經濟部

TAIWAN

Biopharmacy Industry

Key Innovative Industries in Taiwan

Information Security	Next-Generation Vehicle	Communications Industry	Circular Economy	Green Energy
Biopharmacy Industry	Smart Machinery	Semiconductor Industry	Internet of Things	International Logistics and E-commerce

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Policy Initiatives —

Taiwan Precision Health Strategy Development Program

In order to build Taiwan as a hub for the biomedical industry in the Asia-Pacific region, our government launched the "Taiwan Precision Health Strategy Development Program" in May 2020 (note that precision health has been targeted as on of Taiwan's Six Core Strategic Industries). Under the Precision Health Strategy Development Program, our government is pursuing various strategies designed to build up Taiwan as a global leader in precision health and the development of high-tech solutions to epidemics. Those strategies include the following: (a) build a Taiwan Bio-Medical Data Commons; (b) develop high-precision disease prevention, diagnosis, and treatment systems; (c) develop high-precision epidemic prevention products; and (d) expand and seize upon international biomedical business opportunities. The remained of this document will present information on some of the high-tech parks and organizations in Taiwan that foreign firms might consider locating in or cooperating with:

1 | Nangang Biotechnology Research Park |

To accommodate the development of translational medicine research, the "Innovation Incubation Center" has been set up in the Nangang National Biotechnology Research Park. Other institutions there include the National Laboratory Animal Center (NLAC), the Development Center for Biotechnology (DCB), and the Taiwan Food and Drug Administration. Therefore, the companies here have access to startups in the biomedical field to seek more collaborative opportunities. Besides, in the Park, the resources are available to provide one-stop assistance with such matters as clinical trials, commercialization of R&D results, and information on regulatory restrictions.

Contact Information

Operational Center of National Biotechnology Park

Telephone : 02-77505800#2446/2442 02-77505500#1452-1470
Address : 1F, Building C, National Biotechnology Park

2 | Hsinchu Biomedical Science Park |

Inside the Park are the "Biomedical Technology and Product Research and Development Center," the "Industry and Incubation Center," and the "Hsinchu Biomedical Science Park Hospital." These three major centers share R&D resources and take advantage of their adjacency to the Hsinchu Science Park. Businesses based in the Park can join hands with the information and communication industry in the surroundings while engaging themselves in basic biomedical research and translational medicine research, commercialize and verify R&D results, and conduct clinical trials in the Park Hospital to shorten the time to market.

Contact Information

Industry and Incubation Center, Hsinchu Biomedical Science Park

Telephone : 03-6587100
Address : No. 2, Section 2, Biomedicine Road, Zhubei City, Hsinchu County

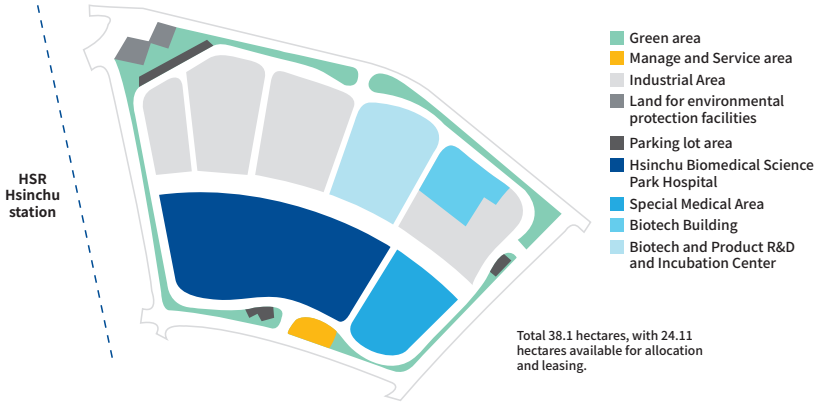


Figure 1 Hsinchu Biomedical Science Park Sitemap

3 | BioMed Commercialization Center |

The Ministry of Science and Technology established the "BioMed Commercialization Center," which, by integrating related resources and strengthening the incubation momentum, can provide businesses with such services as intellectual property analysis, bridging and matching, quick trial production, and clinical regulatory consultation to help expedite commercialization of biomedical technologies and international market exploration.

Contact Information

BioMed Commercialization Center

Telephone : 02-77003830
Email address : service@biip-dcc.org

4 | Pingtung Agricultural Biotechnology Park |

This is the first park in Taiwan that was set up specifically for the development of agricultural biotechnology. There are currently six industrial development hubs in place that focus on value-added natural products, value-added aquaculture, value-added livestock biotechnology, bioagricultural materials, energy-saving environmentally-controlled agricultural facilities, biotechnology testing, and contract manufacturing. With the services that are available in the Park (such as one-stop investor assistance, industrial talent referral, a steady supply of raw materials and supplies, startup assistance, and technical support), plus future sharing and integration of resources with the Taoyuan Agricultural Logistics Park, should help companies that are based in the Park take root in Taiwan while exploring business opportunities globally.

Contact Information

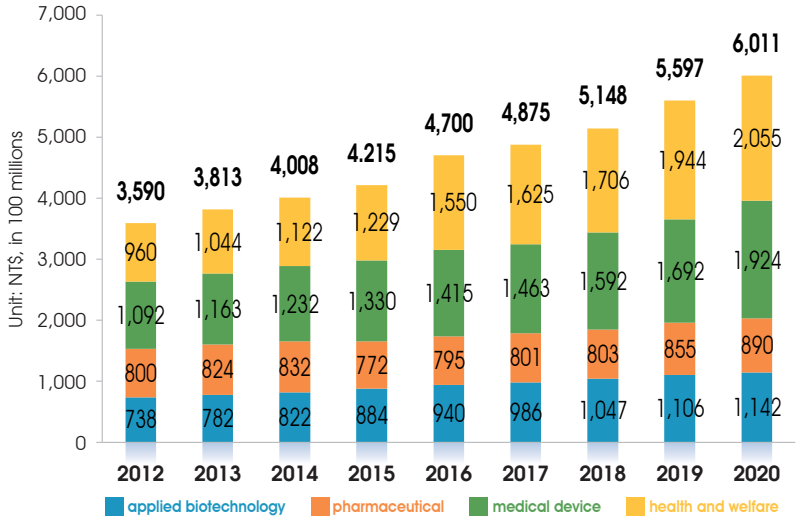
Pingtung Agricultural Biotechnology Park

Telephone : 08-7623205
Address : No. 1, Shennong Road, Dehe Village, Changzhi Township, Pingtung County

Overview of Industrial Development

1 | Output Value |

According to the "2021 Biotechnology Industry White Paper" of the Ministry of Economic Affairs, the biotechnology industry in Taiwan mainly includes four major sectors, namely pharmaceuticals, medical devices, applied biotechnology, and health & wellness. The operating revenues of the biotechnology industry in Taiwan came to around NT$601.1 billion in 2020, an increase of 7.4% from NT$559.7 billion in 2019. The health & wellness sector was the largest, with operating revenues of NT$205.5 billion, followed by the medical device sector (NT$192.4 billion), the biotechnology sector (NT$114.2 billion), and the pharmaceutical sector (NT$89.0 billion). (See Figure 2)

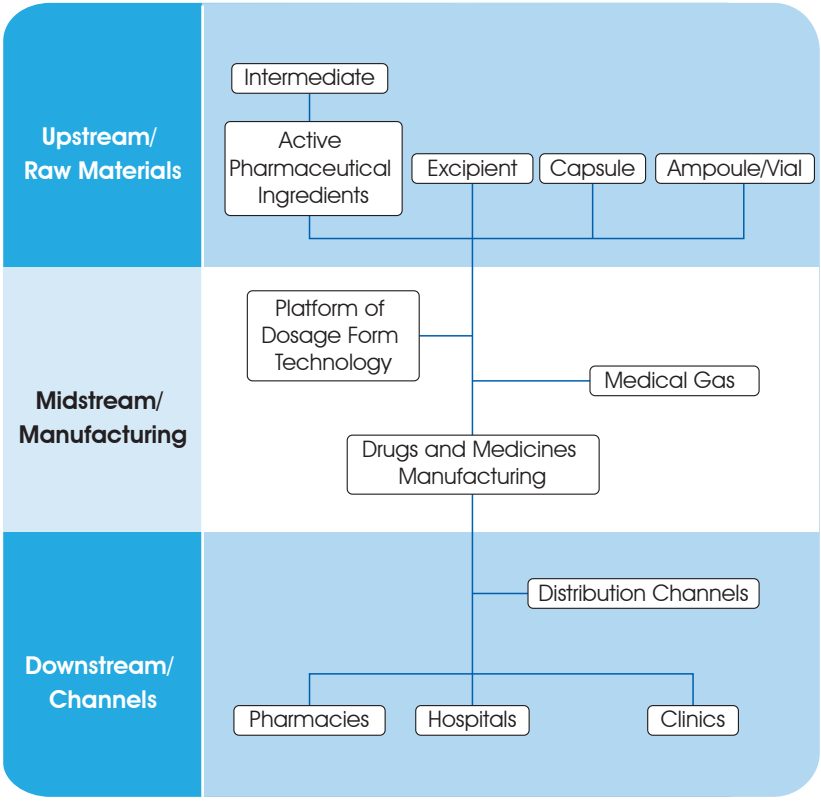


Source: Biotechnology and Pharmaceutical Industries Promotion Office under the Ministry of Economic Affairs, Medical and Pharmaceutical Industry Technology and Development Center, and Industry, Science and Technology International Strategy Center under the Industrial Technology Research Institute, 2021.

Figure 2 Revenue Growth in the Biotechnology Industry in Taiwan

2 | Industry Value Chains |

In Taiwan's biomedical industry, Western pharmaceuticals take the longest to develop and the process is the most mature. Currently, our Western pharmaceuticals industry is quite fully developed and encompasses everything from upstream processes (supply of raw materials, and development and production of pharmaceutical products) to downstream processes (logistics channels). (See Figure 3)



Source: 2020 Taiwan Industry Map.

Figure 3 Taiwan Drugs and Medicines Manufacturing Industry Chain

3 | Industrial clusters |

Taiwan has comprehensive biomedical industry clusters. New drugs, medical devices, and biological preparations are the focus in the north, pharmaceuticals and medical devices are the focus in central Taiwan, and pharmaceuticals, medical implants, and minimally invasive surgical instruments are the focus in the south. The biotechnology and pharmaceutical corridor is effectively connected from north to south (refer to Figure 4).

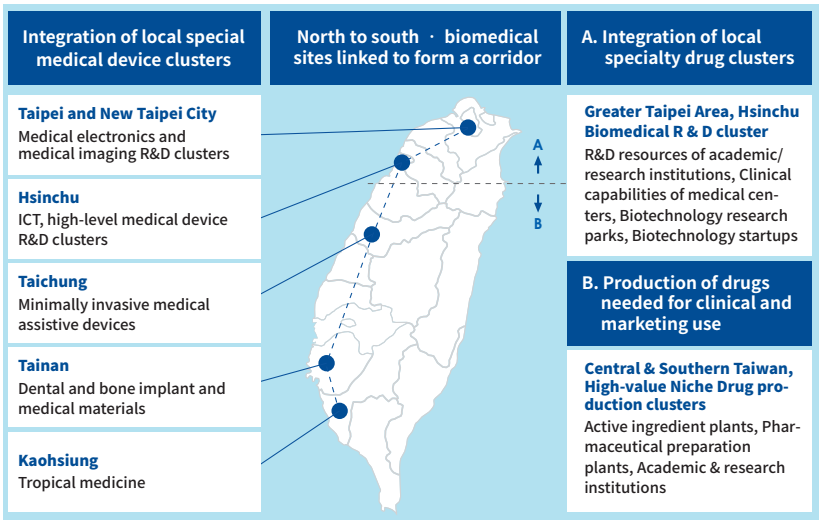


Figure 4 Biotechnology and Pharmaceutical Industrial Clusters in Taiwan

1. Clusters in Northern Taiwan

In the north, the best known clusters include the "National Biotechnology Research Park (Nangang)," the "Neihu Technology Park (Taipei)," and the "Hsinchu Biomedical Science Park." The parks in Nangang and Neihu, in particular, focus on innovative biotechnology and pharmaceuticals with new medical devices because of their strong R&D capability. The "Hsinchu Biomedical Science Park" combines

the advantages of Taiwan's world-leading ICT technologies at the Hsinchu Science Park with the presence of the Park Hospital. These advantages provide conditions that have supported the establishment of the Biomedicine Technology and Product Research and Development Center, and the Industry and Incubation Center. Together, these entities form a cluster for medical equipment, in-vitro testing, and biological preparations.

There are many outstanding firms in the biomedical development cluster of northern Taiwan, including the following: Medigen Vaccine Biologics Corporation, which is proactively devoted to the development of vaccines and related biological preparations in response to COVID-19; TaiDoc Technology Corporation, which focuses on biochemical technology, medical electronics, and optics needed for the production of various types of medical devices, and which also does R&D work on rapid tests; Taigen Biotech, which is devoted to the development of anti-infection and Hepatitis C drugs; and PharmaEngine Inc., which focuses on the research and development of new cancer drugs.

2. Clusters in Central Taiwan

Businesses in central Taiwan, by linking up with the precision machinery industry, have developed precision processing of medical devices and other biotechnology sectors such as the manufacturing of medicinal products at the "Central Taiwan Science Park." Well known manufacturers include INTAI Technology and

Taiwan Noenmei Biotechnology. INTAI Technology manufactures minimally invasive surgery instrument parts, and cooperates closely with Johnson & Johnson (the world's largest producer of medical devices), for which INTAI Technology is an important OEM manufacturer of surgical instruments. Taiwan Noenmei Biotechnology Co., Ltd., which is devoted to the research, development, and manufacturing of heparin, heparinoid, collagen packaging materials, collagen casing, and hydrolyzed protein. Heparin, in particular, is an important natural anti-thrombosis and anti-coagulation drug in the clinical setting.

3. Clusters in Southern Taiwan

In southern Taiwan, besides the production of active pharmaceutical ingredients, businesses have taken advantage of strong metal processing capabilities in Kaohsiung to develop high value-added metal processing and minimally invasive surgical instruments for dentistry or orthopedics in the "Southern Taiwan Science Park." The largest artificial dental implant supplier in Taiwan, Alliance Global Technology, is one of the best known. In addition, with the advantage that Taiwan has in the agricultural field, the "Pingtung Agricultural Biotechnology Park" focuses on the development of functional foods, modern Chinese medicines, animal vaccines, and animal breeding. Richfield Biotech Limited Company, which specializes in the development of feed additives and microbial preparations; and Timing Pharmaceutical Co, Ltd., which is engaged in the manufacturing of Chinese herbal health-preserving foods, are both based in the Pingtung Park.

Potential Investment and Collaboration Opportunities in Taiwan

1 Jointly Establishing Biomedical Industrial Clusters

In addition to its complete industrial development hubs in the biomedical field, Taiwan also has abundant data accumulated from the National Health Insurance system, clinical experiences, and R&D capabilities, which will help international biotech enterprises set up R&D centers or production sites in Taiwan. The government has identified the biopharmaceutical industry as one of its core strategic industries, and has launched the Biomedical Industry Innovation Promotion Project in order to "build a complete industrial ecosystem," "integrate innovative clusters," "make use of resources on the international market," and "promote characteristic and key industries," thereby supporting the manufacture of reagents and the research and development of new drugs and vaccines.

2 Seizing Business Opportunities in the Biomedical Industry

Taiwan has competitive advantages in the biotechnology, pharmaceutical, and medical device fields. Taiwan's regulatory requirements governing the approval process for medicinal products are on a par with their international counterparts. In addition, Taiwan has robust R&D capabilities and biomedical talent, as well as abundant international clinical trial experience. It is home to 23 medical centers and 124 clinical trial hospitals. In addition, Taiwan's high-quality biotech incubation mechanism and its interconnected network of industrial development hubs from north to south have made Taiwan one of the world's best locations for innovation, research, and development of new drugs and new medical devices. Future investments by foreign companies in Taiwan in the future will help expedite the timeline of research and development, and will introduce new products to the market and generate business opportunities in the biomedical industry for all parties.

3 Pandemic Highlights Taiwan's Competitive Edge in Manufacturing and R&D

With the technical capabilities of the Academia Sinica and National Health Research Institutes, as well as related biotech enterprises that are cooperating in research and development, the nanovaccine and the glycoprotein vaccine successfully developed in Taiwan are now being tested in clinical trials. Outstanding R&D technology in the field of biopharmaceuticals has enabled Taiwan to achieve great success in the treatment of influenza, enteroviruses, and liver disease, and has attracted advanced countries such as the US and others in the European Union to work with Taiwan in the development of vaccines and drugs. This demonstrates the unparalleled R&D and manufacturing capabilities of Taiwan in the biopharmaceutical field. This demonstrates the unparalleled R&D and manufacturing capabilities of Taiwan.

Production and management capabilities in Taiwan's manufacturing sector, a competitive edge in our ITC industry, and our country's ability to make quick adjustments in response to market demand have been put to good use during the COVID-19 pandemic, when demand soared for face masks, personal protective equipment, ventilators, and other such disease control products. In addition, prosthetics, contact lenses, physiological detectors, and monitoring devices have all enabled Taiwan to consolidate its important position in related industries throughout the world. With the pandemic yet to ease, it is expected that Taiwan's outstanding ability to achieve cross-disciplinary integration of R&D work in the fields of biomedicine, information and communications, and semiconductors will again draw the world's attention. Foreign firms can cooperate with Taiwan to strengthen their industrial competitiveness.

4 Early Opportunities to Build a Stronger Presence in Asia-Pacific Markets

As countries in the Asia-Pacific region experience demographic aging and the economies of China and various Southeast Asian countries grow stronger, the demand for basic medicine, home care, health promotion, and medication is significantly increasing, driving rapid growth of the biomedical markets in Asia. Foreign investors -- taking note of Taiwan's industrial base, its advantageous geographical location, its strong ability to link up with international markets, and the government's preferential tax policies and R&D subsidies -- can choose to locate regional headquarters or R&D production sites in Taiwan.

In addition, in response to ongoing innovation in the biomedical industry, Taiwan continues to adopted and amend medical device legislation and standards. Examples include the promulgation in 2020 of the "Medical Devices Act" (which incorporates the concept of "design" into medical device manufacturing and sets out provisions for the regulation of medical device repair firms) and a 2021 amendment to the "Regulations Governing the Administration or Use of Specific Medical Technology-based Testing or Laboratory Medical Instruments" (which features the lifting of restrictions on cell therapy and autologous bone marrow mesenchymal stem cell transplantation). As a result, Taiwan is now second only to Japan in the use of autologous immune cells for the treatment of various types of cancer, which will help foreign investors to explore for advanced medical care markets the Asia-Pacific region.

Investment Incentive Measures

1 | Tax Incentives |

Taiwan's profit-seeking enterprise income tax rate is 20%. To encourage foreign companies to invest in Taiwan, support industrial innovation, and promote industry-academia collaboration, foreign companies are eligible for the following preferential taxes (Table 1):

Table 1 Preferential Taxes

Item	Preferential tax(es)
Encourage investment in biotechnology and investigational new drug businesses	• For the purpose of encouraging the incorporation or expansion of biotech and new pharmaceutical companies, investors who have invested in a biotech or new pharmaceutical company and have held the shares for more than three years are entitled to a deduction from the profit-seeking enterprise income tax payable for a period of five years starting from the year the tax liability is incurred. The amount is up to 20% of the acquisition cost of the shares.
Deductibles for R&D and talent training	• Biotech and new pharmaceutical companies undertaking R&D on new drugs or technologies are entitled to a deduction from their profit-seeking enterprise income tax liability. The deduction is limited to 35% within five years from the year the tax liability is incurred. When expenditure on research and development for the current year exceeds the mean R&D budget for the preceding two years, a tax deduction of up to 50% of the excess may be taken.

Item	Preferential tax(es)
Deductibles for R&D and talent training	● 35% of the costs of training events focusing on the R&D and manufacturing of investigational new drugs, high-risk medical devices, and emerging biopharmaceutical products organized by biotechnology and IND companies for their employees or in which employees are assigned to take part shall be deducted from the profit-seeking enterprise income tax beginning from the year when the tax starts to be filed. When the expenditure on professional development for the current year exceeds the mean of the preceding two years, a deduction equal to 50% of the excess may be taken.
Introduction of technologies or mechanical equipment	● Royalty payments to foreign companies for imported new production technologies or products that use patents, copyrights, or other special rights owned by foreign companies is, with the approval of the Industrial Development Bureau, MOEA, exempt from the corporate income tax. ● Imported machinery which local manufacturers cannot produce are eligible for duty-free treatment.
Investment in smart machinery / 5G	● Smart machinery: Automatically scheduled, flexible, or mixed-model production lines that utilize big data, AI, and IoT. ● 5G: Related investment projects include 5G communication systems, and new hardware, software, technology, or technical services. ● For investments of no less than NT$1 million and no more than NT$1 billion, either "5% of investment spending deducted from profit-seeking enterprise income tax (current FY)" or "3% of investment spending deducted from profit-seeking enterprise income tax, if total spending spread over three years" may be selected, but the total amount deducted may not exceed 30% of corporate income tax that year. ● The applicable periods are January 1, 2019 through December 31, 2021 (smart machinery) and January 1, 2019 through December 31, 2022 (5G).

Item	Preferential tax(es)
Technology investment / Employee stock compensation	● For the purpose of encouraging high-ranking professionals of biotech and new pharmaceutical companies or technology investors to hold shares, the investors will be exempted from comprehensive tax or profit-seeking enterprise income tax liability for the current year. Tax is collected only after cost is deducted from the income obtained according to the contemporary price upon actual transfer. ● Supported by a majority of the directors that attended the Board of Directors meeting and account for at least two-thirds of all directors and upon approval by the competent authority, biotechnology and IND companies may issue stock certificates to high-ranking professionals or technical investors. Holders of the said stock certificates in the preceding paragraph may subscribe shares in certain quantities at the price agreed upon. The subscription price may be unrestricted by Article 140 of the "Company Act" where it says that the subscription price may not be below par value. The obtained shares are subject to income tax according to the requirement in the preceding paragraph about "deductibles for income from technical shares." ● A company employee who has obtained stock compensation worth a combined total of less than NT$5 million and continuously held the stock while remaining in the company's employ for at least two years may choose to be taxed on the market price of the stock at either the time the stock was obtained or the time the stock is sold, whichever is lower.
Foreign special professionals	● Foreign special professionals who meet criteria are eligible for a 50% deduction of total income tax for amounts exceeding NT$3 million.
Setting up operations in industry parks	● Companies that set up operations in export processing zones, science industrial parks, or free trade ports are eligible for exemptions on import duties, commodity tax, and business tax for the import of machinery and equipment, ingredients, fuel, materials, and semi-finished products for their own use.
Others	● Cmpanies that use undistributed earnings to engage in substantive investments may exclude the amount when calculating their profit-seeking enterprise income tax.

Note: As of 31 December 2021, a proposed amendment to the "Act for the Development of Biotech and New Pharmaceuticals Industry" was under deliberations at the Legislative Yuan.

2 | Subsidies |

1.Global R&D Innovation Partner Program

Some foreign companies have a high degree of complementarity with Taiwan's industries, so we encourage them to come to Taiwan to plan and develop forward-looking technologies more advanced than those that Taiwanese firms currently possess, as well as key technologies or integrated technologies. By engaging in R&D work on such technologies in cooperation with Taiwanese firms, they could exert a key influence on Taiwanese industry by: (a) spurring R&D work on industrial technologies as well as the establishment and development of supply chains; (b) improving R&D efficiency; (c) accelerating the timetable from R&D to production; and (d) contributing actively to expansion of international markets. Foreign companies that achieve such things, after gaining approval from the MOEA, will be eligible for subsidies of up to 50% of total R&D expenditures.

2. Program for the Development of Pioneering Companies

The purpose of this program is to build Taiwan into a high-tech R&D center and encourage leading international manufacturers to establish cutting-edge R&D bases in Taiwan so that they can work here on forward-looking technologies and link up with the Taiwan supply chain, thereby creating a division of labor in the areas of research, co-creation, and development, with an eye to strengthening the technological

competitiveness of Taiwan's leading industries and accelerating the formation of clusters in emerging industries. Program funding of up to 50% of total expenditures may be granted for any project that has been approved by the Ministry of Economic Affairs.

3. Taiwan Industry Innovation Platform Program

The Industrial Development Bureau and the Ministry of Science and Technology are jointly running the "Taiwan Industry Innovation Platform Program" to guide industries to develop towards greater value, and encourage companies to enter high-end product application markets to increase the industry's overall added value. The program provides companies with R&D teams in Taiwan with 40-50% of funding required for theme-based R&D projects, and up to 40% of funding for R&D projects proposed by companies.

4. Leap Forward Program for Cross-industry Integration in the Field of Biomedicine

By publicly soliciting R&D project proposals, this program to spur cross-industry integration in the field of biomedicine, thereby contributing to breakthroughs in efforts to develop new technology applications. Program grants are mainly directed to projects involving IoT mobile medical devices, high-end medical imaging and data, in-vitro diagnostic devices, composite biomaterials, non-invasive surgical instruments, medical big data analysis, and other R&D work on innovative medical devices. The amount of a grant may not exceed 50% of the cost of a project, and grant caps are set separately for stand-alone projects and integrated projects.

3 | Measures Taken by Local Governments |

To support the development of venture companies, local governments have also provided resources such as "investing in or sponsoring" review or contest mechanisms, setting up "incubation or acceleration devices," training talent on occupational knowledge, and providing free or economic office space, among others, to help venture companies achieve strong growth; this also applies to the biopharmaceutical industry.

Leading Taiwanese Companies

The following section will provide descriptions of Taiwan's most notable manufacturers in the fields of Western pharmaceuticals, vaccines, biodrugs, biotech products, and medical devices:

1 | Western Pharmaceuticals |

1. ScinoPharm Taiwan

Founded in 1997, ScinoPharm Taiwan is a major manufacturer of active pharmaceutical ingredients (APIs). It develops and manufactures a wide array of APIs and intermediates, and has become one of the leading international oncology API suppliers. In addition to providing APIs to the world's best known makers of generic drugs, ScinoPharm Taiwan also provides API outsourcing services for new drug development companies and patented pharmaceutical companies.

2. Formosa Laboratories

Founded in 1995, Formosa Laboratories branched in 2000 into active pharmaceutical ingredients (APIs). As a contract development and manufacturing organization (CDMO) Formosa Laboratories now provides CDMO services covering APIs and antibody-drug conjugates (ADCs), and offers vertically integrated, one-stop development and manufacturing of cytotoxic and non-cytotoxic injectables of aseptic liquid filling and lyophilization.

3. China Chemical & Pharmaceutical Co. (CCPC)

Founded in 1952, CCPC is dedicated to the research and development of pharmaceutical technologies, and has entered into technology tie-ups with globally well-known drug makers to engage in joint R&D work that will spur further growth of the company's business. In order to embark upon international markets, CCPC has vertically integrated its own resources and those of its affiliates, and intends to concentrate its investments in APIs and generics that pose high technical barriers to market entry.

4. TTY Biopharm

TTY Biopharm was established in 1960, and now defines itself as a biotech company focusing on development of special formulations (which can be patented or pose high technical barriers to market entry) and new drugs. The company focuses especially on international development in the field of oncology, and continues to develop and market drugs for serious illness and anti-infective drugs.

2 | Vaccines |

1. Adimmune

Founded in 1965, Adimmune Corporation is one of only a few influenza vaccine manufacturer in Asia with both EU GMP and US FDA certification, and is a PIC/S GMP manufacturer of human vaccines. Adimmune's major products include Trivalent Influenza vaccine, Quadrivalent Influenza vaccine, Influenza A (H1N1) Virus Monovalent Vaccine, Japanese Encephalitis Vaccine (JEV), Tetanus Toxoid, and purified Tuberculin.

2. Medigen Vaccine Biologics

Founded in 2012, Medigen Vaccine Biologics is a biotech firm that develops and mass produces vaccines and biopharmaceuticals. The firm uses cell-cultivation platform and extensive international and domestic partnerships to develop novel cell-based vaccines and biosimilars.

3 | Contract Manufacturing of Biodrugs |

1. Mycenax Biotech

Founded in 2001, Mycenax is a CDMO specialist which provides a one-stop process -- from DNA sequencing to GMP manufacturing -- for the development of bio-drugs. The company's bio-drugs are certified by the TFDA in Taiwan, the FDA in the US, and the PMDA in Japan, and it has customers in Japan, Taiwan, South Korea, and Singapore, and Mycenax is building new plants to meet market demand.

2. EirGenix

EirGenix was founded in 2012 and entered into a joint venture with the Development Center for Biotechnology, whereby EirGenix obtained the rights to operate a cGMP biopharmaceutical pilot plant facility, took over the original pilot plant team's core capabilities, including one cGMP facilities for mammalian cells and another one for microbial cells. The company also has a CDMO unit, is capable of doing R&D work on biosimilars.

4 | Biotech Products |

1. TCI Co., Ltd.

Founded in 1980, TCI's main products include functional drinks and foods, dietary supplements, and cosmeceuticals, and the company also provides contract manufacturing services. TCI has aggressively expanded its business in 2021. The company has acquired a major equity stake in Maxigen Biotech, and in a bid to become more competitive in the US market TCI has also entered into a strategic alliance with NewAge, a US health products company. Under the terms of an MOU, NewAge will sell to TCI a manufacturing facility in the state of Utah.

2. Formosa Biomedical Technology

Founded in 2003, Formosa Biomedical Technology's main products include detergent, materials, cosmetics, functional textiles, and diagnostic reagents. Since the outbreak of the COVID-19 pandemic, Formosa Biomedical Technology continues to develop products to fight cancer, and has already launched an anti-bacterial spray and a rapid test reagent.

5 | Medical Devices |

1. APEX Medical Corp.

Founded in 1990, APEX Medical is an important designer and manufacturer of home care beds. In its early years, APEX Medical mainly engaged in contract manufacturing, but in more recent years it has launched products under the APEX brand in a bid to expand market share, and now develops products for use in wound management and respiratory therapy.

2. St.Shine Optical Co.

Founded in 1981, St.Shine Optical was the first contact lens maker in Taiwan to embark upon international markets, and is now the fifth largest contact lens manufacturer in the world. In addition to its Ticon contact lenses, St.Shine also acts as a contract design and manufacturing organization (CDMO) that helps customers with development of products to be marketed under their own brand names.

3. INTAI Technology Co.

Founded in 2004, INTAI Technology's main products are components for laparoscopic and endoscopic surgical instruments, pedicle screws, bone nails, bone plates, dental implants, and related products. INTAI Technology has entered into a close partnership with the world's biggest medical device manufacturer, Johnson & Johnson, for whom INTAI manufactures important OEM surgical instrument components. INTAI is Johnson & Johnson's only partner in Asia that supplies components for minimally invasive surgical instruments.

Examples of Successes Achieved by Foreign Companies

1 | Development of Clinical Trials |

Many international giant pharmaceutical companies, such as GSK and Novartis, have come to Taiwan to set up clinical trial research centers for investigational new drugs. They have been attracted here by Taiwan's outstanding medical environment, quality healthcare professionals, and medical technology and equipment comparable to that in advanced countries in Europe and America. Besides, the abundant practical experience in clinical trials as well as strong capabilities are also the reasons why Taiwan attracts such investment. Merck of Germany and Pfizer and Johnson & Johnson of the US, among others, have also established clinical trial or related collaborative mechanisms with medical or R&D institutions in Taiwan, such as Veterans General Hospitals, China Medical University, National Taiwan University, the Industrial Technology Research Institute, and many others, which is conducive to them conducting international/cross-regional clinical trials.

2 Manufacturing and Production

The high-tech giant Foxconn in February 2021 announced plans to cooperate with GyroGear Ltd., a UK-based neuromuscular medical device company. Pursuant to an agreement, Foxconn will assume responsibility for manufacture in the Asian region of the GyroGlove, a wearable that the UK firms is developing to help individuals with hand tremors. The GyroGlove is the world's first and only wearable medical device that adopts cutting edge aerospace technology and satellite-grade mechanical gyroscopes to mechanically control trembling hands. This wearable can help persons with Parkinson's Disease and Essential Tremor to live independently.

3 Pursuit of Joint R&D Work and Technical Cooperation

Impressed by Taiwan's R&D and manufacturing prowess in the ICT and semiconductor industries, as well as future prospects for Taiwan's biotechnology and medical device sectors, a pharmaceutical alliance formed by three international pharmaceutical companies -- Roche (of Switzerland), Merck (Germany), and Chugai Pharmaceutical Co. (Japan) -- in March 2021 signed an agreement with Taiwan's National Health Research Institutes (NHRI) and the National Biobank Consortium of Taiwan (NBCT) to collaborate in developing a platform for the use of Taiwanese biobanks for the development of precision treatments for cancers, i.e. personalized cancer treatments.

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