Japan's Bioeconomy Strategy and Greater Tokyo Biocommunity



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Distribution of **Nobel Prize Laureates** by Country (from 2000 to 2022)

USA	75		
United Kingdom	24		
Japan	20		
Germany	13		
France	10		
🗢 Israel	6		
Canada	4		
Russia	4		
Switzerland	4		
🏝 Australia	3		
Italy	3		
Hereit Norway	2		
Sweden	2		
Ireland, China, Turkey,			
Belgium, Netherlands,			
Denmark, Austria			
New Zealand 1 each			

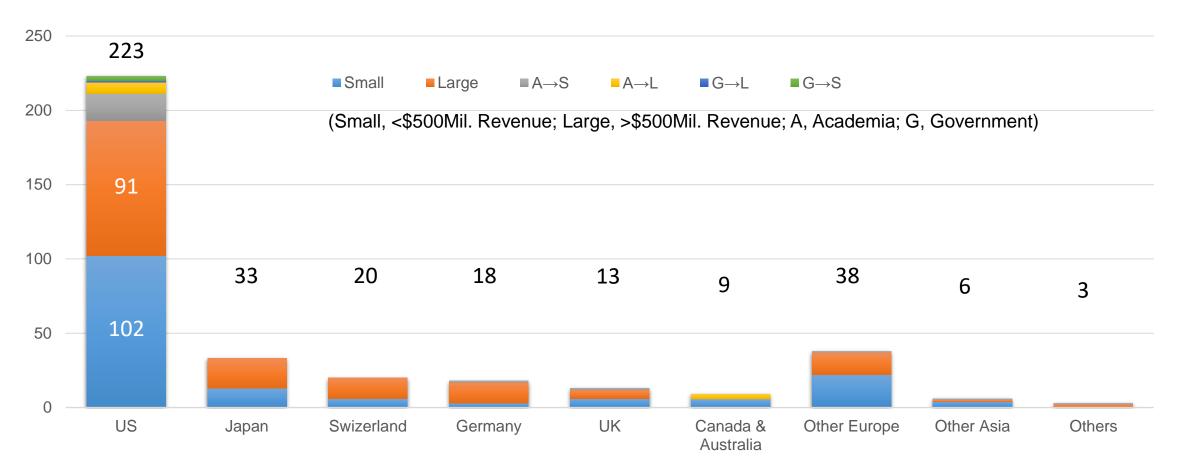


*Total number of three fields; [Physics, Chemistry, and Physiology or Medicine]

Counted by JBA based on the information on Novel Prize.org

Pharmaceutical Approvals by Geographic Location & Type of IP Originator 2011~2020(N=363)

Japan occupies the second place as the country with the highest number of FDA-approved pharmaceutical products.



Report "The US Ecosystem For Medicines, How new drug innovations get to patients, Government, Academia, Small firms, and Large firms, 2011 – 2020." Vtal transformation LLC, Dec 5, 2022.

The Top 100 Science & Technology Cluster 2022



(only Top 10 were shown)

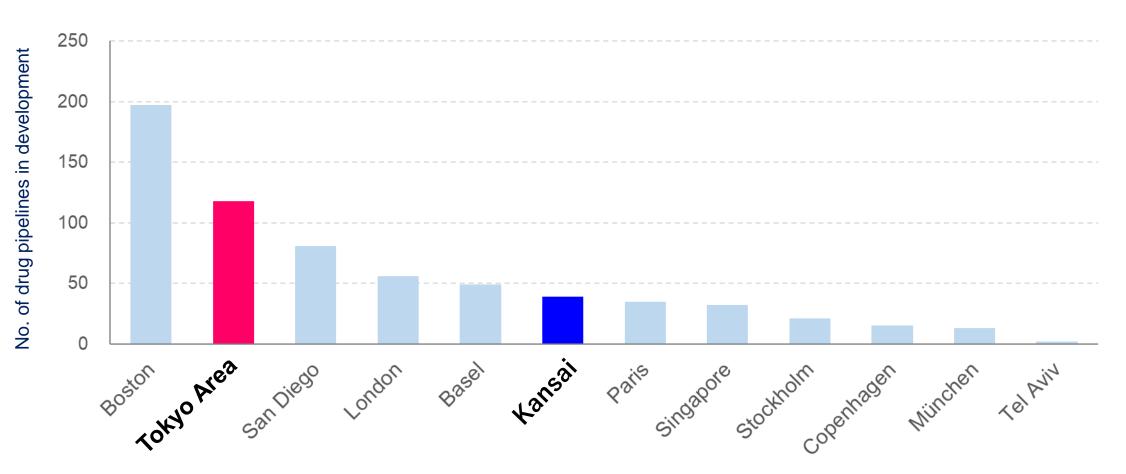
IPs & Publications

Rank	Cluster	Country	Share of total PCT filings ^{*1} (%)	Share of total publications ^{*2} (%)	Total (%)
1	Tokyo-Yokohama	Japan	10.7	1.6	12.3
2	Shenzhen-Hong Kong-Guangzhou	China/Hong Kong	8.2	1.9	10.1
3	Beijing	China	2.8	3.7	6.5
4	Seoul	Korea	4.0	1.8	5.8
5	San Jose-San Francisco	US	3.7	0.8	4.6
6	Shanghai-Suzhou	China	2.0	2.1	4.1
7	Osaka-Kobe-Kyoto	Japan	3.0	0.7	3.7
8	Boston-Cambridge	US	1.4	1.0	2.4
9	New York City	US	1.1	1.0	2.2
10	Paris	France	1.2	0.9	2.1

*1. Inventors listed in patent applications under WIPO's Patent Cooperation Treaty (PCT), spanning years 2016 to 2020

*2. Authors listed in scientific publications in the Web of Science's Science Citation Index Expanded (SCIE) and covering the same period. From WIPO "Global Innovation Index 2022"

Drug Pipelines in Development in 2021



Bio-related drug pipelines in the developmental stages from preclinical to Phase III were counted (as of the end of 2021).

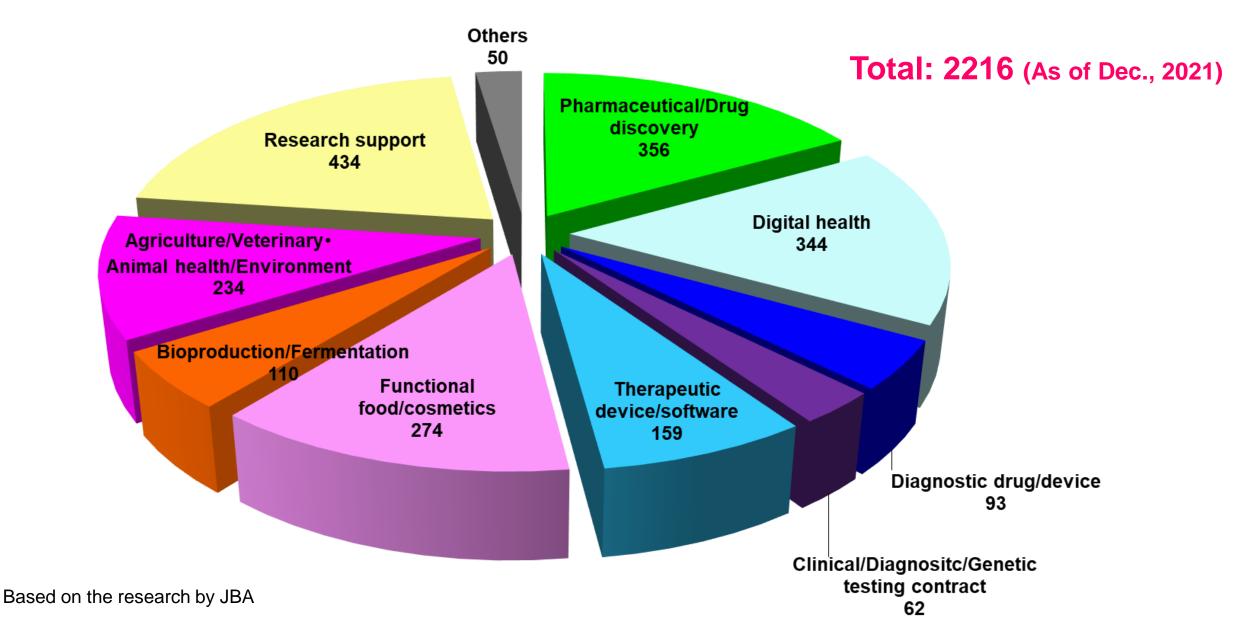
Data searched with BioMedTracker and "Asu-no-sinyaku" by Deloitte Tohmatsu

Startup Ecosystem Ranking 2021 (Life Science)

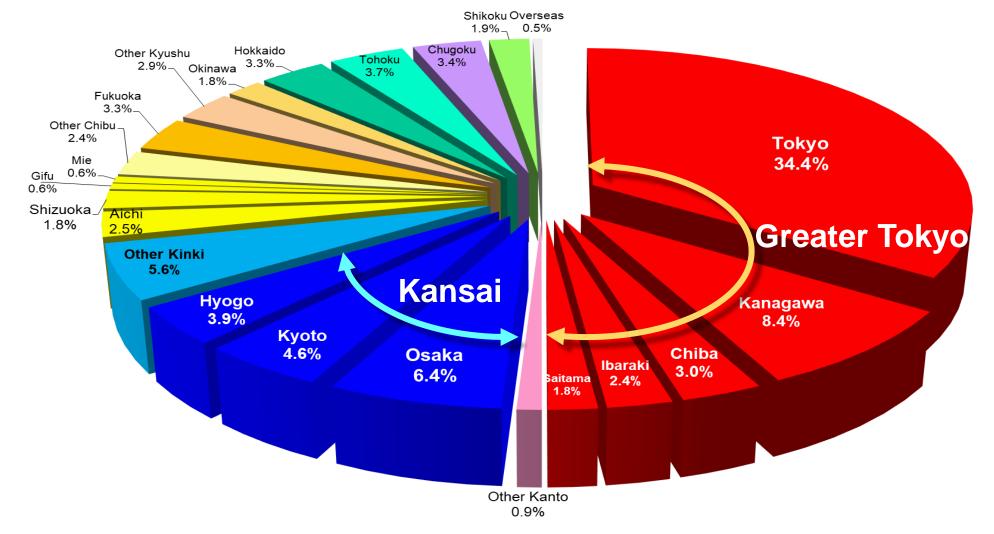
	Ranking	Performance	Funding	Knowledge	Talent	Infrastructure	Policy
Silicon Valley	#1	10	10	10	10	10	10
Boston	#2	10	10	8	9	10	10
New York City	#3	10	10	8	7	10	10
London	#4	9	10	7	10	10	6
San Diego	#5	10	9	8	4	9	10
Los Angeles	#6	7	7	8	8	8	10
Washington DC	#7	8	8	7	4	8	10
Philadelphia	#8	9	8	5	5	7	10
Shanghai	#9	9	9	10	5	4	4
Research Triangle	#10	8	6	4	9	5	10
Tokyo	#25	2	7	9	1	3	6

From: Startup Genome "The Global Startup Ecosystem Report 2021 Life Sciences Edition" (2021)

No. of Japanese Biotech Startups



Location of Japanese Biotech Startups



Biotech startups located in GTB and Kansai area occupy 50% and 14.9%, respectively.

From "Overview of Japanese Bio-related startups" (Kanto METI/JBA, 2020)



Realizing "World's Most Advanced Bioeconomy" Society by 2030

Expansion of market

Target: A total market size of \$840 billion in 2030 from current \$550 billion

Formation of biocommunity

Building value chains in each market area by creating diverse and unique communities across Japan and by supporting their continued growth.

Promotion of data linkage

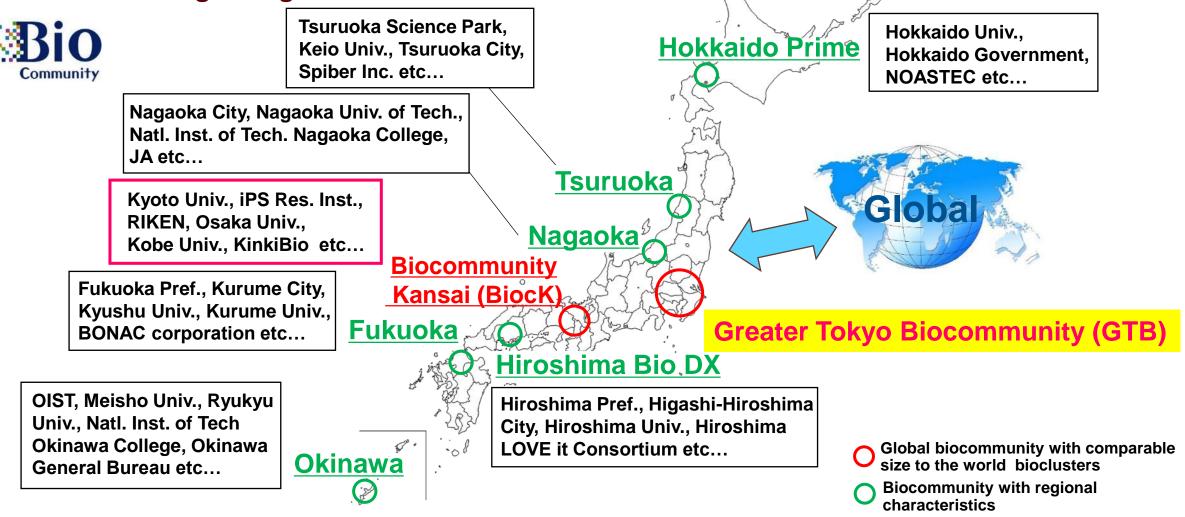
Creating an environment that allows for broad and flexible collaboration, including in different fields.

Japan's Leading Biocommunity



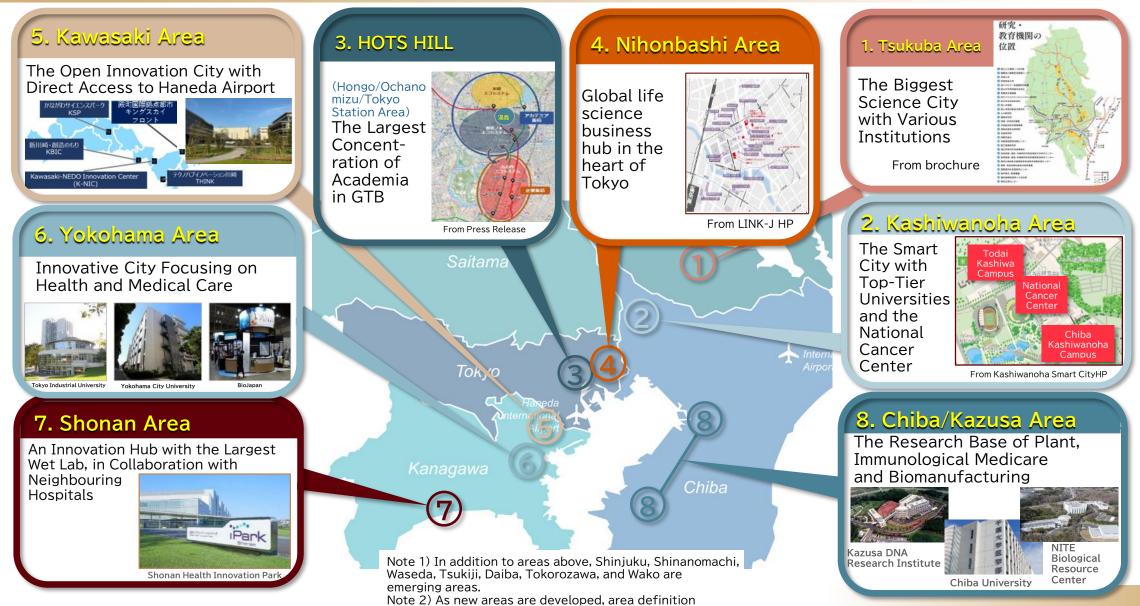
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Form an organic network with regional centers, with the international center at the core.
 Activate distinctive bio-industries throughout the country and promote the accumulation of excellent human resources and investment from Japan and abroad while also connecting with global clusters.



GTB Bio-innovation Promotion Areas





maybe restructured.

Structure of GTB Council



GTB council

Chair: Mr. Osamu Nagayama (President, JBA) Vice-Chair:

Mr. Manabu Miyasaka (Vice-Governor of Tokyo

Metropolitan Government)

Dr. Toshiya Watanabe (Vice-President, Univ. of Tokyo)



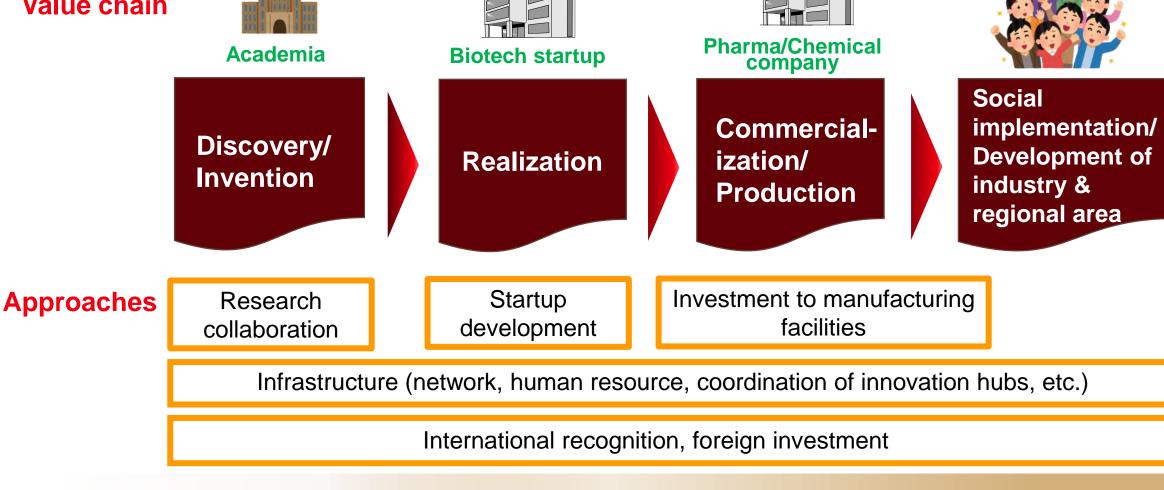
Mr. Nagayama Mr. Miyasaka Dr. Watanabe Established in 2021 Three chairs are from business, academia and government.



GTB: Goal and Approaches





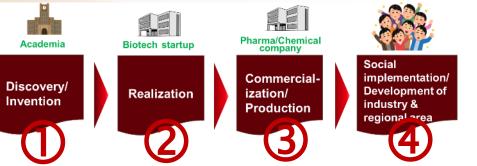


GTB Areas



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① **R&D**:

21 Government funded projects Total max. **~1.5 Bil. USD** / 10 years (2021-2030)

Incubation facilities: Total floor a
 Startup Support: ~1.4 Bil.

Total floor area of \sim 555,000 m²

~1.4 Bil. USD by Government (Estimated)

③ Bio manufacturing:

12 Biologics manufacturing sites or headquarters Subsidies of **~1.6 Bil. USD**

Private investment: Total >3.4 Bil. USD / ~2 years (2021-2023)

USD is converted from JPY by average exchange rate (\$1 = ¥124) through 2021-2023.

GTB Areas	Greater Tokyo Biocommunity		
Facts & Figures (As of August, 2023) Image: Sector of the startup of the sta			
① R&D:	21 Government funded projects Total max. ~1.5 Bil. USD / 10 years (2021-2030)		
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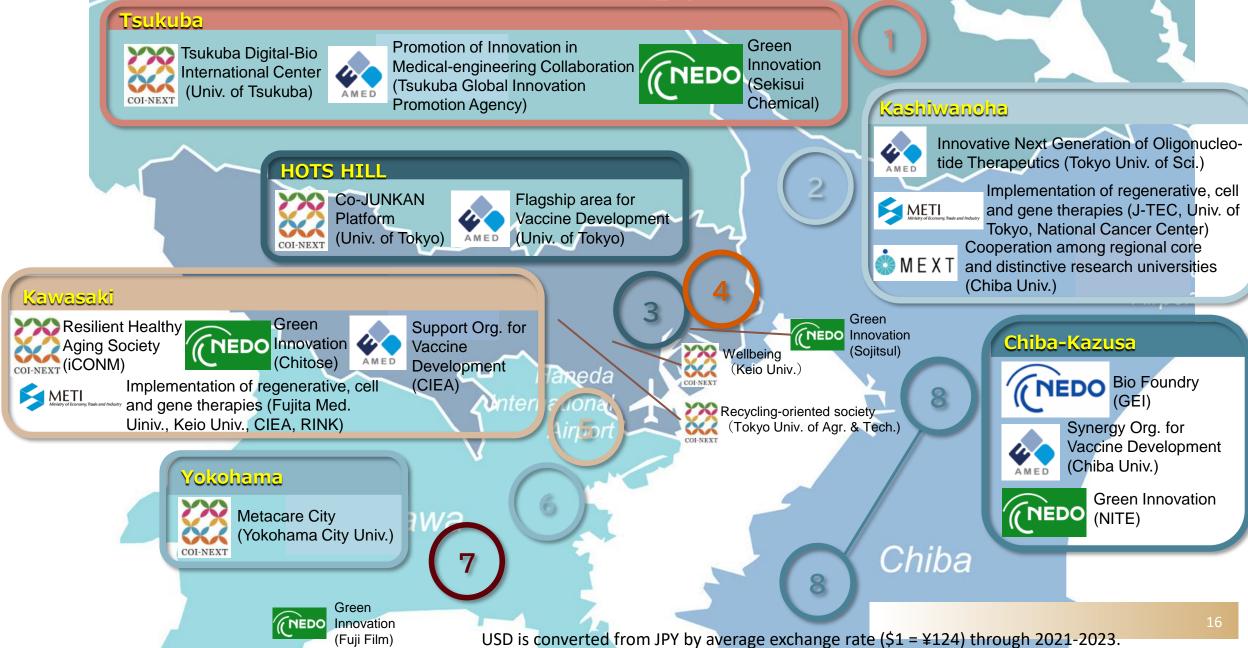
USD is converted from JPY by average exchange rate (\$1 = ¥124) through 2021-2023.

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R&D: National Projects (As of Apr., 2023)

21 Government funded projects Total max. **~1.5 Bil. USD** /10 yr (2021-2030)



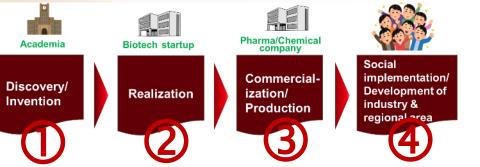






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① **R&D**:

21 Government funded projects Total max. **~1.5 Bil. USD** / 10 years (2021-2030)

 Incubation facilities:
 Total floor area of ~555,000 m²

 Startup Support:
 -1.4 Bil. USD by Government (Estimated)

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Private investment: Total >3.4 Bil. USD / ~2 years (2021-2023)

USD is converted from JPY by average exchange rate (\$1 = ¥124) through 2021-2023.

Starutp Support: Certified VC for Drug Discovery Ecosystem (As of Apr., 2023)



3. HOTS HILL

DCIパートナーズ ✓ 東大IPC UTEC

DCI Partners Co., Ltd. UTokyo Innovation Platform Co., Ltd. The University of Tokyo Edge Capital Partners Co., Ltd.

4. Nihonbashi

•		
•	ÓÓ	NEWTON BIOCAPITAL
•	() M	UFG

Remiges Ventures, Inc. Newton Biocapital Partners Mitsubishi UFJ Capital Co., Ltd.

Others

• CATALYS PACIFIC Catalys Pacific, LLC (Minato-ku)

Fast Track Initiative, Inc.

- D3 LLC (Shibuya-ku) 🔂 D3 LLC 8∞
 - **Eight Roads Capital Advisors Hong Kong** Limited (Minato-ku)
- saisei Saisei Ventures LLC (Shinagawa-ku)
 - JIC Venture Growth Investments (Minato-ku)
- JAFCO JAFCO Group Co., Ltd. (Minato-ku)

Total support: **2.8 Bil. USD** (domestic)

50% of Startups are located within GTB area.

Total support for GTB area by government: **1.4 Bil. USD** (domestic, estimated by JBA)

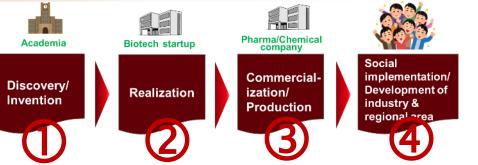


GTB Areas



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① **R&D**:

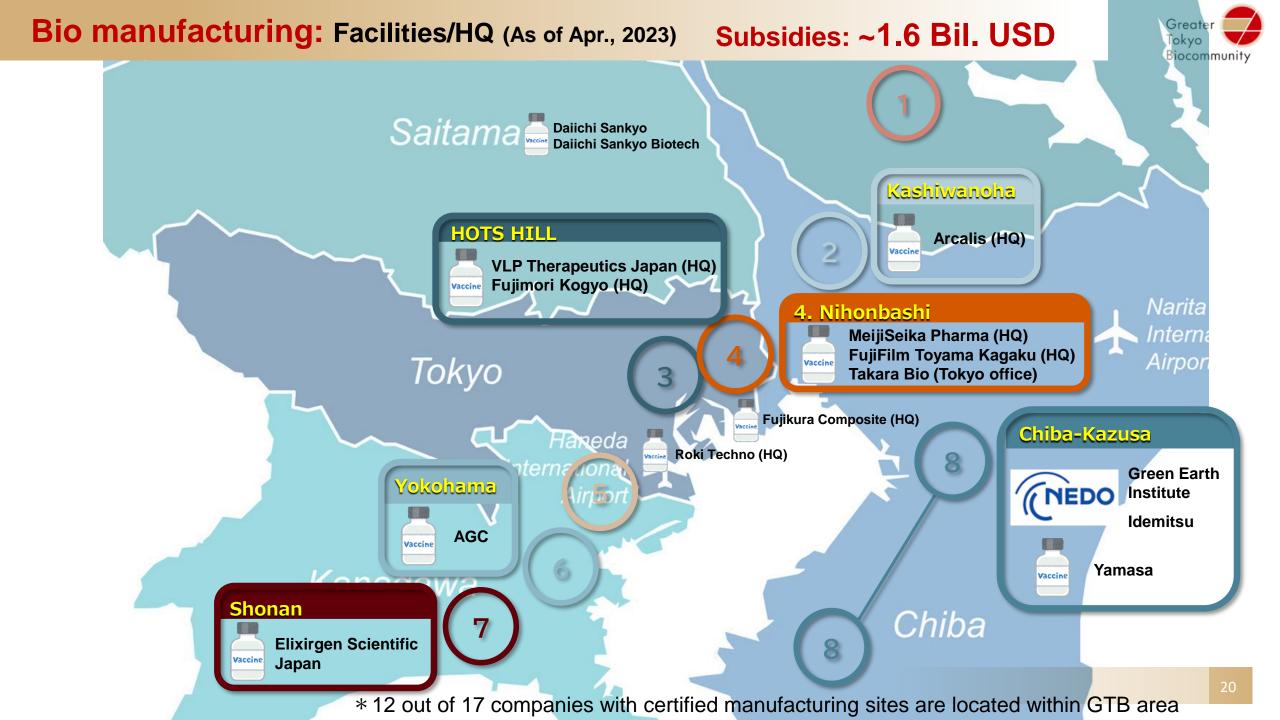
21 Government funded projects Total max. **~1.5 Bil. USD** / 10 years (2021-2030)

2 Incubation facilities: Total floor area of ~555,000 m²
 2 Startup Support: ~1.4 Bil. USD by Government (Estimated)

③ Bio manufacturing:

12 Biologics manufacturing sites or headquarters Subsidies of **~1.6 Bil. USD**

Private investment: Total >3.4 Bil. USD / ~2 years (2021-2023)

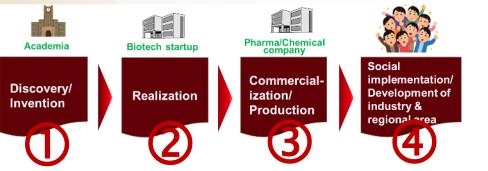


GTB Areas



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Facts & Figures (As of August, 2023)



① **R&D**:

21 Government funded projects Total max. **~1.5 Bil. USD** / 10 years (2021-2030)

Incubation facilities: Total for Startup Support: ~1.4

Total floor area of \sim 555,000 m²

~1.4 Bil. USD by Government (Estimated)

③ Bio manufacturing:

12 Biologics manufacturing sites or headquarters Subsidies of ~1.6 Bil. USD

Private investment: Total >3.4 Bil. USD / ~2 years (2021-2023)

Private Investment (Apr., 2021 to Jul., 2023) Total 3.4 Bil. USD /~2 years

Saitam

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Others

Japan Lyophilization Laboratory will establish a

manufacturing site for diagnostic medicines (-)

Toso will constract a research facility (58M)

>58 Mil. USD.



5. Kawasaki Area

Peptidream will construct laboratories (157.0M). Shimadzu opened "Shimadzu Tokyo Innovation Plaza" (16.1M). Fujita Medical Univ. will open "Innovative Medical Research Center" (-).

>173 Mil. USD

6. Yokohama Area

Hoop Partners opened rental lab. (12.1M incl. 1.8M of R&D related).

AGC introduced biopharmaceutical manufacturing site (2~300M).

Chigai Pharmaceutical opened research center (1368M).

Univaleo opened research center (95.8M). Resonac opened research center (51.5M).

>1528 Mil. USD.

7. Shonan Area

Takaosago International acquired old Chugai's research center (-).

Raised funds: Chordia (71M), PRISM (43.2M), Fimecs (26.1M), Reborna Biosciences (13.2M), Orizuru Therapeutics (10.3M), GexVal (9.9M), GenAhead Bio (1.2M), SEEDSUPPLY (1.4M) Noile-Immune Biotech was listed (177M).

>353 Mil. USD

3. HOTS HILL

Univ. of Tokyo and Kubota agreed to collaboration (80.5M/10 yr.). Green Earth Institute was listed (93.4M). Cyfuse was listed (99M). Moderna acquired OriCiro Genomics (85M). 358 Mil. USD

4. Nihonbashi Area

Mitsui Fudosan opened Mitsui Link Lab Shin-Kiba 2 & 3 (-). Eurofin acquired Repertoire Genesis (-). Medikit acquired Bolt Medical (-). Perseus Proteomics was listed (81.3M). Renascience was listed (81.3M). Susmed was listed (227.8M). CUORiPS was listed (79.7M). Others (205M) >916 Mil. USD

Chiba

1. Tsukuba Area

Eisai renovated Tsukuba Research Center (68.4M). **Prologis** constructed logistic center with incubation facility (-)

Nisshin Foods acquired real estate for manufacturing facility (104.6M)

>173 Mil. USD

2. Kashiwanoha Area

Teijin opened CDMO for regenerative medicine (-). **Astellas** opened open innovation site for cancer microenvironment (-).

H.U. Group opened a research center (-). Mitsui Fudosan constructed rental labs/offices (-). Mitsui Fudosan constructed hotel cooperative for National Cancer Center East Hospital (-).

>120 Mil. USD

8. Chiba/Kazusa Area

Startup companies originated from Chiba Uinv. raised funds (total of 24M).

Green Earth Institute opened "Satellite Research Labs" and "Biofoundry Research Labs" (-). Idemitsu will construct SAF manufacturing site (367M).

>392 Mil. USD

Converted by average exchange rate through 2021-2023: \$1 =¥124

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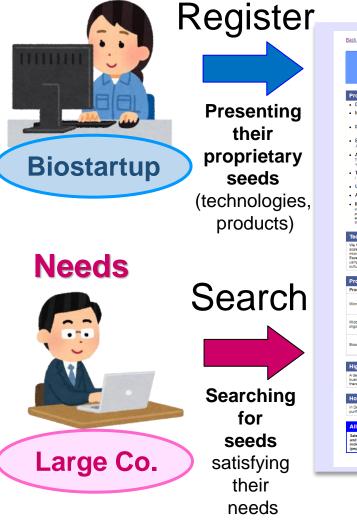
Seeds

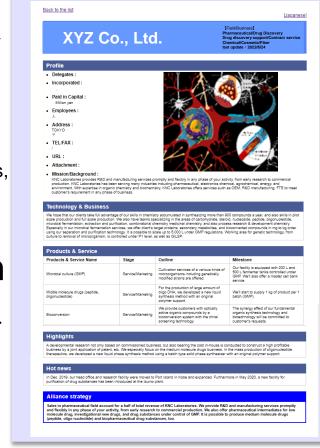
NPO Kinki Bio-Industry Development Organization ^{特定非営利活動法人} 近畿バイオインダストリー振興会議

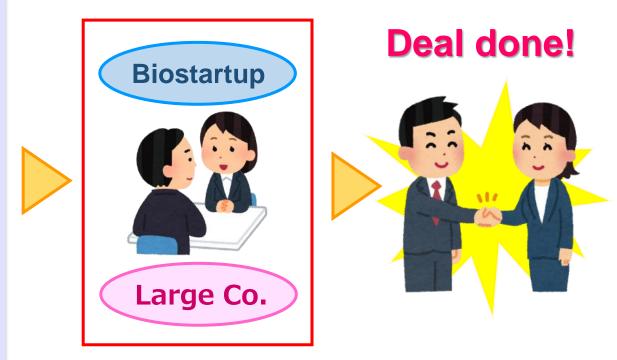
Bioventure Database



Providing the information on Japanese domestic biotech startups and their business activities

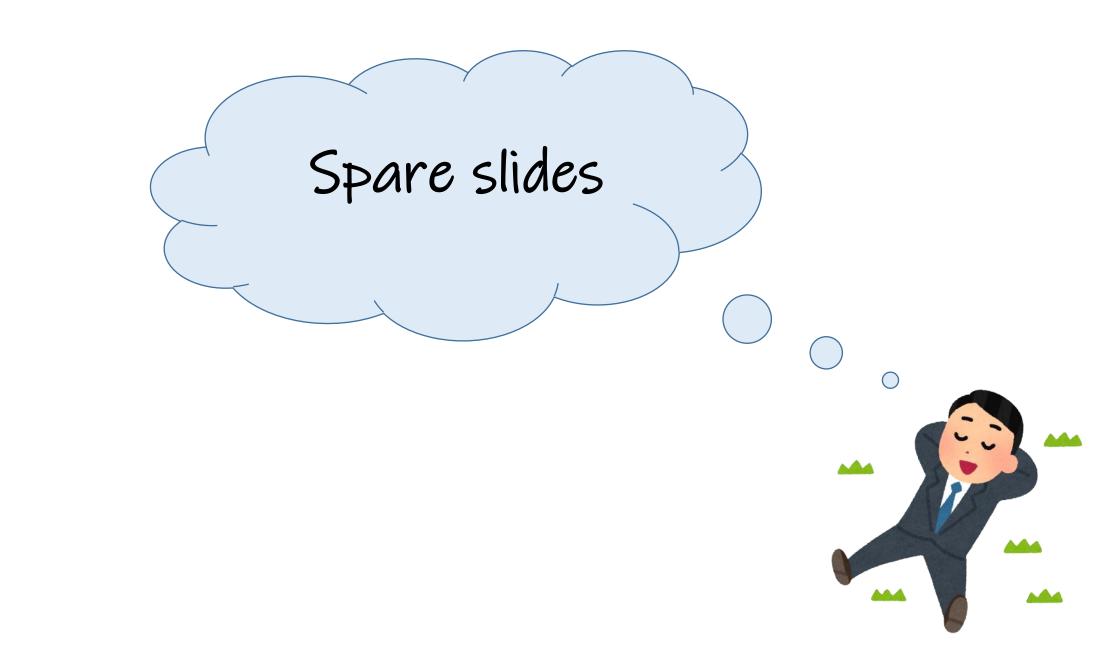




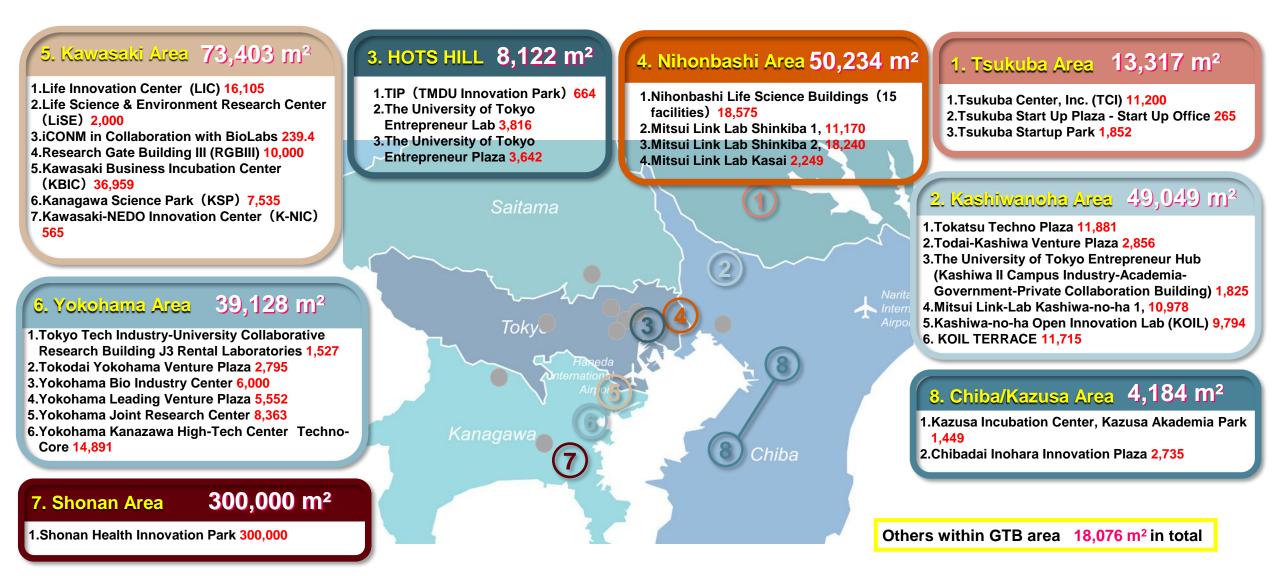


Currently, information on >150 startups is open to the public in English.

Link : https://area34.smp.ne.jp/area/table/5697/FDN_H3/M?S=lbsfn2mbnak Database is managed in collaboration with NPO Kinki Bio-Industry Organization.







Incubation: Acceleration activities (As of June, 2023)



5. Kawasaki Area

K-NIC: Consultation, business matching iCOMN: Collaboration with BioLabos King Skyfront: Tonomachi connect RINK: Tonomachi-based regenerative therapy network KSP: Support for entrepreneurship and growth

3. HOTS HILL

TIP: Innovation Idea Contest Univ. of Tokyo: FoundX Univ. of Tokyo IPC: 1stRound Beyond Next Ventures: BRAVE PLUG and PLAY JAPAN: Plug and Play Program

4. Nihonbashi Area

INDEE Japan: X-DOJO Beyond Next Ventures: BRAVE DCI Partners: Venture creation investment National Cancer Center: Accreditation system for certified ventures LINK-J: Out of Box Consultation

1. Tsukuba Area

Univ. of Tsukuba: Research Studio TGI: Support for medical device business TLSK: Pitch events, Young people's networking Tsukuba City: Startup ecosystem consortium TCI: Support for drug discovery and financing arrangements, innovation matching

2. Kashiwanoha Area

Asian entrepreneurship award (AEA) National Cancer Center/UTEC/Beyond Next Ventures: NCC Incubation Program Mitsui Fudosan/Kashiwa City: KOIL startup Program Kashiwa City/TX Entrepreneur Partners: Startup Concierge Business

8. Chiba/Kazusa Area

Chiba Pref.: Acceleration program of innovative venture enterprise growth, Chiba entrepreneur support business Chiba Univ.: JETRO's desk for industry-academy collaboration NITE: DBRP, Consultation for Cartagene Law

6. Yokohama Area

LIP Yokohama: Support for overseas expansion and development of human resources YOXO: Startup support by Yokohama City Tokyo Inst. of Tech.: START (Support for startup ecosystem creation), entrepreneurship education organization Tokyo Inst. of Tech./Beyond Next Ventures: BRAVE

7. Shonan Area

iPark: SAMURAI (Consultation), Venture Mentoring Service, Incubation Program Chiba