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Report on Hong Kong-Listed Biotech Companies

April 2023

We are excited to share our third annual report on biotech companies listed on The Stock Exchange of Hong Kong Limited (HKEX).

Since introducing a new listing regime for pre-revenue biotech companies in February 2018, HKEX has become a leading capital market for biotech companies. At the date of this report, 56 companies have listed under the biotech regime regulated under Chapter 18A of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (Listing Rules).

Our latest report, covering the year ended December 31, 2022, shows that the challenging conditions for capital markets globally during the past 12 months have also impacted the biotech sector in Hong Kong. During 2022, only eight biotech companies listed on HKEX, raising an aggregate of US\$473 million, which is a significant reduction compared to previous years in terms of both number of deals and aggregate funds raised. Follow-on capital raising activity in 2022 was also muted.

However, Hong Kong continues to serve a thriving biotech ecosystem and is well positioned to attract further companies to list as global market conditions recover.

As in previous years, we hope that our report will help biotech companies contemplating an HKEX listing to benchmark themselves against companies that have already listed, enable listed companies to benchmark their corporate governance practices and give other stakeholders an overview of the landscape for listed biotech companies in Hong Kong.

Our report covers:

- Key features of the biotech companies completing IPOs on HKEX during 2022. Where relevant, we also compare the data for companies listed in 2022 with that for companies listed in previous years.
- Corporate governance aspects of biotech companies, including board composition and demographics. The corporate governance data included in this year's report encompasses all 56 biotech companies listed on HKEX as of December 31, 2022, giving readers a comprehensive overview of the market in its current state.

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Report

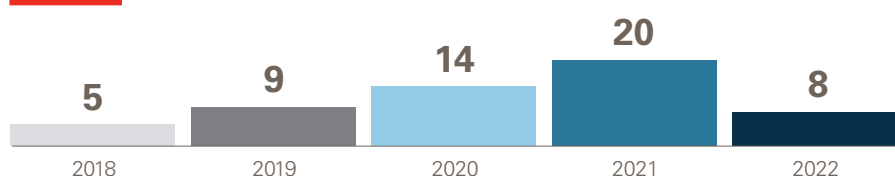
Overview of HKEX-Listed Biotech Companies

Eight biotech companies listed on HKEX during 2022, a significant reduction from the 20 listings seen in 2021.

Of those eight companies, two were incorporated in the Cayman Islands and six were incorporated in the People's Republic of China (PRC) and listed H-shares on HKEX. This marks a significant change from previous years when PRC issuers were a minority and most biotech issuers were incorporated in the Cayman Islands. This development has several implications for the structure and features of these companies and their IPOs, which we explain further in other sections of this report.

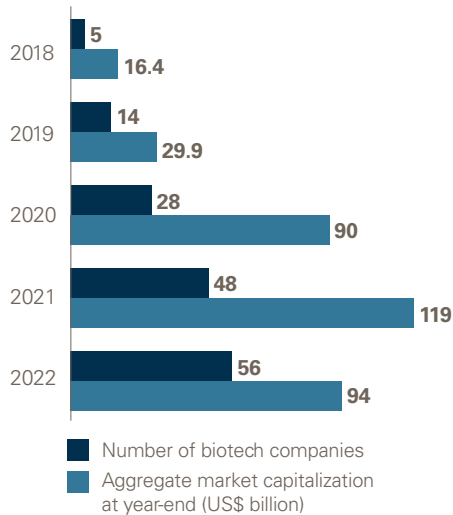
Shanghai continues to be the leading hub for China's biotech industry.

Number of Companies Listed by Year

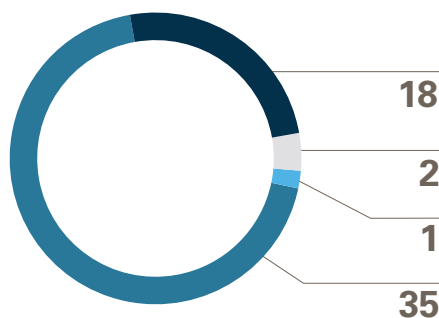


Total Number of Listed Companies and Market Capitalization

Aggregate market capitalization of all Hong Kong-listed biotech companies at December 31, 2022, was **US\$94 billion**.



Jurisdiction of Incorporation



■ Cayman Islands
■ China
■ Hong Kong
■ British Virgin Islands

Data represents all 56 biotech companies listed on HKEX as of December 31, 2022.

HQ Locations

Data represents all 56 biotech companies listed on HKEX as of December 31, 2022.



Status and Maturity of the Business at the Time of IPO

Consistent with previous years, biotech companies listing in 2022 were at a relatively mature stage of development. Biotech companies going public on HKEX in 2022:

- Listed on average 10 years after founding (compared to an average of 9.1 years after founding in 2021 and 8.6 years after founding in 2020).
- Conducted an average of 4.25 rounds of pre-IPO investment (compared to 4.7 rounds in 2021 and 4.5 rounds in 2020).
- Raised an average of US\$230 million in aggregate pre-IPO funding (compared to US\$216 million in 2021 and US\$229 million in 2020).
- Spent an average of approximately US\$93.1 million on R&D during the two full financial years prior to IPO (compared to US\$33 million in 2021 and US\$91 million in 2020).

This is by design: Hong Kong regulators crafted the biotech regulatory regime to ensure that only pre-revenue biotech companies at a relatively advanced stage of development are able to list on HKEX. A company must have at least one “Core Product” that is “beyond concept stage” (see below), been engaged in business for at least two full financial years and conducted R&D of its Core Product(s) for a minimum of 12 months prior to listing.

Years From Founding to IPO (inclusive of both year of founding and IPO)

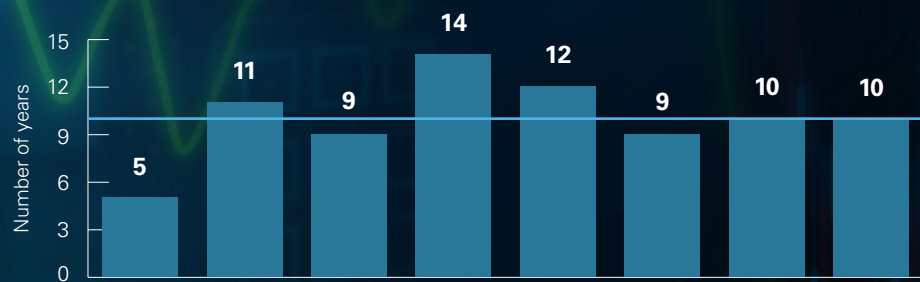
10

Average years from founding to IPO

A “**Core Product**” is a biotech product that is required by applicable laws to be evaluated and approved by the U.S. Food and Drug Administration, the China Food and Drug Administration, the European Medicines Agency or an equivalent authority approved by HKEX (a Competent Authority) based on data derived from clinical trials (i.e., on human subjects) before the product can be marketed and sold in the market regulated by that Competent Authority.

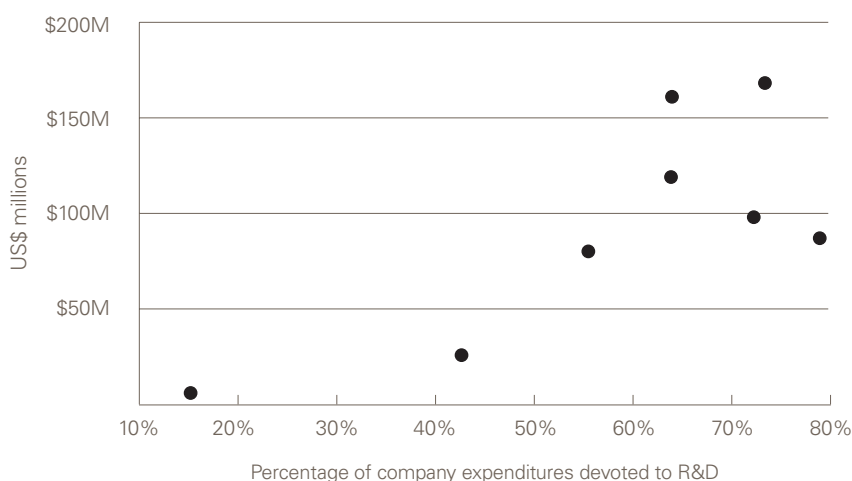
“**Beyond the concept stage**” means that Phase I clinical trials have been completed and the relevant Competent Authority has no objection to the commencement of Phase II clinical trials.

Data in this section represents the eight biotech companies listed in calendar year 2022 only.



Biotech companies that listed on HKEX in 2022

R&D Spend Across Track Record Period



US\$93.1 million

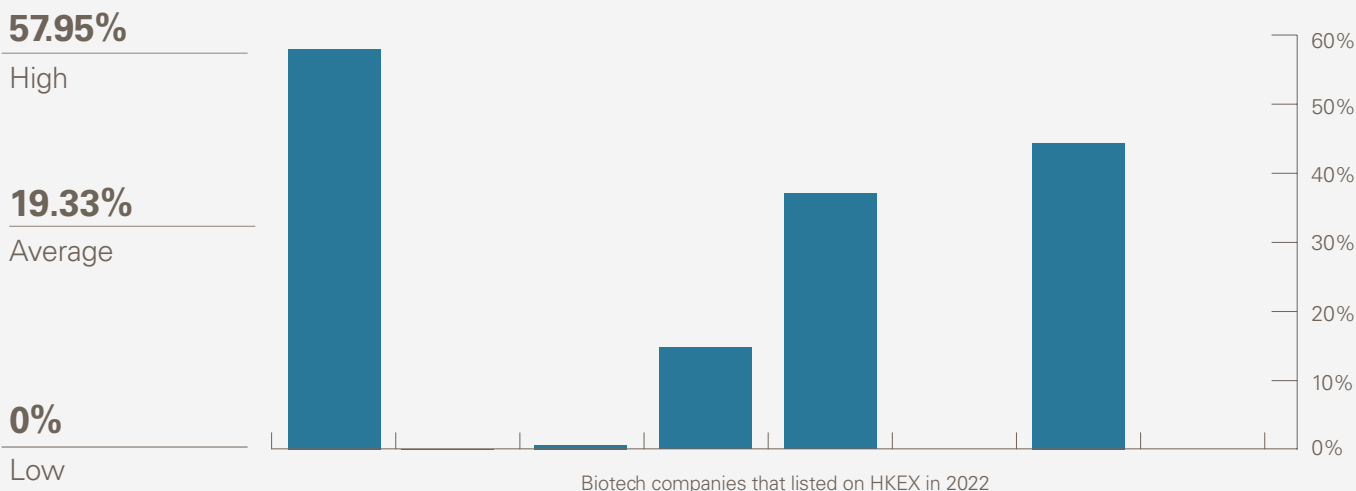
Average R&D spend during track record period

The Listing Rules require a company to include two full financial years of financial information in its prospectus, together with a stub period if the prospectus is issued more than six months after the end of the most recent financial year. Due to this requirement, the R&D expenditures shown in this chart may not be directly comparable with one another — for example, for some companies, the amounts cover only two financial years, while for others they cover two financial years and a six-month stub period. R&D amounts may also not be directly comparable to one another due to differences in accounting practices and the judgments made by management when categorizing expenses.

Biotech companies that listed on HKEX in 2022

Percentage of Board/Management Ownership Immediately Prior to IPO

Five of the eight companies that listed in 2022 featured board/management ownership.



Figures reflect the percentage of issued share capital held by founders and other individuals named in the prospectus, excluding employee share plan holding vehicles. Given that many of the companies listed in 2022 were incorporated in the PRC, due to regulatory considerations, management shareholding may be solely through such vehicles rather than direct holdings.

Actual percentage of interests held by these individuals may be higher in some cases due to their receiving grants of restricted stock units, options or other equity-based awards that have not yet vested or been exercised.

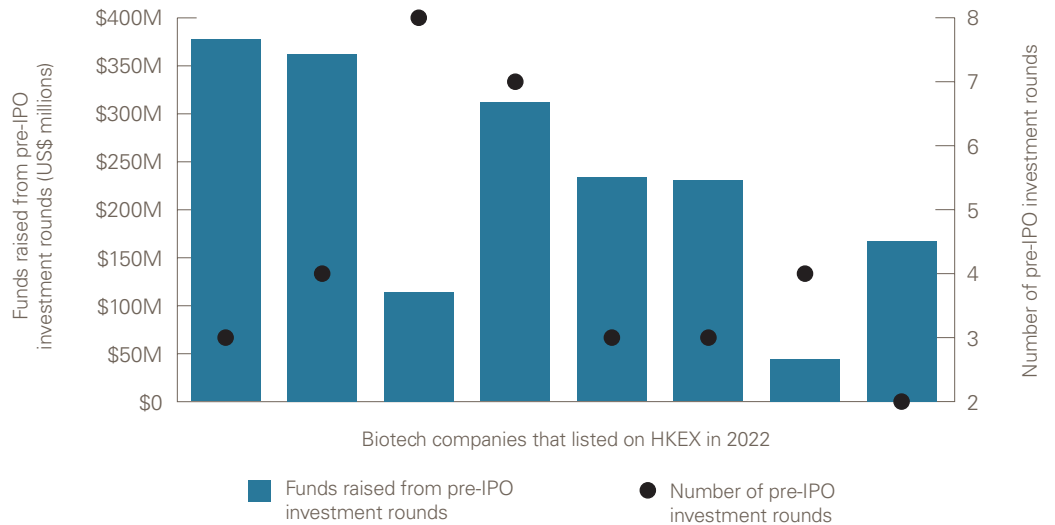
Pre-IPO Funding Rounds

4.25

Average number of pre-IPO investment rounds

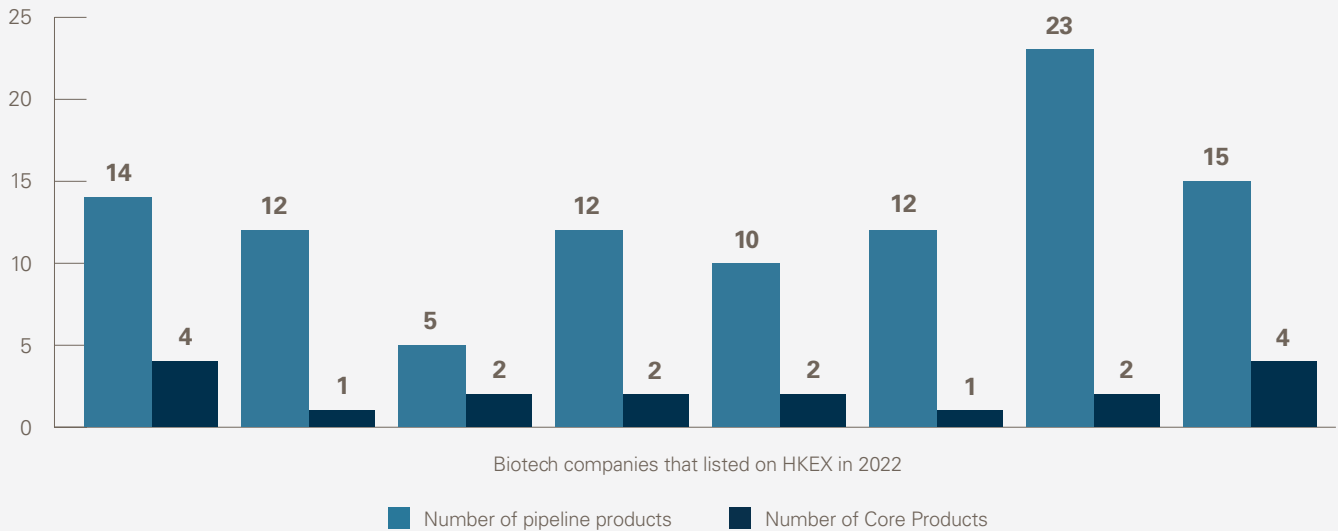
US\$230 million

Average funds raised from pre-IPO investment rounds



Product Development Status at IPO

At the time of their IPOs, companies listing in 2022 had an average of 13 product candidates in their pipelines. Unlike in past years, most companies undertaking an IPO in 2022 had more than one product meeting HKEX’s definition of “Core Product” in their product portfolios.

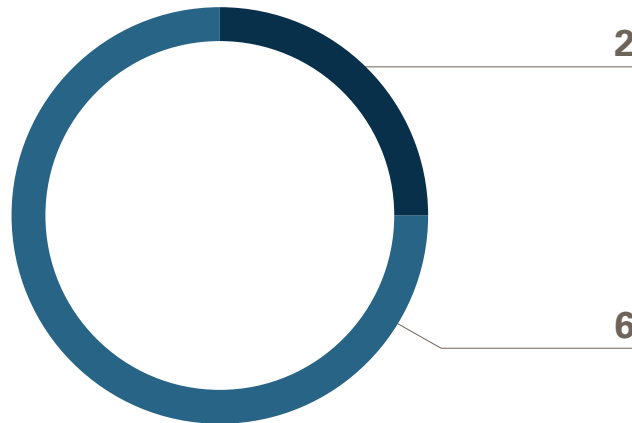


In-Licensing and Collaboration

HKEX permits companies to rely on an in-licensed product to meet the Core Product requirement, provided that a company has conducted 12 months of further R&D on the product. However, only two of the eight companies listed in 2022 had a Core Product that was in-licensed or the product of collaboration. Half the companies analyzed engaged in some form of in-licensing or collaboration for their other products, consistent with previous years.

Companies With In-Licensed Core Products/Products of Collaboration

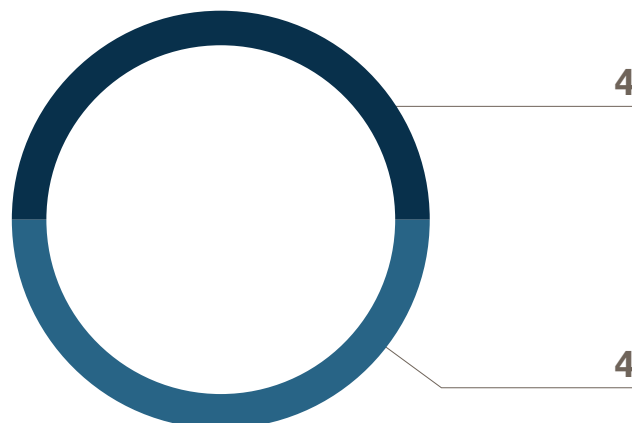
- Number of companies with in-licensed Core Products products/products of collaboration
- Number of companies without in-licensed Core Products products/products of collaboration



Biotech companies that listed on HKEX in 2022

Companies With Other In-Licensed Products/Products of Collaboration

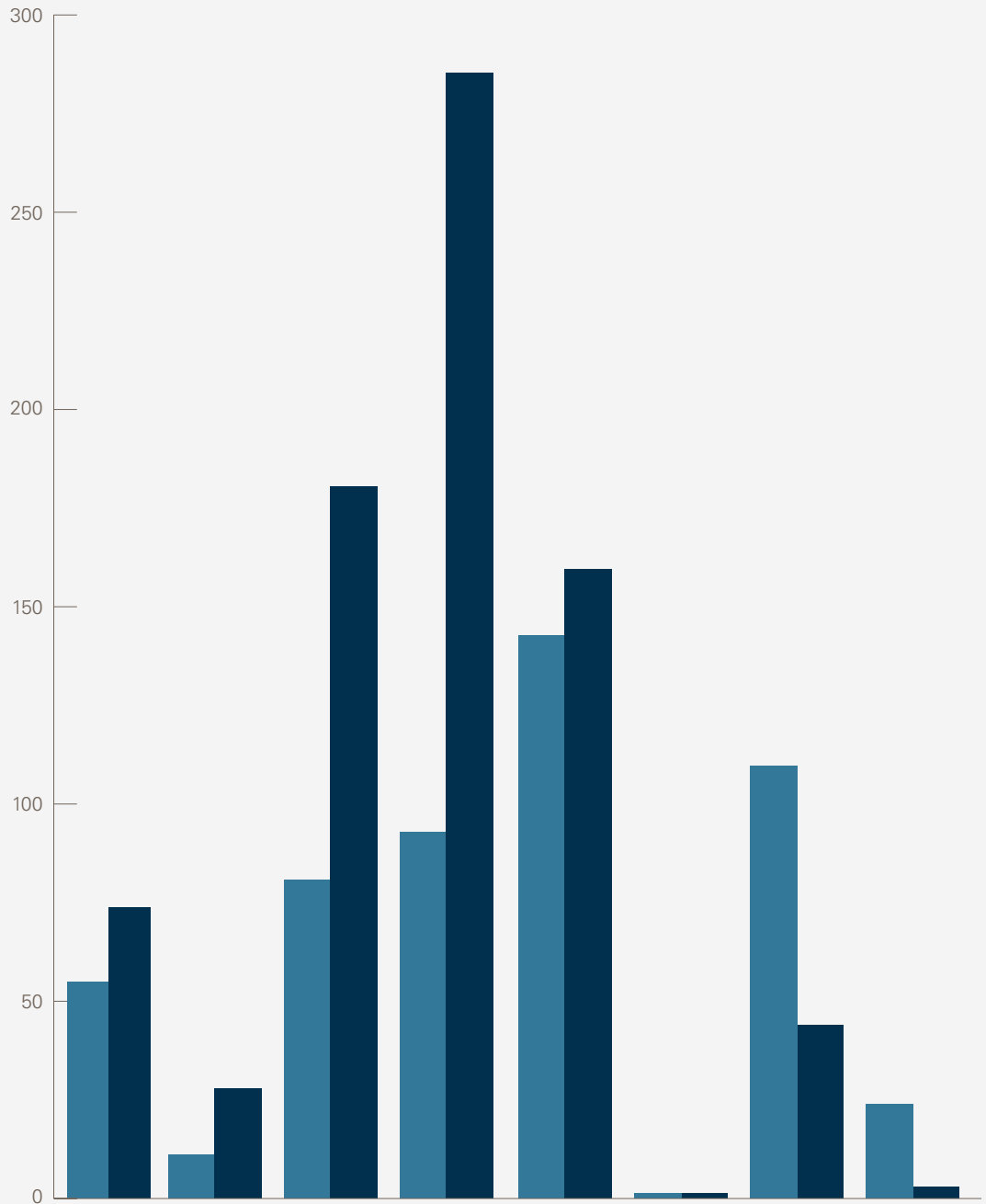
- Number of companies with other in-licensed products/products of collaboration
- Number of companies without other in-licensed products/products of collaboration



Biotech companies that listed on HKEX in 2022

Intellectual Property Ownership at IPO

- Number of registered patents
- Number of patents under application



97

Average patent applications

64.6

Average patent registrations

Biotech companies that listed on HKEX in 2022

IPO Information

Biotech companies undertaking IPOs in Hong Kong during 2022 raised an average of US\$59 million in gross proceeds. This was a significant decrease compared to prior years: Average gross proceeds were US\$345 million in 2020 and US\$243 million in 2021.

Related to this reduced deal size, companies listing in 2022 chose to issue only a small proportion of their overall capital: All eight companies listed in 2022 featured deal sizes representing less than 10% of their total issued share capital, with two companies issuing as little as 2%, a record low for biotech companies listing in Hong Kong. (In contrast, in 2021, only five out of the 21 companies listed had IPOs representing less than 10% of their total issued share capital.)

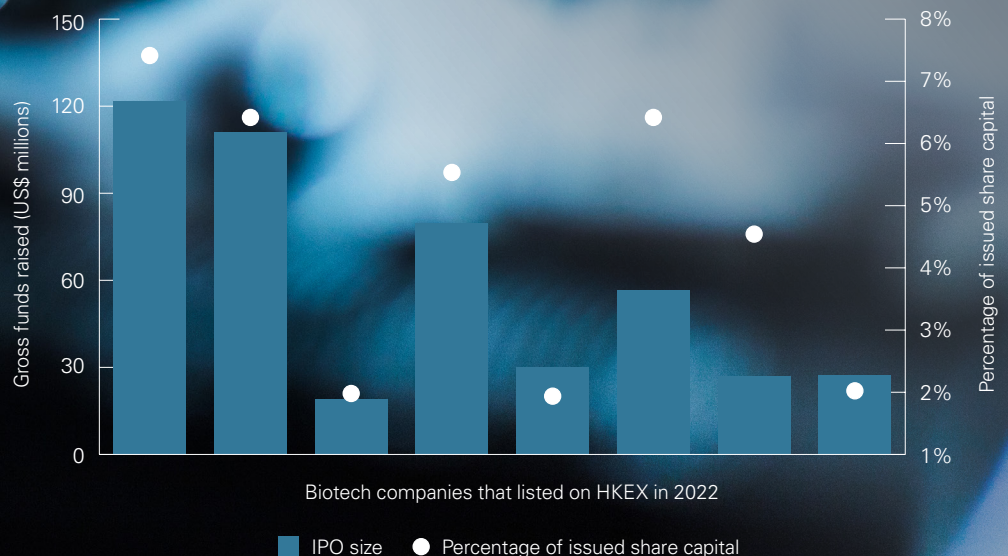
Overall, this data not only reflects challenging market conditions and reduced deal sizes, but may also suggest that these companies may have pursued an IPO for reasons other than immediate fundraising needs, for example as a means to offer liquidity to existing shareholders or to provide a platform for future fundraising. As six of the eight companies listing in 2022 were PRC issuers, they may also be contemplating future A-share listings on the Shanghai Stock Exchange and therefore reducing Hong Kong IPO deal sizes to accommodate those plans for future issuances.

Market capitalization at IPO remained comparable to levels seen in previous years, with an average of US\$1.2 billion market capitalization for companies listed in 2022 compared to an average of US\$1.6 billion market capitalization for companies listed in 2021.

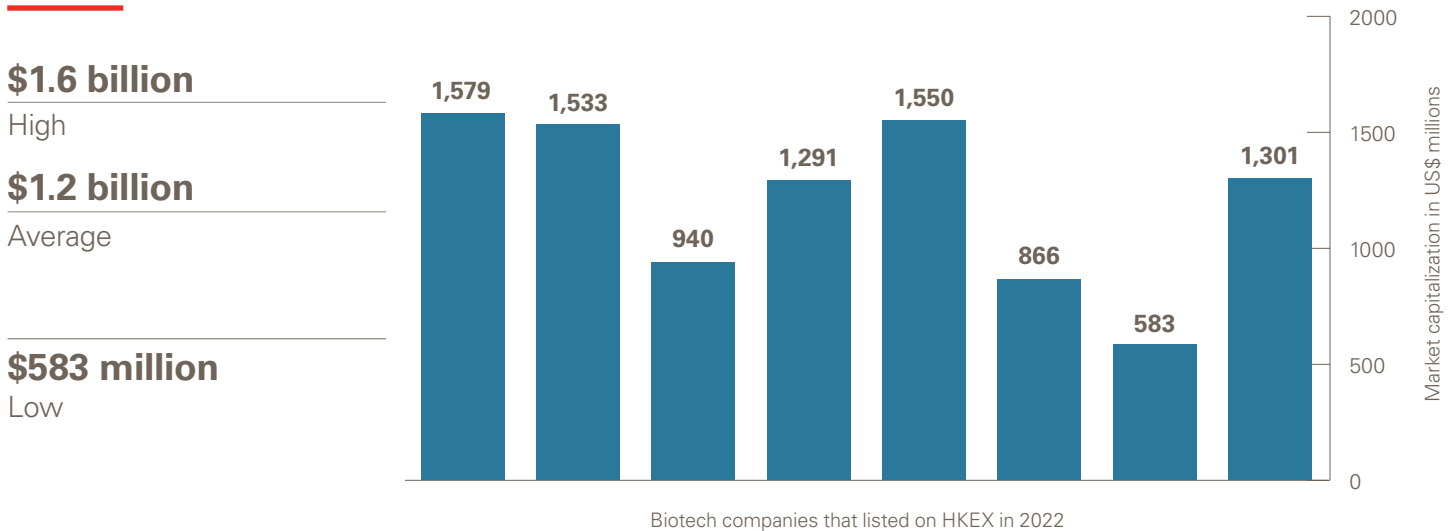
IPO Size and Percentage of Share Capital Issued

US\$59.1 million

Average gross funds raised



Market Capitalization at IPO

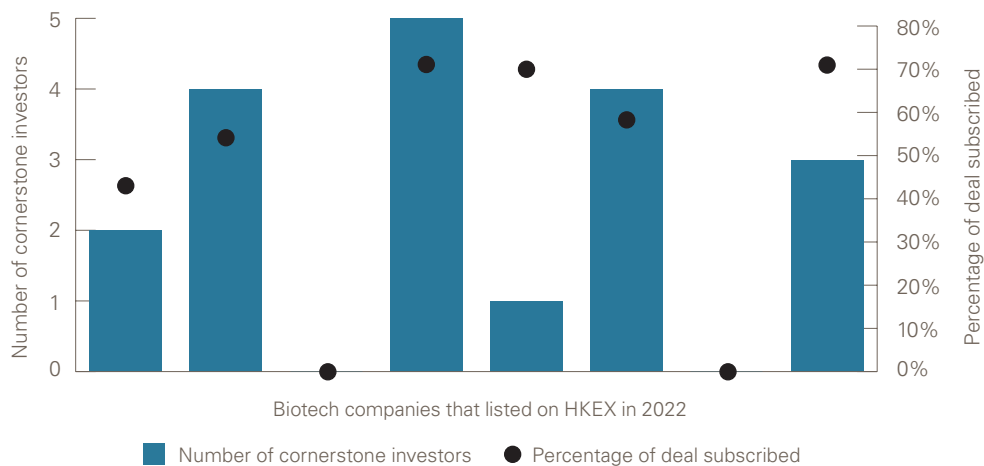


Number of Cornerstone Investors and Percentage of Deal Subscribed

Cornerstone investors remain an important feature of Hong Kong IPOs, including in the biotech space. Six out of the eight biotech companies listing in 2022 included at least one cornerstone investor, with cornerstone investors in all such cases taking significant portions of the deals: between 43% and 71% in aggregate.

In four out of those six cases, cornerstone investors included existing shareholders of the company. (HKEX will grant waivers to biotech companies to permit their existing shareholders to subscribe as cornerstone investors in the IPO, a special concession not normally available to other companies listing on HKEX.)

6 out of 8
IPOs featured
cornerstone
investors



61%
Average
percentage
of deal
subscribed

3
Average number
of cornerstone
investors
(Averages are based
on only those deals
with cornerstone
investors.)

Employee Equity Compensation Schemes

Employee equity schemes play a key role for biotech companies in attracting, retaining and incentivizing employees. Equity compensation schemes not only allow biotech companies at a pre-revenue stage to conserve cash for R&D spending, but also align the interests of management and employees with those of shareholders. If a company is successful post-IPO, such equity awards can accrue significant value for grantees.

In past years, biotech companies listing in Hong Kong have made extensive use of equity incentive schemes, including share award or restricted stock unit (RSU) schemes and share option schemes. For example, of the 20 companies that listed in 2021, 14 adopted some form of equity incentive scheme.

In 2022, only three out of the eight companies listing made use of traditional option or RSU schemes. This is related to the fact that six out of the eight companies listing were incorporated in the PRC, where legal and regulatory restrictions constrain their ability to offer equity incentives to PRC-based employees.

As a result:

- Of the two companies listed in 2022 that were incorporated in the Cayman Islands, one adopted a pre-IPO RSU scheme and one adopted a pre-IPO share option scheme.
- One of the companies listed in 2022 that was incorporated in the PRC adopted a pre-IPO RSU scheme.
- The other five companies — all of which were incorporated in the PRC — did not adopt any traditional RSU or option scheme. However, all five of those companies made use of some form of “employee share ownership platform.” Under this structure, sometimes referred to as a “trust scheme,” a special purpose vehicle is established by the company or its founders to hold shares in the listed company for the benefit of employees.

Types of Employee Incentive Schemes Adopted

- Pre-IPO share option scheme
- Pre-IPO RSU scheme
- Employee share ownership platform



Biotech companies that listed on HKEX in 2022

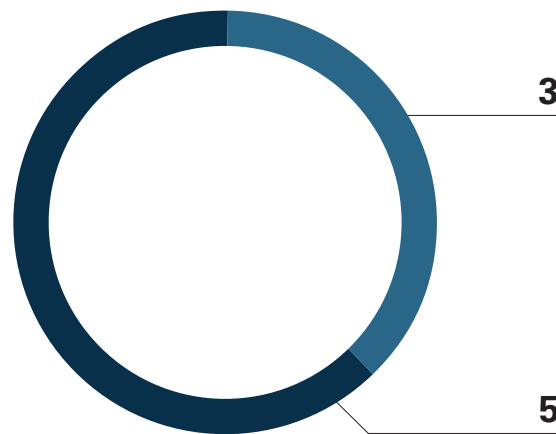
Commercialization Plans

The Listing Rules do not mandate that biotech companies need to manufacture drugs themselves once the products have been approved for sale: Companies can choose to build their own manufacturing capabilities, outsource to a contract manufacturing organization (CMO) or use a combination of both approaches.

We found that three out of the eight companies listed in 2022 stated intentions to build their own manufacturing capabilities, while the remaining five proposed to adopt a combination of both internal capabilities and outsourced manufacturing. None were proposing to rely entirely on outsourcing to a CMO.

Manufacturing Approaches

- Number of companies building in-house manufacturing capabilities
- Number of companies using a combined approach to manufacturing



Biotech companies that listed on HKEX in 2022

Corporate Governance

When investing in pre-revenue biotech companies, investors rely on the ability of the senior management team and the board of directors overseeing the activities of senior management to identify promising drugs and make wise decisions about research and development and commercialization. Corporate governance therefore plays a crucial role in determining the success of these companies, and the loss of investor faith in the board or senior management team could significantly impair a biotech company.

This corporate governance review in our third annual report reflects data from all 56 biotech companies listed on HKEX as of December 31, 2022, unless otherwise noted.

Board Size and Composition

The Listing Rules require that independent nonexecutive directors (INEDs) comprise no less than one-third of a company's board, subject to a minimum of three INEDs. Of the 56 companies reviewed, 11 have more than the minimum necessary number of INEDs.



Biotech companies listed on HKEX in 2018-2022

Board Diversity

Diversity is a key focus for regulators, investors, listed companies and their stakeholders.

In 2022, HKEX introduced new Listing Rules requiring all currently listed companies to have at least one female director as soon as practicable and not later than December 31, 2024. New listing applicants must comply with the requirement as of their time of listing.

As a result, the proportion of companies with at least one female director on their boards has increased compared to metrics from the periods covered in our previous reports.

Of the eight companies listed in 2022, only one did not have any female directors, and that company has undertaken to appoint a female director within 12 months after listing.

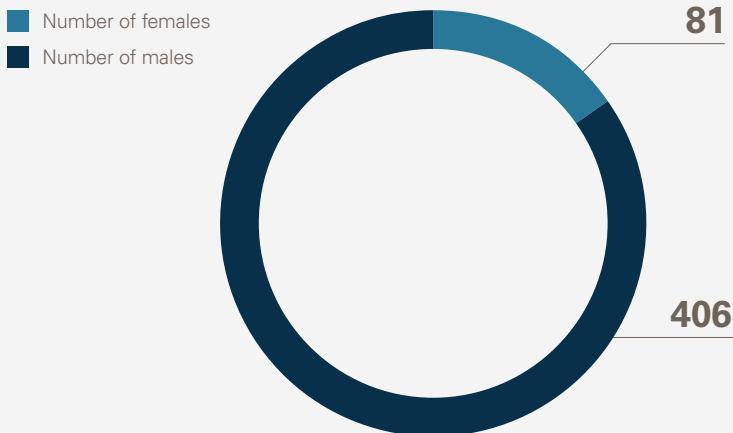
Six of the 56 reviewed companies (11%) did not have a female director on their boards at the time of this report, compared to 10 companies with no female director out of the 48 companies (21%) covered in the 2021 report.

Despite this improvement in female representation, women still make up a low proportion of overall director numbers: Of 487 total directors in the 56 companies covered in this year's report, 81 were women (17%), proportionately only slightly higher than the 66 women of 427 total directors (16%) in last year's report. Companies thus have significant room to make improvements in this area.

Only one of the eight

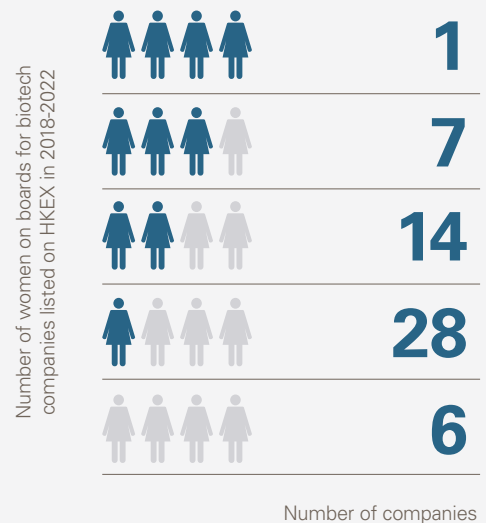
companies listed in 2022 did not have any female directors.

Gender Representation on Surveyed Boards

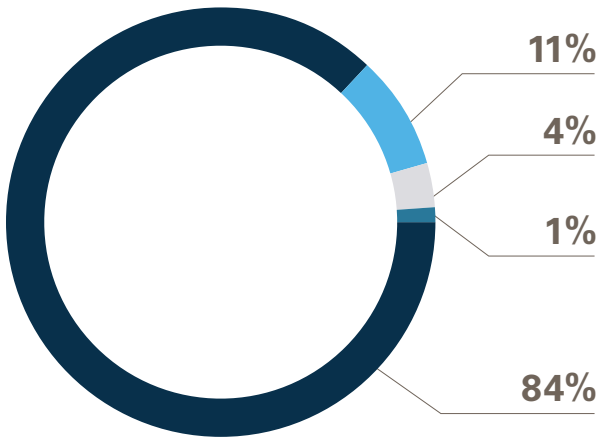


Data represents biotech companies listed on HKEX in 2018-2022

Number of Women on Surveyed Boards



Board Nationality

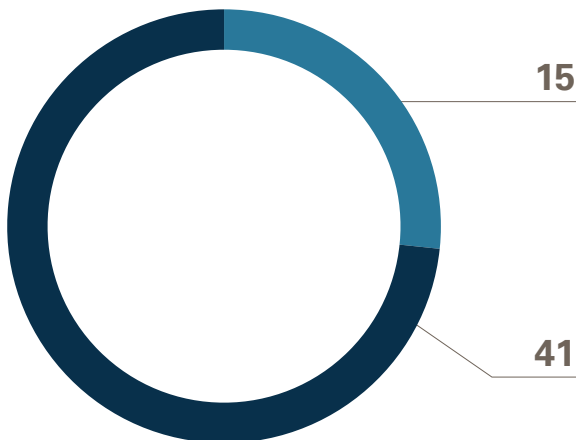


Biotech companies that listed on HKEX in 2022 only

■ China ■ America ■ China (HK) ■ Other

Combined CEO/Chair

The Listing Rules recommend that the roles of chairperson and CEO be performed by separate individuals, but permits companies to combine the roles provided that firms articulate the rationale for doing so. Perhaps owing to the critical role played by a key founder in a biotech company, the same individual served as both chairman and CEO at 41 of the 56 biotech companies listed on HKEX.

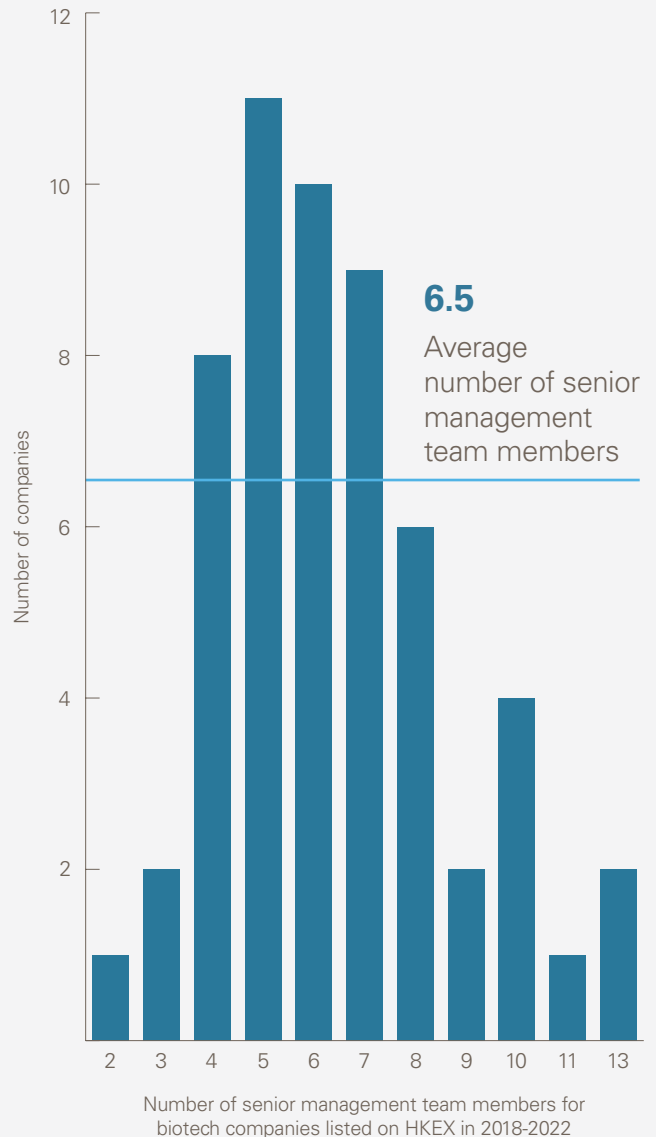


Data represents biotech companies listed on HKEX in 2018-2022

■ Number of companies combining the roles ■ Number of companies separating the roles

Number of Senior Management Team Members Named in Prospectus

HKEX does not prescribe a minimum number of senior management members or define who constitutes "senior management." Each company has discretion to determine which individuals to list as senior management in its prospectus. This results in significant variation in the number of senior management team members reported from company to company, ranging from as low as two members to as many as 13.



Post-IPO Performance

Post-IPO Share Price

Of the 56 companies listed between 2018 and 2022, only 12 were trading above their IPO prices as of December 31, 2022, and average share price change from IPO through to December 31, 2022, across all companies represented a loss of 27%. (For broader context, the Hang Seng Index fell around 22% from December 31, 2018, to December 31, 2022.)

However, underperformance across the broader sector masked outperformance by individual companies, with some companies showing gains of between 130% and 200% during the same period as certain market participants began to see their R&D and commercialization efforts yield success.

Number of Companies With a Share Price Above IPO Price

- At or above IPO price
- Below IPO price

-28%

Average share price change from IPO through December 31, 2022



Data represents biotech companies listed on HKEX in 2018-2022

Follow-On Fundraising

A key reason for conducting an IPO and becoming a public company is to create a platform for future fundraising activities. This is particularly important for companies in the biotech space, which have an ongoing need for capital to fund R&D activities prior to drug candidates being commercialized. However, the Listing Rules restrict new share issuances by newly listed companies for a period of six months after listing in order to avoid undue dilution to IPO investors.

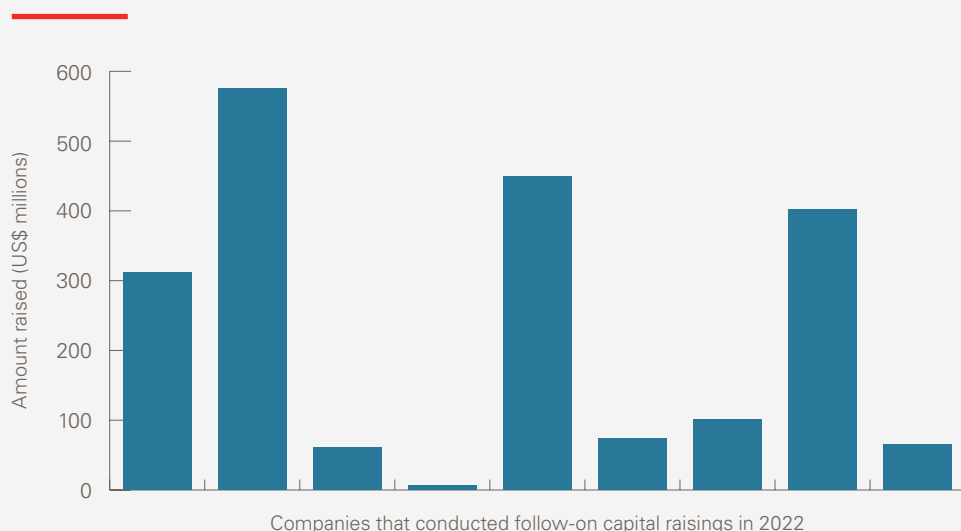
In our previous report, we noted that as of December 31, 2021, 33 biotech companies had been listed on HKEX for more than six months, of which 14 had conducted one or more equity capital raisings subsequent to IPO.

For the period covered by this report, notwithstanding challenging market conditions, follow-on fundraisings for biotech issuers in Hong Kong have been relatively healthy, with nine companies (of the 50 listed for six months or more) conducting follow-on equity capital raisings in the year ended December 31, 2022, and a further six companies conducting follow-on equity capital raisings from January 1, 2023, through to the date of this report.

In our previous report, we identified a strong correlation between positive post-IPO share price performance and the decision and/or ability to raise further capital, with 12 of the 14 companies raising capital as of December 31, 2021, featuring a share price trading above IPO price. We saw that trend continuing during the year ended December 31, 2022: Six out of the nine companies raising equity capital last year were among those with a share price trading above IPO price.

Also of interest is that three of the nine equity raisings in 2022 involved companies raising capital in the mainland China market by offering A-shares and undertaking a listing on the Shanghai Stock Exchange.

Follow-On Fundraising Levels



Nine companies

conducted follow-on fundraising in 2022 (out of 50 companies listed for six months or more).

US\$227.23 million

Average funds raised from follow-on capital raisings

“B” Marker Status

Companies listing pursuant to Chapter 18A of the Listing Rules must include a “B” marker next to their stock name to signify their status to investors as a pre-revenue biotech company.

Under Listing Rule 18A.11, after a company begins to generate revenues such that it meets one of the three financial tests in Listing Rule 8.05, it can apply to HKEX to have the “B” marker removed. Removal of the “B” marker also eliminates certain restrictions imposed under Chapter 18A of the Listing Rules, such as the requirement to consult HKEX if a fundamental change occurs to the principal business activities of the company.

During the period analyzed, two additional companies — CanSino Biologics Inc. and Zai Lab Limited — joined the other four companies (BeiGene, Ltd., Innovent Biologics, Inc., Shanghai Junshi Biosciences Co., Ltd. and Shanghai Henlius Biotech, Inc.) that had successfully applied to have the “B” marker removed as a result of meeting one or more of the financial tests. In both new cases, this was achieved 26 months after the companies’ initial listings.

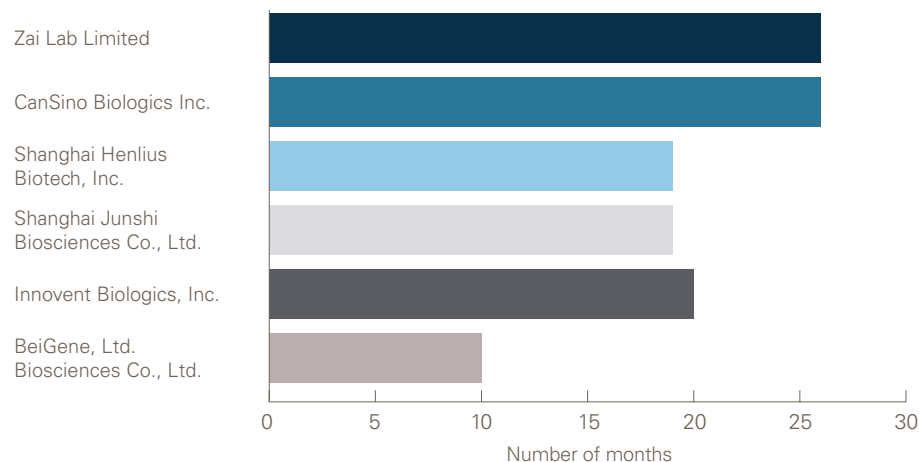
The three financial tests are as follows:

- 1 Profits test:** A company must report a profit of no less than HK\$35 million in the most recent financial year and an aggregate profit of no less than HK\$45 million in the two years prior to that.
- 2 Market cap/revenue/cash flow test:** A company must report a market capitalization of no less than HK\$2 billion, revenues of at least HK\$500 million in the most recent financial year and positive cash flow from operating activities of no less than an aggregate of HK\$100 million over the three preceding financial years.
- 3 Market cap/revenue test:** A company must report a market capitalization of no less than HK\$4 billion and revenues of at least HK\$500 million in the most recent financial year.

Two companies

were able to remove the “B” marker in 2022.

Time From IPO to Removal of B-marker





Report Methodology and Contacts

Report Methodology

This report includes data on the following eight biotech companies that listed on HKEX during the year ended December 31, 2022:

3D Medicines Inc.

Biocytogen Pharmaceuticals (Beijing) Co., Ltd

Cryofocus Medtech (Shanghai) Co., Ltd.

Jenscare Scientific Co., Ltd.

Jiangsu Recbio Technology Co., Ltd.

Lepu Biopharma Co., Ltd.

Rainmed Medical Limited

Shandong Boan Biotechnology Co., Ltd.

In addition, where noted in the text, this report includes data on the following 48 biotech companies that listed on HKEX prior to January 1, 2022:

Abbisko Cayman Ltd.

Acotec Scientific Holdings Limited

Akeso, Inc.

Alphamab Oncology

Antengene Corporation Limited

Ascentage Pharma Group International

Asclepis Pharma Inc.

BeiGene, Ltd.

Beijing Airdoc Technology Co., Ltd.

Brii Biosciences Limited

Broncus Holding Corporation

CANbridge Pharmaceuticals Inc.

CanSino Biologics Inc.

CARsgen Therapeutics Holdings Limited

Clover Biopharmaceuticals, Ltd.

CStone Pharmaceuticals

Everest Medicines Limited

Genor Biopharma (formerly JHBP (CY) Holdings Limited)

HBM Holdings Limited

Hua Medicine (Shanghai) Ltd.

Immunotech Biopharm Ltd

InnoCare Pharma Limited

Innovent Biologics, Inc.

Jacobio Pharmaceuticals Group Co., Ltd.

JW (Cayman) Therapeutics Co. Ltd

Keymed Biosciences Inc.

Kintor Pharmaceutical Limited

Mabpharm Limited

MicroPort CardioFlow Medtech Corporation

MicroTech Medical (Hangzhou) Co., Ltd.

New Horizon Health Limited

Ocumension Therapeutics

Peijia Medical Limited

RemeGen Co., Ltd.

Shanghai Bio-Heart Biological Technology Co., Ltd.

Shanghai HeartCare Medical Technology Corporation Limited

Shanghai Henlius Biotech, Inc.

Shanghai Junshi Biosciences Co., Ltd.

Shanghai MicroPort MedBot (Group) Co., Ltd.

SinoMab BioScience Limited

Sirnaomics Ltd.

Suzhou Basecare Medical Corporation Limited

TOT BIOPHARM International Company Limited

Transcenta Holding Ltd.

Venus Medtech (Hangzhou) Inc.

Zai Lab Limited

Zhaoke Ophthalmology Limited

Zylox-Tonbridge Medical Technology Co., Ltd.

Sources

All data in this report was obtained from publicly available sources.

Exchange Rates

The exchange rates used in this report are US\$1 = HK\$7.75 and US\$1 = RMB6.5.

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