a fairly long time, we have accumulated the know-how and experience needed in this field. We provide such accumulated technology to our customers through the CDMO business," adds Mr. Nakao.

Amid the increase in infertility rates around the world, Kitazato – which has pioneered advancements in assisted reproductive technologies (ART) over the past two decades – aims to support the reduction of the cost of fertility treatments. "We believe that reducing the cost of fertility treatment will make it more accessible, which in turn will improve the birthrate and lead to the growth of the next generation on a global scale," says president Futoshi Inoue (MBA, PhD). Kitazato is the company behind a groundbreaking cryopreservation technology called the Cryotop Method, which has been used in over 3,000 clinics worldwide. "The viability of cryopreserved eggs and fertilized eggs used to be low," adds Mr. Inoue, "but cryopreservation using Cryotop has resulted in almost 100% survival."

Alpha Corporation, meanwhile, is tackling another global health issue: myopia (or shortsightedness). In 2009 the company was the first to receive approval in Japan for the manufacture of orthokeratology lenses, which are seen as one of the best answers to the growing problem of myopia. "In the past, orthokeratology was a means of correcting myopia, but around 2010, it began to be proposed as a means of controlling the progression of the condition, and since then, it has attracted attention and grown rapidly in use," says Alpha president Masamichi Kanegae. "At present, multifocal soft contact lenses, multifocal spectacles, and eye drops are being studied as methods of controlling myopia, but it has been reported that orthokeratology is more effective than the above methods in suppressing ocular axis over-elongation."

Improving rehabilitation services for patients overcoming accidents or serious medical conditions such as strokes is another important



Koichi Nakao,
President, Takara Bio, Inc.

area for development. OG Wellness, a leading Japanese manufacturer of advanced and user-friendly physiotherapy and rehabilitation equipment, is seeking international partners as it looks to develop and bring its products to a larger number of patients worldwide. "For R&D, we are looking for collaboration with international companies to increase our line-up of products," says president Hiroshi Okuda, who reveals that the company is targeting expansion in Asia, South America, and the U.S. "I want this company to be the world's best rehabilitation company. My dream is that by making use of our products, we can help as many people around the world as possible to return to the lifestyle that they were deprived of."

A reputed developer in anti-inflammatory and glycyrrhizin-based medicines, Minophagen Pharmaceutical is a small company operating in niche areas, says president and CEO Dr. Tokuchiro Utsunomiya. It too is aiming to build international partnerships as it looks to expand the use of its products. "Mainland China is without a doubt our key market outside Japan. Our new product, Targretin, will be going through a clinical study shortly this year. We are hoping that at its completion, we can realize the commercialization of the product as an orphan drug within a couple of years. We are aiming for market expansion in Indonesia, South Korea, and other Asian countries for our glycyrrhizin products as they have good market potential."

Minophagen also plans to diversify into the development of skin products, which is the area of expertise for cosmetics firm Cosmetec Japan, a leading ODM/OEM company supporting clients in the health and beauty industry. In line with its mission to improve skin health worldwide, Cosmetec's parent company Momotani Juntankan established a specialist dermatology clinic. "Recently, cosmetics and medical care have become very close, and there are many products that transcend the fields. We would like to provide a wide range of support in the fields of beauty and health," says Cosmetec representative director Kensuke Fujimoto. "COSMETEC JAPAN is an innovative ODM/OEM company that provides full 360-degree support for those who are considering entering the health and beauty business, from planning and development to manufacturing, sales, and regulatory compliance."

Nearly 100 years in the crucial role of supplying optimal equipment for state-of-the-art science

A specialist distributor, Ikeda advises customers on what they need.

Founded in 1931, Ikeda Scientific is a leading distributor of experimental science equipment in Japan. The company also manufactures its own products and offers customers comprehensive advice on the technology that best fits their needs.



Ikeda's newly opened showroom, TEST STATION

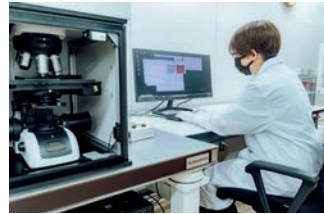
President Hideo Takahashi explains: "A university professor is given a budget for a research project and will say to us: 'This is what we have to spend – what equipment should we get?' What Ikeda provides is a one-stop service."

A flagship Ikeda project is SAITAS, which focuses on regenerative medicine. "It's an area in which many companies don't have the

capacity to advertise and sell by themselves," Mr. Takahashi says. "We act as a distributor for them."

"Our mission is to build momentum in the research community, so we also provide grants to researchers in regenerative medicine and have an extensive network that allows us to directly contact most of the researchers involved in the field."

SAITAS also has a role to play in Ikeda's international ambitions.



Analysis demonstration in TEST STATION

"In Japan, many companies import foreign scientific instruments, but the opposite is less common," Mr.



Laser Raman microscope by Nanophoton

Takahashi says. "We'd like to take Japanese products overseas."

"As an approach to overseas markets, we introduced the 'Micro Tube Pump System' in SAITAS. Developed as part of an Iwate University venture, it's an inexpensive instrument that can automate cell culture. We believe it will have a great impact on overseas researchers."

"We'll also introduce a laser Raman microscope developed by Nanophoton, an Osaka University company. The microscope can conduct non-contact, non-destructive analysis and evaluation



"Our aim is to support the creation of an environment where top Japanese technologies can be brought to the market."

Hideo Takahashi, President, Ikeda Scientific Co., Ltd.

with high precision, and is said to be one of the few successful ventures in analytical instrumentation originating from a university."

IKEDA SCIENTIFIC Co., Ltd.
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Alpha Corporation's quest to help battle myopia

As screen-based lifestyles have grown worldwide, so too has myopia, especially amongst children. Alpha Corporation is providing next-generation orthokeratology lenses to provide a surgery-free treatment to the condition.



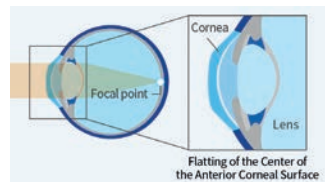
"We are taking on the global myopia problem."

Masamichi Kanegae, President, Alpha Corporation Inc.

Amid the increasing use of digital screens, myopia (or nearsightedness) is on the rise worldwide and could affect 5 billion people by 2050. The problem is particularly prevalent in children, with experts estimating that up to 80% of teenagers in East Asia currently suffer from nearsightedness.

Orthokeratology lenses are seen as one of the best solutions to the

issue and Japanese company Alpha Corporation Inc., a member of the Menicon Group, is among the companies leading development in the field. Unlike regular contact lenses, orthokeratology lenses are worn during sleep and removed during the day, allowing users to go without corrective eyewear during the day, and it is also believed they can even control the progression of myopia.



The eye after lens removal

With over 50 years of experience in contact lenses manufacturing, Alpha became the first orthokeratology lenses-approved company in Japan in 2009, and today offers products to myopia sufferers in Asian countries. The company



QC check of each individual lens

manufactures its lenses in Japan, where it implements strict quality control and uses the latest IC tags to automate every process from material selection to standard inspections. Orthokeratology lens manufacturing requires the lathing of complex concave shapes with high precision and reproducibility; and Alpha's lathing process can be performed with an accuracy of 1 / 10,000 mm, with lenses being made according to each patient's eyes.

"Orthokeratology lenses hold so much promise as a means of

managing the myopia problem, and our development of these lenses couldn't have come at a better time," says Masamichi Kanegae, President of Alpha Corporation.



"Through orthokeratology lenses with Japanese roots that go beyond the Made-in-Japan brand quality and with the Alpha Quality that our company is capable of, we are taking on the global myopia problem."

ALPHA
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Kitazato's Cryotop Method, the future of embryo cryopreservation

Since its foundation in 1998, Kitazato Corporation has played a major role in the area of assisted reproductive equipment and technologies, with the revolutionary Cryotop Method among its latest contributions to the field.



Kitazato company

Infertility is a global health issue that affects some 48 million couples and 186 million individuals worldwide according to the World Health Organization. In line with these numbers, it is understood then that infertility affects 15% of couples across the globe, and due to environmental and lifestyle factors, many experts believe that infertility rates will continue to rise in many countries.

As such, demand for assisted reproductive technologies – such as in vitro fertilization (IVF), intracytoplasmic sperm injection, cryopreservation of gametes or embryos, sperm or egg donation and the use of fertility medication – will continue to grow. For many couples however, the price of treatments like IVF can be too expensive, particularly considering the often low success rate. But thanks to companies like Japan's Kitazato Corporation leading advancements in the field of assisted reproductive technologies, the success rate of fertility treatments will continue to improve as the costs also come down.

Since its establishment in 1998, Kitazato has been at the forefront of developments in reproductive technologies. The company performs extensive research to develop, manufacture and market medical devices and media to support a wide range of fertility treatments, from IUI to PGD – with its aim to provide the best quality products and services in order to help physicians and embryologists maximize IVF clinic success and contribute to the happiness of patients.

Over its 24-year history, Kitazato has managed to significantly expand its global business opera-



Cryotop Vitrification

tions, and key to the company's success has been the ability to offer the highest quality products while keeping costs down, as highlighted by president Futoshi Inoue. "Kitazato products are relatively inexpensive, and it could be one of the reasons for their widespread use, but we also take customers' opinions into account and continuously make small improvements to increase their reliability," he explains. "I believe that this attitude is the reason why our products continue to be supported by our customers and why we have increased our market share. In addition, we offer not only inexpensive products, but also value-added products which are relatively high-end.

The reason why Kitazato does not raise prices and continues to offer low-price products is because it wants to lower the price of fertility treatment", Mr. Inoue stresses. "We believe that reducing the cost of fertility treatment will make it more accessible, which in turn will improve the birthrate and lead to the growth of the next generation on a global scale."



ET Catheter

Kitazato offers a broad selection of quality products that maximize success at every step of the IVF

cycle, including needles, catheters, pipettes, media and cryopreservation equipment. With over 3,000 clinics worldwide trusting in its products, the Japanese firm continues to cement its reputation as a world leader in vitrification.



OPU Needle

"At Kitazato, the three main product groups are needles, catheters, and cryopreservation of vitrification. Next are media, pipettes, and equipment, in that order. In fertility treatment, needles to collect eggs, media to fertilize eggs and culture subsequently, and catheters to return fertilized eggs into the uterus are universally indispensable products," the company president explains, adding that continuous improvement of its products is Kitazato's utmost priority. "We need to keep on focusing on these areas and develop them into even better products. We also continue our efforts with new research and collaborative developments in vitrification, pipettes, and equipment as well, so that fertility treatment increases the chances of pregnancy by even 1%. This may result in a new seventh category."

Such intensive R&D has seen the company develop groundbreaking technology, with the best example



"We believe that reducing the cost of fertility treatment will make it more accessible, which in turn will improve the birthrate and lead to the growth of the next generation on a global scale."

Futoshi Inoue,
MBA, PhD., President,
Kitazato Corporation

being the Cryotop Method, a technique of vitrification of oocytes and embryos that is arguably Kitazato's greatest contribution to the field of assisted reproductive technologies. During the last decade, thousands of professionals have placed their trust in the fantastic results offered by the Cryotop Method, making it the undisputed market leader in cryopreservation of human gametes. It has been applied in more than 2,500,000 clinical cases annually in over 115 countries and 3,000 assisted reproduction centers, with hundreds of scientific publications having certified the excellent results achieved.

"It is recognized as a great blessing that the cryopreservation of eggs and fertilized embryos has significantly changed the conventional fertility treatment program by making it easier and safer for anyone to achieve high viability results. The viability of cryopreserved eggs and fertilized eggs used to be low, but cryopreservation using Cryotop has resulted in an almost 100% survival rate," explains Mr. Inoue.

"In the past, patients had to undergo treatment several times and experience multiple needle punctures to have eggs retrieved.

Now, there is no need for patients to have needle punctures repeatedly because multiple oocytes can be cryopreserved from a single retrieval. We believe that this has contributed to the reduction of medical accidents and the emotional and financial cost to the patient."

When it comes to embryo freezing, in general, only six out of eight eggs, or 75%, will survive the freezing and thawing process. However, Kitazato's Cryotop Method has over a 95% post-thaw survival rate. Pressed on how the company has been able to achieve such success rates, Mr. Inoue responds: "The answer is simple: we are blessed with researchers from



ICSI

all over the world who are willing to cooperate with us. We have received numerous comments and reports on the Cryotop Method and have accumulated a great deal of experience. We are sincerely responding to each opinion we receive and that has led us to realize our products and methods giving a high survival rate. We will continue our efforts to further improve the survival rate with researchers around the world."

Another important element behind Kitazato's success has been *monozukuri*, the Japanese manufacturing philosophy dedicated to craftsmanship and the pursuit of perfection. Precision, high-quality manufacturing is absolutely crucial when it comes to medical devices and the reason why Japanese craftsmanship has excelled in the field thanks to companies like Kitazato.

"Our staff are trained to become professional and master craftsmen and their technique is passed on to the next generation to pursue even higher quality," says Mr. Inoue. "In Japan, there are many highly skilled small and medium-sized enterprises and elderly craftsmen, and we find it very meaningful to collaborate with them in the development of our products."

While digital transformation and the use of the latest tech-



Media

nologies is indeed important, the Kitazato president insists that the skills of the human hand will always underpin the company's product development.

"In our case, automation and the use of IT to improve efficiency are outsourced to partner companies that excel in those areas or are partially incorporated into in-house manufacturing sites," he explains.

"What we should do at Kitazato's production sites is to continue to maintain high quality by valuing high technology that uses human hands ultimately without relying on AI or machines, although cost reduction is important. By clearly separating what can be done internally and what should be done externally, we believe it is our responsibility to support the development and research of fertility treatment, which is advancing rapidly, and working on that will lead to the next generation of fertility treatment. We are responsible for all products bearing the Kitazato name, so we manufacture all of our own products."

While the company strictly and solely bears responsibility for the manufacture of its products, room for collaboration does exist within the sphere of R&D, particularly as Kitazato branches out beyond assisted reproductive technologies.

"Of course, the market is global, so I direct product development and research with an eye to obtaining patents not only in Japan but also overseas. This may be done in conjunction with university institutions or large private fertility clinics and research institutes in various countries. But in the end, I will only bring to market products that I am convinced will work," Mr. Inoue explains.

"Kitazato has an image of being outstanding in the field of fertility cryopreservation, but we are also contributing to various fields such as virus cryopreservation and gametogenesis of endangered species. I look forward to seeing new research projects that will be born

as a result of the interest shown by readers of this article."

As the company looks to expand internationally, it is paying particular focus on Asia, where in many countries, including Japan, fertility rates are among the lowest in the world. Kitazato has contributed to the development of fertility treatment in Asia by visiting hospitals in countries where fertility treatment is still developing and providing technical guidance.

"We have not simply sold products but have also worked with local distributors and doctors to improve fertility treatment tech-

treatment, more of whom he hopes to work with in the future.

"In Japan, there are many world-renowned doctors in the field of fertility treatment. Dr. Atsushi Tanaka (St. Mother's Hospital, Fukuoka) has established a treatment method called ROSI, and is the only doctor in the world to have fertilized eggs from spermatoocytes resulting in numerous pregnancies. He is doing a great job for male infertility patients.

"Dr. Yoshiharu Morimoto (Horac IVF Grand Front, Osaka) is the world leader in making in vitro maturation (IVM) clinically appli-



Ignacio Bermejo, CEO, Dibimed and Futoshi Inoue

niques. As a result, we have gained the support of many doctors," adds Mr. Inoue. "I was also blessed with a reliable partner, Mr. Ignacio Bermejo, CEO of Dibimed for our success in international business. We have key regions such as the U.S., E.U., Japan, and the U.A.E. in the Middle East, where we would like to establish local subsidiaries that can communicate directly with our customers. From there, we would like to expand into other areas. By providing tailored products with special features and specifications and easier-to-use products, we would like to provide beneficial solutions for fertility treatment that meet different local demands."

Next year Kitazato will celebrate its 25th anniversary, a timely moment for the company to reflect on its contribution to assisted reproductive technologies, while also looking towards the future and setting the company's direction for the decades to come. Mr. Inoue proudly highlights some of the influential Japanese researchers that have contributed to the field of fertility

and is now engaged in mitochondrial research. Dr. Keiichi Kato (Kato Ladies Clinic, Tokyo) spreads the maternal-friendly natural cycle IVF technique around the world. Dr. Shokichi Teramoto (Natural ART, Tokyo) combines natural cycle IVM and IVF by maturing oocytes collected from small follicles. Prof. Nao Suzuki (St. Marianna University, Kanagawa) contributes to the worldwide acceptance of ovarian cryopreservation techniques for cancer patients, and has made a network of fertility preservation.

"I cherish the relationships with the people we have met and will meet in the future and want to spread Japan's wonderful fertility treatment technology throughout the world. I would like to continue my current business into the 22nd century while helping as many births as possible for the development of mankind."

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Glycyrrhizin experts target orphan diseases responding to various inflammatory-related issues

Minophagen Pharmaceutical has an established reputation as an anti-inflammatory research and development company and is now utilizing this expertise to target not only orphan diseases, but also COVID-19 symptoms.



"We are seeking partners outside Japan with a new medicine that has already been marketed as a niche product."

Dr. Tokuichiro Utsunomiya,
President & CEO, Minophagen
Pharmaceutical Co., Ltd.

Founded in 1938, Minophagen Pharmaceutical has been building its focus on penetrating niche markets rather than competing directly with the behemoths of the global industry. Identifying the appropriate partnerships, based on examples observed elsewhere, is a key objective for company president and CEO Dr. Tokuichiro Utsunomiya.

"For a long time, Japanese pharmaceutical companies have tried to have an R&D pipeline without collaborating with major pharmaceutical giants," says Dr. Utsunomiya. "Many have realized that rejecting that approach will make finding a market for their medicine outside Japan difficult.

"We are seeking overseas partners with a new medicine that has already been marketed as a niche product, especially for orphan diseases. The number of patients may be very small, but they really need those treatments. Japanese patients are longing for niche medicines that are yet to be developed."

The COVID-19 pandemic proved to be an interesting time for Minophagen and a period when, despite the downturn in sales for its injection product, a



Zama factory in Japan



Plastic ampoule line



Research laboratory 1

number of inquiries for its glycyrrhizin ones arrived.

"Glycyrrhizin was approved by the Japanese government in 1948 as having satisfactory efficacy in alleviating nose allergies and hay fever as well as treating chronic liver disease," the president recalls. "It was very difficult, however, to provide the data for the authorities in Europe and the U.S. to understand, and there are a variety of ways in which Asian countries differ from them in these processes.

"Minophagen initially concentrated on anti-inflammatory drug development and treatment for the liver, but we have recently expanded to skin products like ointments for skin inflammation. We had been conducting a co-promotion with Miyarisan Pharmaceutical for skin diseases which have the same mechanics, including glycyrrhi-



Glass ampoule line



Research laboratory 2

zic acid, and later we moved to Targretin. Our image is of an anti-inflammatory company."

Expansion across Asia and beyond remains a fundamental goal in the short-to-mid-term and Dr. Utsunomiya is targeting a number of collaborations.

"Mainland China is, without a doubt, our key market outside Japan. Our new product, Targretin, will be going through a clinical study shortly this year and we hope to realize its commercialization as an orphan drug within a couple of years. We are aiming for market expansion in Indonesia, South Korea and other Asian countries for our glycyrrhizin products as they have good market potential. We are also looking to collaborate with new companies, with Targretin a primary focus."

Minophagen is specifically working with a biotech com-

pany in Taiwan on AC-203, which treats epidermolysis bullosa.

"We are first looking to market this product in Japan," confirms Dr. Utsunomiya. "It is a very niche market and probably an orphan drug, making it a great product for us to develop. Furthermore, we are searching for synergies so that the same doctors can see patients with the same disease. The key is that patients in Japan are in need of those products for skin diseases. We hope it will be finished within a year, and we are in the process of negotiating with the relevant government sectors.

"We are endeavoring to expand our business in collaboration with local companies. Instead of becoming a major company like AstraZeneca or Pfizer, we want to remain a smaller company in the area with unique technologies and sales channels.

"Through these collaborations with local partners, we plan to pursue the relevant business licensing. Our already established network through our products of SNMC and GLT have created a global sales channel across 11 countries. We want to fully utilize that network in providing new types of drugs."

In terms of the future of the family-owned company, a succession plan appears to be a solid foundation.

"I want to achieve the sustainability of our business toward becoming a 100-year-old company," says Dr. Utsunomiya. "Maybe in 10 years, you can interview my son as the fourth-generation president of our family-owned company.

"Most important is our vision of looking after the health and welfare of our patients with our medicine, research and focus on the niche market. Even as a small company, our goal is to do everything we can and give our best for our patients in Japan and overseas."

Dojin: Making a difference in the world through cutting-edge biotechnologies

Specializing in healthcare and life sciences, Dojin is poised to be a key player not only in the Japanese biotechnology field, but worldwide as it leverages the synergistic benefits of its group company setup.

Since its founding in 1913, Japanese firm Dojin has sought to improve people's health through innovation, and its unique technology can help make a wider positive impact as it expands globally. Dojin focuses on areas such as immunity, antibodies and genes – fields where technological innovation has progressed significantly in recent years – and develops pharmaceuticals, diagnostic agents and regenerative medicine.

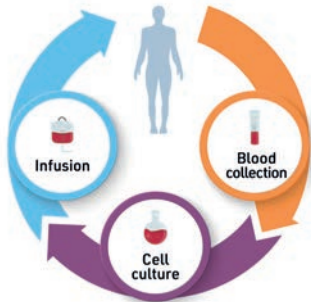


proceed with our drug development by doing everything from scratch it would take a tremendous amount of time. Therefore the optimal strategy is M&As."



Culturing immune cells

The company's main focus is expansion in the Asian markets such as China, Singapore, Indonesia, and Malaysia, while in the long-term Dojin also has an eye on African markets with high population growth such as Nigeria, Kenya, and Democratic Republic of Congo.



Cancer Immunotherapy

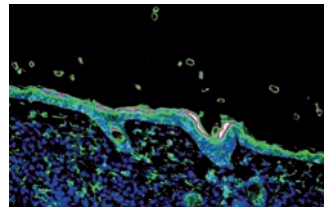
The company's recent progress comes as part of a wider trend in Japan in the field of regenerative medicine. In 2014, the Japanese government brought in a regulatory framework to promote innovation, research and development in the field, something which has allowed the country's companies to match and even better global advancements.

Dojin's groundbreaking work in the field of cancer immunotherapy typifies the progress it seeks to make through R&D. Immunotherapy is less invasive than other methods such as chemotherapy and utilizes the mechanism our bodies already possess to fight cancer cells through our immune system. Blood is collected from patients and cells immune to cancer are isolated before being cultured and infused back into the patient.

Dojin's patented technology simultaneously proliferates and activates six types of im-

mune cells, increasing the number of cells more than 300-fold after the culturing process.

As company CEO Keima Ueno explains: "This treatment has an efficacy rate of over 70% and is characterized by almost no side effects because it increases and returns the immune cells that are originally in the patient's body."



Immune cells attacking cancer

In addition to the area of cancer immunotherapy, Dojin is developing proprietary technologies in multiple areas of regenerative medicine. In the field of orthopedic surgery, the company has launched a new product to alleviate knee joint pain and has already treated many patients. In addition, it plans to introduce new products in the areas of skin, dental care, and fertility treatment.

As a holding group, Dojin's business is spread over multiple divisions, each with an important role to play. The company is always looking for synergies among the divisions, for example its patented antigen-antibody reaction technology is used in multiple fields within the group, such as in

the development of antibody drugs, diagnostic agents and chemical reagents.

As the Dojin group continues to expand, Mr. Ueno recognizes the importance of mergers and acquisitions (M&As) for its business strategy, explaining: "Because biotechnology requires a lot of time for R&D, if we were to

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Since 1913, DOJIN GROUP has been creating various products and services for our better health. Synthesizing the diverse technologies and looking 100 years ahead, we will accelerate our innovation to make a difference in the world.

Dojin
<https://www.dojin.group>

Integrating IoT and imaging technologies for simplified pharmaceutical distribution

TAKAZONO seeks to reduce the risk of human error and the burden on pharmacists while drastically increasing the safety of patients through its medicine audit support system and packaging machines.



"We would like to find new business opportunities so that we can be present in this newly evolving pharmaceutical world."

Tsutomu Kitaguchi,
President,
TAKAZONO Corporation



D-Shelf

Over the half century since TAKAZONO was established in 1963, the company has strived to manufacture products that support patients and healthcare service providers alike.

"We have worked hard to develop technology, manufacture and sell products, and provide related services, going to great lengths to incorporate feedback from patients and pharmacists in order to develop accurate and efficient products," says president Tsutomu Kitaguchi.

"Our next goal is to provide products which satisfy patients and healthcare service providers around the world.

TAKAZONO's philosophy is to always exert best efforts to create products that meet the needs of the times and to



Crestage-Lite3

respond flexibly as the world changes. We do so in order to continue to contribute to society even as we gain recognition for our efforts."

In recent times, the company has been advancing its imaging and image processing technology in order to improve monitoring and identification of medicines, thus reducing the human error that may occur when processed manually. In 2023, electronic prescriptions will be introduced, which will mean that the patients will not have to wait in the pharmacies to receive their medicine.

"There will also be traceability embedded with this new system, which will allow you to follow a person's medicine intake and monitor how the person's body is reacting to their medicine," Mr. Kitaguchi explains.

Packaging machines

In a recent survey by the *PR Times* conducted with pharmacists in Japan, their biggest complaint with their packaging machines came down to the cleaning process and the lack of automatic cleaning functions available. TAKAZONO however has packaging machines in its

portfolio of products to address the issue, Mr. Kitaguchi says.

"Japanese pharmacies have very small and limited space. The uniqueness of our tablet and powder packaging machine is that it is small in size and very compact. It also has high functionality and is very precise and accurate when it comes to medicine dispensing as well as packaging. Since we are earnestly dedicated in our approach to *monozukuri*, the lifespan of our product is very long. We thus have the dilemma of not being able to resell our products to repeat clients, because our products are so durable!"

Going forward, the company is looking to increase its investment in digital transformation of the pharmaceutical sector, as well as providing practical solutions such as its packaging machines.



ATTELNO 2

"Currently, patients receive paper prescriptions, and then go to the pharmacy to receive the medicines. However, with the advancement of IoT, things are becoming more automated,"



Eser

says Mr. Kitaguchi. "This is also from a logistics point of view too. When you go to the doctors, you are prescribed medicine, and by the time you get home, the medicine may be delivered to your home, or you can wait at your home to receive the medicine. The world is changing, and TAKAZONO would like to find new business opportunities. We will continue to provide new products, so that we can exist in this newly evolving pharmaceutical world."

Having taken over as president of TAKAZONO last year, Mr. Kitaguchi is optimistic about the future, prioritizing the company's core manufacturing philosophy and commitment to quality, and the constant improvement in addressing new challenges.

"Every three years, as a company, we make a management plan. My role as the president is to accomplish the three-year plan steadily and surely," he says. "By doing so, I want to ensure that the company has a solid structure that can be handed down to the next generation. In Japan there is a saying: '*sanpo-yoshi*', which means there are benefits for the seller and the buyer, as well as society. It is not just our company that should be making the profit. There should be profit for the customers, too. We also want to bring goodness and benefits to society. TAKAZONO would like to keep this philosophy of being a company that provides *sanpo-yoshi*."

TAKAZONO
www.takazono.co.jp

Prioritizing patient welfare with 'Made in Japan' quality

OG Wellness, a leading Japanese manufacturer of advanced and user-friendly physiotherapy and rehabilitation equipment, has set its sights on the global market.

In a world that is constantly evolving, bringing with it new technologies and changing lifestyles, one thing remains constant: that good health is a primary source of our happiness.

"Over the past 60 years, we have devoted ourselves to creating the most advanced and user-friendly physiotherapy and rehabilitation equipment to help patients regain confidence and happiness," says Hiroshi Okuda, President of OG Wellness Technologies.

The company's predecessor, OG Electric Medical Equipment Research Institute, was founded in 1949 by technical engineer Iwao Okuda in the steadfast belief that Japan possessed the knowledge and resources to manufacture world-class clinical equipment. More than 70 years on, OG Wellness Technologies is fulfilling precisely that vision.

"Beginning with our first product, a low-frequency electrotherapy device, we developed and launched a series of unique products which quickly spread throughout Japan. These products included microwave therapy devices and motorized intermittent traction equipment," says Mr. Okuda. "We later adapted our medical technology for the health and wellness area, extending our product line to nursing care equipment. As Japan became an aging society, our Chair-In-Bath nursing bathtub for wheelchair users immediately attracted attention and helped us build a solid reputation in the nursing care market."

Today, the company has two types of products: those that focus on originality and exist only in the domestic market in Japan, and those that are produced only for international markets.

"Many medical device manufacturers are looking not only at delivering their products to overseas



"My dream is that by making use of our products, we can help as many people around the world as possible return to the lifestyle that they were deprived of."

Hiroshi Okuda,
President, OG Wellness Technologies Co., Ltd.



BE-Well Series: WE-100/WE-110



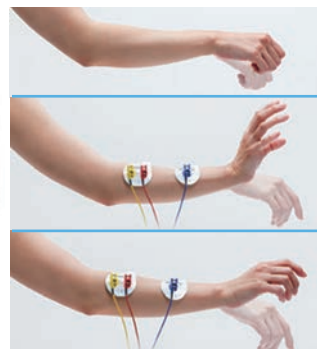
IVES: GD-611/GD-612



ORTHOTRAC LASEDIA: OL-6600



PHYSISONIC: ES-7



Power Assist Mode: The core mode of IVES

markets, but also developing their business in those markets. Due to Japan's tight restrictions, fewer companies are looking only at the domestic market, and advanced medical device companies have been successful in expanding their business overseas by launching their products in global markets first," explains Mr. Okuda.

Due largely to the tough regulatory environment and high cost of launching new products in Japan, the OG Wellness strategy – alongside other medical device competitors – is focused on expanding to global markets.

"When it comes to overseas expansion, it can be divided into manufacturing and sales. Regarding research and development, we will seek tie-ups with overseas companies and enhance our lineup. Regarding sales strategy, we divide the market into two categories," says Mr. Okuda. "There are two categories of countries. One is the group where rehabilitation has already been established and the other is where rehabilitation has not yet been developed. In the first category, we plan to sell only original and unique products such as IVES and ORTHOTRAC. In the second category, we would like to sell our full line-up of products."

To reach such new markets, the company aims to harness the power of big data, which the OG Wellness president believes "will transform the prospects of rehabilitation".

"By utilizing big data, we're able to clarify the relationship between the protocol menu and the condition of the disease, leading to the optimization of treatment," says Mr. Okuda.

"Our aim is to create a society where we can all enjoy long and active lives. As a wellness creator and provider, it is our mission to think ahead and develop products for customers in need. We will always seek to serve our customers by working closely with the finest clinical, rehabilitation and nursing specialists in the field."

Momotani Juntenkan: The beginning of modern Japanese cosmetics

With its original BIGANSUI product, Momotani Juntenkan has helped shape the modern cosmetics industry in Japan.



"The means to provide 'Beauty' are unlimited."

Seichiro Momotani, President, Momotani Juntenkan

Established during the Meiji period, Momotani Juntenkan was founded in 1885 (Meiji 18) by then 22-year-old pharmacist Masajiro Momotani, who created the lotion BI (beauty),

GAN (face), and SUI (water) for his wife who suffered from acne.

The story goes that upon using the so-called "BIGANSUI", Momotani's wife's pimples were completely healed. The news spread quickly through Japan and across the world, and the rest, as they say, is history.

"Junten means 'to follow the will of the universe and render services to people,'" says current company president Seichiro Momotani, and he continues to carry on this belief 137 years later.

An institute created for the purpose of developing and researching cosmetics has stood

since 1913, the same year Masajiro's second son, Kanjiro Momotani, received a prestigious award that led to the Japanese imperial family becoming one of the company's prize customers.

Fast forward to the 1930s, and the company has started to develop products such as MEISHOKU Cleansing Cream and MEISHOKU Astringent Lotion, the latter going on to become the best-selling cosmetic products in Japan.

1993 was another big year as the company split into three, with Momotani Juntenkan taking responsibility for the group's management strategy, Meishoku Cosmetic operating in the general market and Cosmetec Japan overseeing the OEM/



Osaka Headquarters

ODM business. This was the driving force behind the growth of the Momotani Juntenkan Group.

Furthermore, Seichiro Momotani's establishment of five independent research institutes, spanning from basic research to product development and cutting-edge technology research, further strengthened the R&D capabilities and opened up new possibilities for the group. This has led to a significant strengthening of the competitiveness of the OEM business in particular.



MOMOTANIJUNTEKAN

www.e-cosmetics.co.jp

Cosmetec Japan looking to provide new and innovative beauty products to the world

As an OEM of beauty products, Cosmetec Japan is using its unique technology and know-how to make the world a more beautiful place.

"Cosmetec Japan," representative director Kensuke Fujimoto explains, "is not just a manufacturer, but a total producer, from marketing and planning proposals to formulation, manufacturing, regulatory compliance and sales strategies."



R&D Center

Not only is the company a byword for innovation; its high-quality products are also regarded by overseas clients as presenting a snapshot of Japan.



"Our creed is to deliver excellent products with added value to the world, bringing satisfaction to our client companies and customers alike," Mr. Fujimoto states.

Indeed, Cosmetec Japan's motto is *Zero to One*, emphasizing the group's status as a market-creating OEM, which generates new value from scratch.

More than that, however, Cosmetec Japan is a pioneer

within the Momotani Juntenkan Group and enjoys a symbiotic relationship with its parent company.

With some 60,000 formulations at its disposal, meanwhile, the company really does make every effort to meet the needs of all its clients.

The global pandemic may have made a dent in the cosmetics industry worldwide, but Mr. Fujimoto believes recovery is just around the corner: "Men's cosmetics is a growing area, and Gen Z men will become regular users of cosmetics and skincare."

Growth may be important, but it is far from the be-all and end-all. "There are many opportunities in the cosmetics industry, so I am not worried about fluctuations in the overall market. I



"Our policy has always been not only to hold the market, but to create new markets, and thus create new opportunities for growth."

Kensuke Fujimoto, Representative Director, Cosmetec Japan

am not committed to sales," Mr. Fujimoto concludes. "I am committed to making people happy."



COSMETEC JAPAN

cosmetecjapan.com/english

Ryukakusan: Innovative sore throat relief since the Edo Period

Blending tradition and innovation, Ryukakusan continues to be Japan's go-to brand for sore throat relief.



"Our company has been tending to the throats of Japanese people for 200 years."

Ryuta Fujii, President,
Ryukakusan Co., Ltd.

Since the Edo Period, Ryukakusan has been a constant in the lives of millions of Japanese people, especially those dealing with throat discomfort. Current president, Ryuta Fujii, rebuilt a failing business when he took over almost three decades ago and explains some of the issues facing the company today.

"The biggest challenge right now is the rapidly declining birthrate and aging society. There is also an increasing cost of medical expenses due to advancements in technology, which cannot be covered by our budget. We also have to find a way to compensate for the continually growing government deficit, caused, in part, by the high ratio of prescription compared to over-the-counter medicines. The latter accounts for around 10% of drugs consumed

in Japan, with most advanced nations at about 50%."

As a member of a government-sponsored social welfare committee, Mr. Fujii is very aware of the problems surrounding health needs.

"Cutting-edge technologies in medicine and medical devices are crucial because they can save the lives of patients with serious diseases, but there is an imbalance in terms of paying for medical services provided," he says. "Many of these treatments are covered by public funds, but we need to focus more on preventive care instead of advanced technologies.

"I come from a family of eight generations, all the way from the Edo period, originally doctors responsible for the Akita community. There were no medicines or advanced devices and people took care of themselves to prevent diseases, which is the basis of our products and care. Forgetting to put forth efforts to stay healthy can lead to a critical situation. We cannot blame anybody for this."



Ryukakusan

And it is the technology behind the product range that helps Ryukakusan stand out from the competitive crowd.

"Our flagship product Ryukakusan acts directly on the

throat mucosa to relieve symptoms," explains Mr. Fujii. "It is characterized by advanced techniques for making herbal medicines into a fine powder, something other manufacturers often do not want to develop due to the risk of cross-contamination.

"This technology is used to knead Ryukakusan herbal powder into other products such as lozenges and tablets. It is rather difficult to imitate our product.

"Ryukakusan Direct, one of our latest offerings, is an improved version of Ryukakusan in a new granule formulation that is taken without water and dissolves like light snow. Each serving is individually packaged, making it easy to take anywhere and anytime. Our R&D is not about developing new drugs like large-capital companies, but constantly evolving by further advancing and maturing our core technologies and proposing innovative solutions in response to market demands."

So to the company's overseas expansion and an original strategy for success in China.

"We successfully appointed authorized distributors in Taiwan and Korea almost 60 years ago, and we've done the same in Hong Kong and the United States," says Mr. Fujii. "Instead of expanding into China, however, we collaborated with various household medicine manufacturers and promoted our products via exhibitions. This approach has been very effective and, with help from our social media strategy, our cross-border e-commerce sales to China have grown significantly. After building a founda-

tion in this way, we started general trade to China.



Ryukakusan herbal throat candy

"The success in China has had a ripple effect, with other neighboring countries wanting to sell our products too, including those from ASEAN. Japanese products are highly valued globally because it is known that local consumers pay close attention to detail and demand high-quality."

With an acute awareness of how product marketing changes from generation to generation, Mr. Fujii is confident about the future of Ryukakusan.

"It is said that people's lifestyles change every 30 years. I became president at the age of 35 and rebuilt the business, but I do not believe that we should impose my way of doing things on the next generation in the future.

If the next generation of managers anticipate changes in the global situation and seek management innovation, it is my role to give them enough time to consider it fully, and I have done that.

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株式会社 龍角散
Ryukakusan Co., Ltd.

www.ryukakusan.co.jp/top/en



Ryukakusan
Direct