

LCQ9: Biotechnology and healthcare technology

Following is a question by the Hon Martin Liao and a written reply by the Secretary for Innovation and Technology, Mr Alfred Sit, in the Legislative Council today (June 9):

Question:

There are views that following the constant breakthroughs in life science research and with the increasing pressure on the healthcare system created by an ageing population, coupled with the challenges brought by the Coronavirus Disease 2019 epidemic, various places around the world are paying increasing attention to the development of biotechnology. The biotechnology industry is among the nine emerging strategic industries put forward in the Outline of the 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Long-Range Objectives Through the Year 2035, which also pledges support for developing the Guangdong-Hong Kong-Macao Greater Bay Area (Greater Bay Area) into an international innovation and technology hub. Besides, Hong Kong has a strong foundation for developing biotechnology. At present, Hong Kong hosts more than 250 companies which engage in the biotechnology industry, and various tertiary institutions participate in cutting-edge biomedical research. In addition, Hong Kong has a sound regime for the protection of intellectual property rights and sound financing channels. With the Hong Kong Exchanges and Clearing Limited allowing pre-revenue biotechnology enterprises to raise fund through listing on the Main Board since 2018, Hong Kong has now become Asia's largest and the world's second largest funding hub for biotechnology. In this connection, will the Government inform this Council:

(1) given that the biotechnology industry, being a strategic industry, can hardly develop by itself relying solely on the market, whether the Government will, by drawing reference from the rich experience of Switzerland and Singapore, formulate a development blueprint for the biotechnology industry; if so, of the details and timetable;

(2) given that the Government has established at the Hong Kong Science Park Health@InnoHK, a research cluster focusing on healthcare technology, to attract world renowned institutions, science and research institutes and enterprises to set up research and development laboratories to conduct collaborative scientific researches, of the respective up-to-date numbers of admission applications received and approved by the Government, and the situation of applicants being successfully admitted to the cluster; whether there are cases of withdrawn applications or declined admission to the cluster after applications have been approved; if so, of the number and reasons;

(3) as it is learnt that the Mainland authorities have banned the import and export of bio bank and medical data, whether the Government will explore with

the Governments of the Guangdong Province and Macao on relaxing the restrictions in relation to the relevant policies (including those on intellectual property rights), so as to promote the development of the biotechnology industry in the Greater Bay Area; if so, of the details; if not, the reasons for that; and

(4) given that the Work Plan for Regulatory Innovation and Development of Pharmaceutical and Medical Device in the Guangdong-Hong Kong-Macao Greater Bay Area, issued by the Mainland Government in November last year, put forward the aspiration of establishing a comprehensive coordination mechanism for regulating pharmaceutical and medical devices in the Greater Bay Area by 2035, of the policies and measures put in place by the Government in support of the relevant work?

Reply:

President,

Medical technology is one of the areas where Hong Kong enjoys clear advantages in innovation and technology (I&T). The Government has all along been fostering the relevant research and development (R&D) on various fronts. Hong Kong has a solid foundation in biotechnology research and an ecosystem that is gradually improving. Currently, we are also Asia's largest and the world's second largest fundraising hub for biotechnology companies, and the first in the world of which clinical data is recognised by international authoritative medicine regulatory authorities for medicine registration, including the National Medical Products Administration, the United States Food and Drug Administration, and the European Medicines Agency at the same time.

Having consulted the Food and Health Bureau and the Commerce and Economic Development Bureau, my consolidated reply to various parts of the question is as follows:

(1) In order to further promote the R&D on biotechnology and the development of the industry, the Government has been implementing the following major measures in terms of infrastructure, research funding, financing and talent in recent years:

In terms of infrastructure, wet laboratories (wet-labs) are indispensable to biomedical research. Currently, the leasable area of wet-labs in the Hong Kong Science Park (HKSP) amounts to 59 000 square metres, and will increase to about 68 000 square metres after the completion of the conversion works of Building 6W to wet-labs by the end of this year. The first batch of works of Phase 2 of the Science Park Expansion Programme will provide an additional wet-lab area of 10 000 square metres. On the other hand, the Biobank and Biomedical Informatics Platform in HKSP, which was commissioned in December 2020, provides services for collecting, processing, storage and sharing of bio-specimens, as well as cloud storage service of biomedical data and computing and analytical services using sandbox respectively. The Hong Kong Science and Technology Parks Corporation (HKSTPC) is also planning the development of the laboratory research facilities for

medical device testing, drug testing, and animal research, etc.; and the Biomedical Technology Support Centre, which is equipped with life-science instruments, will be expanded within this year with the total area increased by 70 per cent to about 2 040 square metres. Furthermore, one of the first two InnoHK research clusters, which are Hong Kong's flagship I&T projects, focuses on healthcare technologies with a view to leveraging local universities' R&D strengths in healthcare technologies to develop Hong Kong as the international hub for research collaboration in healthcare technologies. In the medium to long term, the Government is taking forward the development of the Hong Kong-Shenzhen Innovation and Technology Park (HSITP) in the Lok Ma Chau Loop in full swing. The first eight buildings are expected to be completed in phases from 2024 to 2027. One of the priority development areas of HSITP will be healthcare technologies.

In terms of research funding, the Incu-Bio Incubation Programme of HKSTPC provides funding of up to \$4 million to incubatees engaging in biotechnology. In view of the relatively complex regulatory procedures involved in biotechnology researches, the incubation programme also offers a targeted funding of up to \$2 million to incubatees for certification or investigational new drug applications, etc. As at end-April, the Programme has supported 41 start-ups, with more than \$55 million approved by HKSTPC. On the other hand, the Innovation and Technology Fund has supported more than 630 projects on biotechnology technologies over the years, including many of its first in the world, such as artificial "mini-hearts", internally motorised minimally invasive robot surgeon, non-invasive prenatal diagnostic technique, etc. The research results of some projects have been commercialised successfully, where some start-ups have even developed into unicorns, making great contributions to global scientific research.

In terms of financing, Hong Kong has implemented a new listing regime since end-April 2018 to facilitate the listing of pre-revenue/pre-profit biotechnology companies in Hong Kong. A total of 31 pre-revenue / pre-profit biotechnology companies have listed in Hong Kong under the new regime so far. The Corporate Venture Fund of HKSTPC has also invested in biotechnological start-ups engaging in drug delivery, stem cell technology and cancer treatment research, etc.

In terms of talent, Hong Kong has many world-class experts in biomedical research who frequently won local and overseas science awards in their respective professional areas. Their research results were also widely adopted in many countries. Among the 16 State Key Laboratories in Hong Kong, nine of them focus on biotechnology-related studies. In addition, the Innovation and Technology Commission launched the Technology Talent Admission Scheme (TechTAS) in June 2018, which provides a fast-track arrangement to admit technology talent. As of end-April 2021, TechTAS has allotted 558 quotas, of which 58 are related to biotechnology; and more than 1 400 applications for funding support related to biotechnology were approved in the same period under the Research Talent Hub which provides funding support for organisations and companies to engage research talent to conduct R&D work.

(2) The InnoHK research cluster initiative has received enthusiastic response, with over 60 proposals from world renowned universities and research institutes and 27 selected, including 15 R&D centres that focus on biomedical technology. The first batch of 20 admitted R&D centres have completed the renovation of their laboratories and commenced operation progressively. It is estimated that the remaining seven R&D centres will commence operation later this year. We will closely monitor the relevant progress.

(3) The National 14th Five-Year Plan announced this March includes biotechnology industry as one of the nine major emerging strategic industries, and meanwhile proposes high-quality development of the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) and facilitation of the cross-boundary flow of innovation elements. It also supports Hong Kong's development into an international I&T hub and integration into national development, leveraging the complementary advantages with Mainland.

The Government will continue to facilitate the effective flow of innovation elements, including scientific research resources. The Central Government announced in November 2019 two facilitation measures, namely (i) relaxing the limitation on exporting Mainland human genetic resources to Hong Kong by allowing Mainland branches established by Hong Kong's universities and scientific research institutes, upon being confirmed by the Ministry of Science and Technology (MOST) to be meeting the specified requirements, to lodge applications for exporting human genetic resources to Hong Kong independently under a pilot scheme for research purpose, and (ii) facilitating customs clearance of imported animal-derived biomaterials by simplifying the vetting process and shortening the processing time in accordance with the relevant laws and regulations, thereby making it easier for Hong Kong's universities and scientific research institutes to conduct animal experiments in the Mainland. On relaxing the limitation on exporting Mainland human genetic resources to Hong Kong, three Mainland branches established by Hong Kong's universities have been confirmed by MOST to be meeting the specified requirements under the pilot scheme so far.

In terms of intellectual property, generally speaking, intellectual property protection is territorial in nature, different jurisdictions process intellectual property registration applications based on their respective intellectual property system and laws. As the Mainland is a significant market for output of scientific research in Hong Kong, the Government has been exploring facilitation measures with the relevant Mainland authorities to provide convenience for enterprises and research institutes in Hong Kong and the Mainland (especially in the GBA) when applying for intellectual property registration. For instance, the original grant patent system of Hong Kong allows patent applicants to file applications for inventions involving use of micro-organisms based on samples of micro-organisms deposited in international depositary authorities or equivalent institutions which are situated in the Mainland, without the need to transport the samples to Hong Kong.

The Government will continue to pay close attention to the difficulties

encountered by the biotechnology industry in the GBA, and explore with related Mainland authorities the possibility of relevant measures to facilitate the development of related industries in the GBA.

(4) The Government has been maintaining close liaison with the relevant Mainland authorities to discuss the implementation of the measure of allowing designated healthcare institutions operating in the GBA to use Hong Kong-registered drugs with urgent clinical use and medical devices used in Hong Kong public hospitals (the Measure), at the University of Hong Kong-Shenzhen Hospital (HKU-SZH) on a trial basis, subject to the approval of Guangdong Province. Our latest work include establishing a collaborative platform and compiling a directory of drugs and medical devices that can be used in designated healthcare institutions in the GBA, etc. The Guangdong Provincial Medical Products Administration (GDMPA) has commenced the Measure to use the relevant drugs and medical devices at the HKU-SZH on a trial basis, with a trial period up till July 31 this year. Under the Measure, the first drug item and first medical device have already been delivered to the HKU-SZH in April this year for clinical use.

The Government will continue to work and liaise with the GDMPA with a view to expanding the directory of drugs and medical devices as soon as possible, and extending the arrangement gradually to cover more designated healthcare institutions in the GBA after achieving phased progress under the trial arrangement at the HKU-SZH. We hope to provide greater medical convenience for Hong Kong residents working and living in the GBA, to foster mutual benefits, connectivity and in-depth integration of the medical and pharmaceutical industries in the GBA, as well as to promote a comprehensive coordination mechanism for regulating pharmaceutical and medical devices in the region.