

# YOKOHAMA'S MAJOR INDUSTRIES

## LIFE SCIENCE

### *An established life science cluster with growing potential*

In October 2018, BioJapan, Asia's largest international convention in the biotechnology industry, celebrated its 20th anniversary meeting at its beloved home, the Minato Mirai 21 district of the City of Yokohama. The large-scale annual partnering event, which invites 900 organizations from 30 countries and hosts an estimated 9,000 business meetings over the course of three days, has chosen to return to PACIFICO Yokohama, the highly acclaimed international convention center in Yokohama, year after year as their prime conference location.

It is no coincidence that Asia's largest biotech event has been hosted in Yokohama all these years. Kanagawa prefecture was named by the Japan External Trade Organization (JETRO) as one of the three top prefectures to be recommended to foreign businesses seeking to enter Japan's healthcare market, and Yokohama is a major driver of the Kanagawa economy. The city has had a long and constructive relationship with the life science industry. Yokohama pinpointed the growth potential of life science related industries early on and began actively investing in the area as early as 30 years ago. In the 1990s, the city created the Kanazawa Bio Park in its southernmost district, which was a visionary bio-



tech R&D district that captured the industry's attention by attracting major players such as Kirin Company, Ltd., Japan Tobacco Inc., and Shiseido Company, Limited.

Since then, Yokohama has continued to invest in the life sciences, gradually building up a reliable infrastructure for promoting advanced R&D. Some major milestones include the attraction of RIKEN, Japan's largest and most comprehensive research organization for basic and applied science, and the establishment of the Joint Graduate School of Medicine Program by the Yokohama City University (YCU), which aims to strengthen educational collaboration in advanced research in the field of medicine. YCU is also recognized for its leadership in educating highly skilled medical professionals through unique programs such as the Training Program for Oncology Professionals, and has been designated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) as one of the leading institutions in medical workforce development. Among YCU's faculty is Dr. Takanori Takebe, who holds a joint appointment at the Cincinnati Children's Hospital Medical Center and is known for his extensive work on human stem cells (iPSC).

Today, the life science landscape in Yokohama also includes leading institutions such as the Tokyo Institute of Technology (TI-TECH) and Keio University, and R&D facilities of companies such as AGC Inc., Mitsubishi Tanabe Pharma Corporation, Meiji Seika Pharma Co., Ltd., and Ricoh Company, Ltd. The rigorous research climate has attracted various life science companies, both large and small, to the region. SAKATA SEED CORPORATION, a global leader in vegetable and ornamental seed production that has several research locations within the US and sells seeds to over 170 countries, is headquartered in Yokohama. A number of foreign-owned companies have also chosen to locate in the region, such as PerkinElmer Japan Co., Ltd. and Thermo Fisher Scientific K.K. Today, there are close to 6,000 life science establishments in Yokohama, which include pharmaceutical and medical device companies, major hospitals, and up-and-coming biotech startups.

### *Ready for innovation and cross-border collaboration*

Throughout history, Yokohama has been known as an open-minded port city that welcomes new peoples, cultures and ideas. This strength is evident in the city's abundant mechanisms to support and promote cross-industry and international collaboration, which is crucial to ensure the continued growth of its life

science industry. In 2016, the city launched its very own Yokohama Life Innovation Platform (LIP.Yokohama), a scheme that aims to strengthen collaboration between various stakeholders to create innovative projects that support R&D and commercialization projects led mainly by small and medium-sized enterprises (SMEs). The platform is populated by companies, universities and research institutions that have committed to LIP.Yokohama's ethos of collaboration which includes global companies such as Pfizer Inc. and Takeda Pharmaceutical Company Limited, and promising startups that have succeeded in raising capital for their young businesses such as JITSUBO Co., Ltd., J-Pharma Co., Ltd., PRISM Pharma Co., Ltd., and ReproCELL Inc., Through the platform, the city has hosted numerous matching events, seminars, and exchanges between members, promoted collaboration with overseas life science clusters, and managed grant programs and other financial schemes to help SMEs trying to commercialize their latest discoveries. The Kihara Memorial Yokohama Foundation for the Advancement of Life Sciences and the Yokohama Industrial Development Corporation (IDEC Yokohama) have provided substantial support to be directed at startup companies and SMEs through this scheme, and the city has also signed an MOU with Biocom Life Science Association of California (BIOCOM) in April 2017 promising future collaboration and exchange with

the largest cluster advocacy organization in California.

The city has also been promoting innovative collaboration projects between medical, IT, and manufacturing communities, which is evident in its efforts to mesh initiatives carried out by its two major innovation platforms, LIP.Yokohama and ITOP Yokohama. ITOP Yokohama fosters innovation in the areas of Internet of Things (IoT), big data, artificial intelligence (AI) and robotics, and the city is looking to apply these new technologies to health and medical fields in order to accelerate breakthroughs in the development of new technologies and products, such as cutting-edge medical devices.

The city also has mechanisms to support entrepreneurs that own startup businesses. There are several centers which provide services to young life science companies in the area, such as the Venture Plaza jointly operated by the city, the Kanagawa Prefecture, the Organization for Small & Medium Enterprises and Regional Innovation and TITECH, and an incubation center operated by IDEC Yokohama. The Economic Affairs Bureau of the City of Yokohama has held a series of venture pitch events since 2015 to help connect entrepreneurs to prospective investors and partners, and their 2017 and 2018 events both focused on life science startups.

### Initiatives

**LIP. Yokohama:** A platform intended to promote the collaboration of industry, government and academia to ensure a sustainable stream of innovation from Yokohama in the health and medical fields. Initiatives include creating innovative projects from the network of entrepreneurs and academic institutions, supporting SMEs and venture firms in commercialization efforts, and promoting the development of new technologies and products.

Website: <http://translate-en.city.yokohama.lg.jp/keizai/sogyo/life/lifepf.html> (Japanese, with auto-translation)

Brochure: <http://www.city.yokohama.lg.jp/keizai/yuchi/sinsyutu-e/pdf/lipyokohama.pdf>

**Medical & tech collaboration projects:** Yokohama promotes innovations in medical device R&D through accelerating meaningful collaboration between companies, medical institutions, R&D institutions, academics, etc. To promote synergy between the medical community and manufacturing industry in Yokohama, the City supports collaborative opportunities between stakeholders in these two fields.

Website: <http://www.city.yokohama.lg.jp/keizai/sogyo/life/index04.html> (Japanese only)

**Yokohama Kanagawa Bio-Business Network:** In Yokohama and surrounding areas in Kanagawa, there are many universities and research institutions with advanced bio-related research seeds, as well as companies and bio-ventures that can turn these scientific discoveries into new products. There is also a growth of surrounding industries. By strengthening the network between these bio business leaders, the organization aims to give birth to innovative products that will vitalize the regional economy and improve the quality of life of people. The Kihara Memorial Yokohama Foundation for the Advancement of Life Sciences operates the Network.

Website: <https://www.yk-bio.net/en/index.html>

**Life Innovation Comprehensive Special Zone:** Kanagawa Prefecture, Yokohama City, and Kawasaki City are part of a government designated "Special Zone" in the Keihin waterfront area that specializes in life science innovation and globalization. The Special Zone was designated in 2011, with its overall goal to spur economic growth and innovation in the life science sector while making full use of existing industrial assets in the region. Major initiatives include supporting global companies to take the lead in stimulating the growth of pharmaceutical and medical device industries in the region.

Website: <https://www.keihin-tokku.jp> (Japanese, with auto-translation)

### References

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- Yokohama City University Training Program for Oncology Professionals: <http://www-user.yokohama-cu.ac.jp/~yganpro/about-us/>
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