Flow Chart of main support measures

- **Business Idea**
  - Technology/needs identification, business idea creation

- **Project Development**
  - Technology verification, business idea development, prototype development

- **Grant**
  - Idea verification, data backing, prototype development
  - LIP Yokohama Trial Grant
    - Target: SMEs, universities, research institutes, hospitals, NPO corporations, etc.
    - Limit: 1 Million yen
    - Grant rate: Within 10/10

- **Matching event**
  - LIP Yokohama Open Innovation Conference V

- **Support for creating technical illustrations**
  - Careful individual consultation suitable to each party’s stage and support from the coordinator

- **Promotion of collaboration between medicine and engineering**
  - Support for enhancing public relations in the health and medical fields, in cooperation with the Communication Design Center (YCU-CDC) in the Advanced Medical Research Center at Yokohama City University

- **Financing support (Pitch event)**
  - “The 13th Yokohama Venture Pitch” (Life Science Field)
    - Dec 2019

- **Overseas development**
  - “LIP Yokohama Open Innovation Conference V”
    - Matching event between major companies in various fields and small and medium-sized enterprises
  - “The 4th LIP Yokohama Network Seminar”
    - Presentation of R&D projects that have received research grants from the “LIP Yokohama Trial”
    - Dec 2019

- **Technology/Needs Presentation**
  - “The 4th LIP Yokohama Network Seminar”
    - Presentation of R&D projects that have received research grants from the “LIP Yokohama Trial”
    - Dec 2019

- **Support for participating in exhibitions**
  - “Exhibiting in BioJapan 2019, MEDICA, COMPAMED 2019, and CIIE 2019
  - “First-time for the city to participate in ‘BIOCOM DEVICEFEST & DIGITAL HEALTH Conference’

- **Healthcare Business**
  - In the Yokohama Wellness Partners, holding general meetings, exchange meetings, matching meetings, etc.
  - Conducting a “Survey on issues” of medical and nursing care sites, and soliciting proposals from companies for solutions to their problems

- **National Strategic Special Zones and Comprehensive Special Zones for International Competitiveness**
  - Support for the realization of new business plans by taking advantage of the merits of special zones, such as exceptional measures on regulations, tax support, financial support, and funding support

https://businessyokohama.com/home/major-industries/life-science/

LIP Yokohama is also introduced on this website:
The City of Yokohama recognized the growth potential of the life science industry early on. To promote this growth, the City has supported the establishment of incubation facilities. Currently, enterprises, universities, and research institutes located in the city are engaged in a variety of research and development projects.

### History of Life Innovation in Yokohama

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988–93</td>
<td>Creation of the Kanazawa Bio Park (industrial complex)</td>
</tr>
<tr>
<td>2000</td>
<td>Opening of RIKEN to set up the (former) Yokohama Institute</td>
</tr>
<tr>
<td>2001</td>
<td>Establishment of the Yokohama Joint Research Center (incubation facility)</td>
</tr>
<tr>
<td>2003</td>
<td>Opening of Yokohama Leading Venture Plaza 1 (incubation facility)</td>
</tr>
<tr>
<td>2005</td>
<td>Opening of Yokohama Leading Venture Plaza 2 (incubation facility)</td>
</tr>
<tr>
<td>2006</td>
<td>Establishment of Advanced Medical Research Center of Yokohama City University</td>
</tr>
<tr>
<td>2009</td>
<td>Opening of the Yokohama Biotechnology Industry Center (a rental R&amp;D facility for biotech enterprises)</td>
</tr>
<tr>
<td>2011</td>
<td>Designation of Life Innovation in Keihin Coastal Areas Comprehensive Special Zones for International Competitiveness</td>
</tr>
<tr>
<td>2012</td>
<td>Completion of Advanced Medical Research Center Research Building of Yokohama City University</td>
</tr>
<tr>
<td>2014</td>
<td>Designation of a National Strategic Special Zone in Yokohama</td>
</tr>
<tr>
<td>2015</td>
<td>Launch of Yokohama Medical Equipment Study Group</td>
</tr>
<tr>
<td>2016</td>
<td>Launch of Yokohama Wellness Partners</td>
</tr>
<tr>
<td>2017</td>
<td>Memorandum signed with BIOCOM (San Diego, USA)</td>
</tr>
<tr>
<td>2019</td>
<td>Declaration of Innovation City Yokohama</td>
</tr>
<tr>
<td>2019</td>
<td>Establishment of LIP: YOKOHAMA BIIBIO</td>
</tr>
</tbody>
</table>

### Yokohama’s Creation of Bio Clusters

The city has a high concentration of universities and research institutes starting with the RIKEN Yokohama Campus as well as a large number of manufacturing and information communications companies, creating a favorable environment for research and development in the field of health and medicine.

<table>
<thead>
<tr>
<th>City</th>
<th>Number of Enterprises</th>
<th>Research Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kanagawa</td>
<td>313</td>
<td>Universities and research institutes</td>
</tr>
<tr>
<td>Tokyo</td>
<td>3,104</td>
<td></td>
</tr>
<tr>
<td>Osaka</td>
<td>24,460</td>
<td></td>
</tr>
<tr>
<td>Tokyo Metropolitan</td>
<td>53,040</td>
<td></td>
</tr>
<tr>
<td>Osaka Metropolitan</td>
<td>70,340</td>
<td></td>
</tr>
</tbody>
</table>

### References

- Yano Research Institute Ltd. (as of Sept. 2018) Enterprises with their head office in Kanagawa Prefecture
- Source: Number of enterprises and research facilities by prefecture (January 2015), published by the Japan Bioindustry Association

Promotion of Life Innovation

In light of Japan’s progression as a super-aging society, it is expected that the market for businesses involved in healthcare equipment and the health & medical field in general, especially in the fields of extension of life expectancy and preventive medicine, will expand in the future. Against this backdrop, the City of Yokohama plans to actively support innovative initiatives in the health & medical field.
The City of Yokohama aims to achieve synergy between IoT technologies and health & medical initiatives by linking its two platforms (LIP: Yokohama and I-TOP Yokohama)\(^*\).

\* I-TOP Yokohama is an open innovation platform aimed at creating new businesses, solving social problems, and supporting small and medium-sized enterprises (SMEs) that utilize IoT and take advantage of the "concentration of manufacturing and IT industry" that is a source of strength for Yokohama’s economy.

In January 2019, Mayor Hayashi declared Yokohama an Innovation City. Together with local companies and universities, the city will work to further business creation and exchange amongst professionals throughout the city. Under the slogan “YOXO", which stands for Yokohama Crossover, the City of Yokohama will work toward the creation and development of new businesses in collaboration with commercial industry, academic, government, and financial institutions.

At “YOXO BOX,” an exchange hub for venture companies established in the Kannai area in October 2019, the city is implementing support programs for venture companies and entrepreneurs and also hosting event to promote exchange amongst innovative professionals.
Collaborating Organizations

LIP Yokohama aims to create new health & medical technologies and products in Yokohama through collaboration between industry, academic, government, and financial institutions. Organizations that agree to contribute to LIP Yokohama related initiatives will participate in the platform as “collaborating organizations.”

Universities and Research Institutions in Yokohama participated in LIP: Yokohama

As the only comprehensive natural science research institute in Japan, RIKEN, with bases in various locations across the country, promotes research in a wide range of fields. The RIKEN Yokohama Campus is home to four research centers that explore life science and the environment; the Center for Integrative Medical Sciences, Center for Biosystems Dynamics Research, Center for Sustainable Resource Science and RIKEN SPring-8 Center.

Yokohama City University excels in the fields of cancer, regenerative medicine, and infectious diseases, with a world-class level of research activity. The Fukuura Campus has become a site for translational research, with the School of Medicine, University Hospital, and Advanced Medical Research Center closely located. The Tsurumi Campus has a joint graduate school program with RIKEN, and provides a world-class research environment.

Taking advantage of its location in the simultaneously global and local city of Yokohama, Kanagawa, Yokohama National University is poised for the global 21st century. In order to achieve its goal of global excellence as an international education hub, the university openly collaborates with businesses from around the world in a variety of sectors and prioritizes contribution to society as well as interdisciplinary education and research.

Tokyo Institute of Technology is committed to reforming education, research, and governance with the aim of becoming one of the top ten research universities in the world. At the Suzukakedai Campus, we set up the “Institute of Innovative Research” consisting of multiple research institutes, research centers, and research units, and are promoting leading research in a wide range of fields such as the life sciences, materials, and energy.

At the Yagami Campus located in Kohoku Ward, research activities focusing on science and technology are underway, and by using Keio Leading-edge Laboratory of Science and Technology (KLL) as a window for collaborating between industry-academia-government, we promote giving back to society via cutting edge research results and research collaboration with companies. It is also characterized by strong collaboration within the university, such as medical-engineering collaboration that makes use of Keio’s strength as a comprehensive university.

Two support organizations

Careful individual consultation suitable to each party’s stage and support from the coordinator from the support organizations “Kihara Foundation” and “IDEC Yokohama”

The Kihara Memorial Yokohama Foundation for the Advancement of Life Sciences (Kihara Foundation) was established in 1985 to commemorate Dr. Hitoshi Kihara. Dr. Kihara achieved world-class results in the fields of genetics and evolutionary biology, primarily with a focus on wheat research, and he established the genome concept as a world first. As an affiliate organization of the City of Yokohama, the foundation encourages life sciences research and supports R&D and business development in the field of life sciences.

LIP: Yokohama provides support primarily to life sciences and bio-related SMEs in Yokohama. LIP: Yokohama strives to uncover promising ideas, business seeds, and technologies held by enterprises and academia in Yokohama, developing them via matching and project development to promote practical application and social implementation.

Yokohama Industrial Development Corporation is the only SME support center in Yokohama designated by the mayor of the city through the Small and Medium-sized Enterprise Support Act. The corporation’s coordinators support SMEs in the city when they need to collaborate with a large company or utilize the intellectual properties of universities in order to enter a new market or to develop new technologies.

LIP: Yokohama promotes collaboration between entities involved in medicine and engineering, primarily to develop medical devices and other technologies. It engages in activities designed to create business opportunities, such as the provision of information on the needs of the clinical field and matching with medical device manufacturers.
Development of new anticancer drugs  J-Phama Co., Ltd.

We are developing novel anticancer drugs for half of Japanese people who suffer from cancer, in the combination of “the anticancer drug JPH203 targeting only cancer cells” and “diagnosis for the efficacy of that anticancer drug” with Kyorin University, Osaka University, and Chiba University. As for the new anticancer drug JPH203, Phase I clinical trial to confirm safety has been completed, while Phase II clinical trial to demonstrate its efficacy is being conducted.

- Utilization of a grant from the City of Yokohama to promote R&D
- Kihara Foundation’s Support
  - Business development consulting
  - Business Matching
  - Grant application support
  - Provision of information related to research and development

New anticancer drug JPH203

Catheter with selective infusion function  Piolax Medical Devices, Inc.

We succeeded in the commercialization of LOGOSSWITCH®, a proximal, side-hole, and microballoon catheter which has a selective blood vessel injection function activated by temporarily obstructing the blood vessel during endovascular treatment of liver cancer and the like. The tip of the catheter is obstructed simultaneous to the inflation of the microballoon, which makes it possible to effectively inject a drug solution from the side-hole of the catheter into the fine blood vessel leading to the area affected by the cancer.

- Utilization of a grant from the City of Yokohama to promote R&D
- During medical and engineering collaborations, we provide support in the form of individual consultations together with Yokohama Industrial Development Corporation (IDEC Yokohama) via the initiative for collaboration between medicine and engineering.

"Archelis"  NITTO Co., Ltd.

Archelis is a wearable chair developed due to clinical need for a “chair which can be put on.” NITTO developed a “wearable leg support device,” which reduces the muscle fatigue of doctors and other medical staff and enhances the stability of surgical procedures that require doctors and other medical staff to stay standing for long periods of time.

- Utilization of a grant from the City of Yokohama to promote R&D
- The project was supported through the Yokohama Industrial Development Corporation (IDEC Yokohama) via the initiative for collaboration between medicine and engineering.
- Yokohama City University cooperated in the prototype demonstration experiment. Doctors actually used the prototype during medical operations and assessed/verified its usability, etc.
LIP. Yokohama and the Advanced Medical Science Research Center of Yokohama City University “Communication Design Center (YCU-CDC)” provided support to create technical illustrations (pictures and charts that visually convey scientific explanations and techniques). An illustration that provides a visual representation of a complicated mechanism, with a simple design that captures the core functions of the technology, can be effective means of demonstrating the selling points of a company’s technology and products.

The Yokohama Healthcare Consortium was formed by Sotetsu Group, NTT Docomo Group, the City of Yokohama, and others to develop a health & productivity management promotion program for employees of the city’s SMEs. Using wearable devices and dedicated apps, the consortium visualized the effects of health & productivity management, economized on manpower for collecting and managing health data, and provided health advice in line with individual values. This program helped people foster health awareness, and aimed to improve corporate productivity and promotion of the healthcare industry.

*Ministry of Economy, Trade and Industry Business Creation Projects and Business Selection Projects for the Industry for Extending Healthy Life Expectancy

【Details of support from Yokohama Wellness Partners】

- Recruitment of participant companies utilizing corporate networks
- Establishment of open innovation systems for participating companies

By introducing a nursing care facility to act as a demonstration test location, we were able to listen to the opinions of people working in the field to incorporate functions that will be useful on site.

When creating a technical illustration, I noticed features that I would not have noticed normally. By showing a good illustration at an exhibition, I didn't need to explain the introductory appeal of the product, making it easy to proceed smoothly to the technical explanation.

Using the “Yokohama Wellness Partners” network, we matched the company with nursing homes, and conducted demonstration tests for product improvement. We succeeded in creating a renewed monitoring system called “Aisleep” made for the purpose of securing the safety of elderly patients and reducing the workload for caregivers. It is possible to monitor respiratory rates, detect the state of sleep, and check when the patient gets out of bed with a pneumatic sensor.

Developing a health management promotion program for small and medium-sized companies in the city: Yokohama Healthcare Consortium

The Yokohama Healthcare Consortium was formed by Sotetsu Group, NTT Docomo Group, the City of Yokohama, and others to develop a health & productivity management promotion program for employees of the city’s SMEs. Using wearable devices and dedicated apps, the consortium visualized the effects of health & productivity management, economized on manpower for collecting and managing health data, and provided health advice in line with individual values. This program helped people foster health awareness, and aimed to improve corporate productivity and promotion of the healthcare industry.

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