

## China Healthcare

## 2024 Year Ahead: hope shines through a bumpy ride

## Industry Overview

2023 was a turbulent year for the China healthcare sector. Along with the muted funding environment domestically, it suffered obstacles such as ACC but also witnessed breakthroughs on the global stage. Into 2024, we expect the funding environment to remain sluggish in early quarters, and regarding specific stocks, we like companies that recover from ACC, those with the ability to thrive overseas, and differentiated niche players.

**Funding environment awaiting recovery**

After the frenzy brought by Covid, ex-China biotech funding had been on a downtrend and bottomed in 1Q23. However, that of China has been declining since its peak in 4Q20 and remains murky. For the first 11 months of 2023 (11M23), funds raised globally were +15% YoY versus -14% YoY in China. As the US 10-year treasury yield is highly reverse correlated with the funding and projected Fed rate cut from June 2024, we expect the environment to continue facing pressures in 1H24 and to recover from 2H24. After this situation reverses, we believe that leading CXO companies should outperform.

**Anti-corruption campaign impact should normalize**

Since the implementation of ACC in late July 2023, academic conferences, tendering, and surgeries saw disruptions in 2H23, but we see evidence that the worst is over and a recovery is on the way (e.g., tenders for CT up 18% YoY in October 2023 versus -13% in 3Q23). With ACC normalizing, we expect the negative impact to gradually moderate in 1H24 and see a full-fledged recovery in 2H24.

**Global market presenting new opportunities**

Besides the recent ACC, other policies and macro factors have honed the domestic drug and device companies over last few years, empowering them to compete in the global market. We have observed several major license-out deals from China biotech/pharma (e.g., Hansoh's two US\$1.5bn out-licensing deals with GSK) and FDA approvals of home-grown innovative drugs in 2H23. Meanwhile, leading medical devices companies are expanding their market presence overseas with robust growth. Therefore, we focus on companies that have a presence in overseas markets with solid development capability.

**Niche players differentiating from the industry**

BofA Global Research expects 2024 to be a year full of uncertainty for the healthcare industry and the overall macro environment. Therefore, we prefer medium-size niche players within segments of the healthcare industry that could differentiate themselves from the field with their unique offerings.

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See Exhibit 24 for abbreviations.

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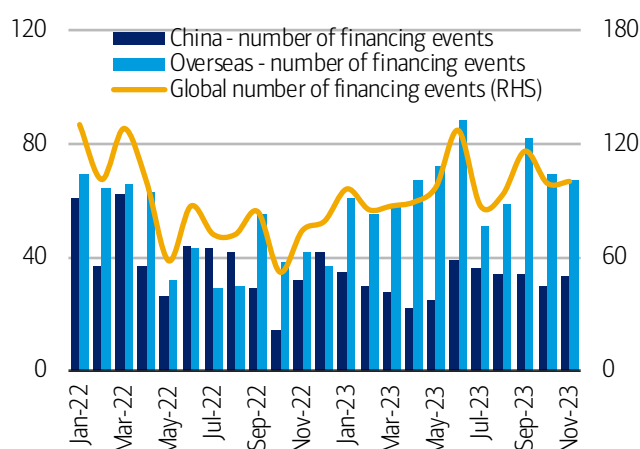
## 2024 key themes

### Biotech funding: Signs of recovery overseas, but still chilly in China

In 2023, we observed signs of recovery for biotech financing in the overseas private market, while in China, it is still chilly. In terms of the number of financing activities, we saw 1,076 financing events for innovative drugs globally for 11M23, up 12% YoY, according to Pharmcube. Yet, in China, such number is 346, down 19% YoY, compared with the 730 events in the overseas market (+37% YoY). Additionally, regarding the amount of funds raised, we overall observed 15% YoY growth for 11M23 globally, but the trend still differs by region, as the amount raised for innovative drugs in the private market rose by 25% YoY to US\$37.1bn overseas, while that in China dropped by 14% YoY to US\$9.1bn, according to Pharmcube.

#### Exhibit 1: Number of financing events

The global number of financing events for innovative drugs saw signs of recovery in 2023

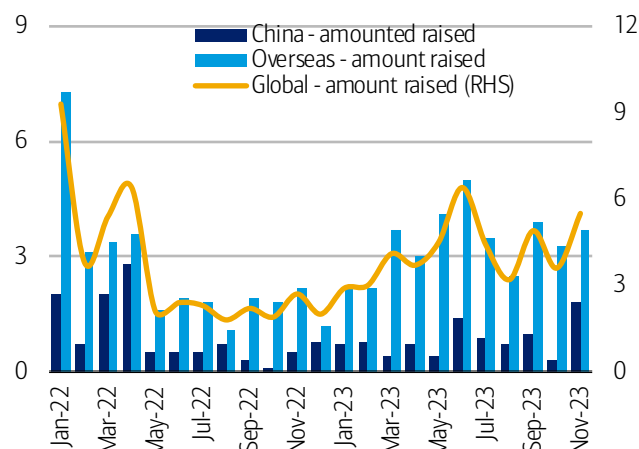


Source: BofA Global Research, Pharmcube

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#### Exhibit 2: Amount raised through financing activities (USD bn)

Amount raised for innovative drugs globally through financing events saw signs of recovery in 2023

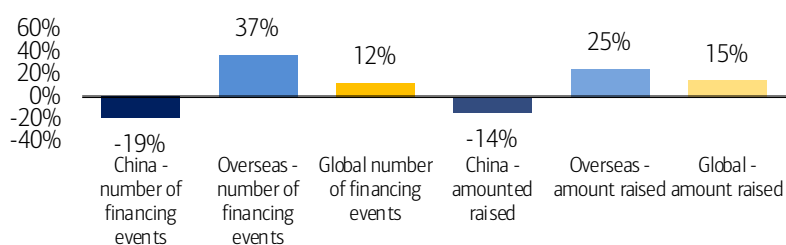


Source: BofA Global Research, Pharmcube

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#### Exhibit 3: YoY change of financing events/amount raised for innovative drugs during Jan-Nov 2023 by region

Biotech financing saw a sign of recovery in the overseas market excluding China



Source: BofA Global Research, Pharmcube

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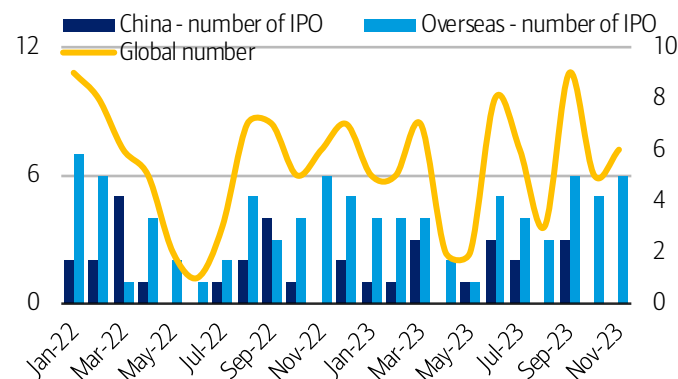
### IPOs largely flat, while an uptrend observed in M&A market

The IPO market (for innovative drugs companies) was largely flat in 11M23 (-2% YoY) compared with 11M22 in terms of the IPO numbers globally but vary in different regions. For example, there were 14 related IPOs in China in 11M23 (vs. 18 in 11M22) and 44 related IPOs overseas in 11M23 (vs. 41 in 11M22). However, we observed an uptrend in the M&A market involving the innovative drug companies in 11M23. There were 10 events in the domestic innovative drugs sector in 11M23 (vs. 5 in 11M22), while there were 119 M&A events in the overseas market in 11M23 (vs. 100 in 11M22).

Given the challenging biotech financing environment in China, we expect to see more small biotech in China burn through their cash on hand and a further increase in M&A numbers in the domestic innovative market in 2024.

#### Exhibit 4: Number of IPO events in 2022 and Jan-Nov 23

IPO number appears to be largely flat in 2022 and Jan-Nov 23

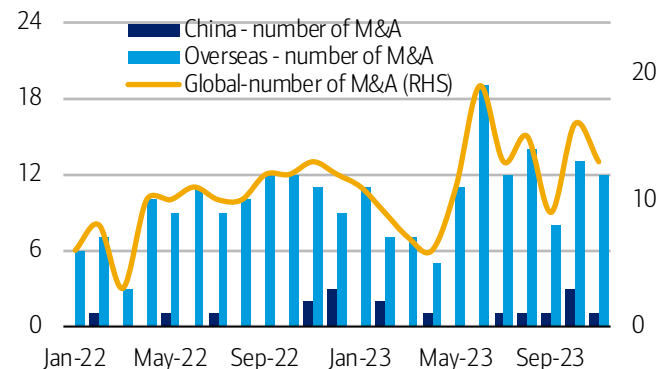


Source: BofA Global Research, Pharmcube

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#### Exhibit 5: Number of M&A events in 2022 and Jan-Nov 23

We observed an uptrend in the M&A market regarding the innovative drug companies in 11M23



Source: BofA Global Research, Pharmcube

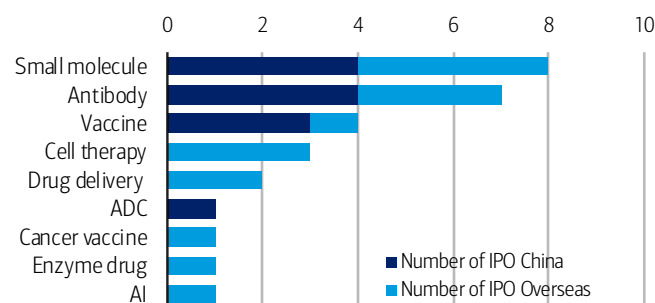
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### Change in the investors' appetite for biotech

Additionally, we observed a change in investors' appetite for innovative drugs in 2023. In the IPO market, small molecule (number 1) and antibody (number 2) subsectors remained the top 2 in terms of the IPO numbers in 1H23 (same as 2022), according to Pharmcube. But the gap between the small molecule and antibody subsectors narrowed in terms of IPO numbers. Regarding the amount of funds raised, the antibody subsector surpassed small molecule to become the number-1 subsector in 1H23. Further, antibody, small molecule, vaccine, ADC, and cancer vaccine were the top five subsectors in terms of IPO projects in 1H23, compared with the ranking of small molecule, antibody, cell therapy, vaccine, and drug delivery in 2022.

#### Exhibit 6: Key subsectors of IPO projects (by number of IPOs) in 1H23

Small molecule ranked number 1 in terms of the number of IPOs

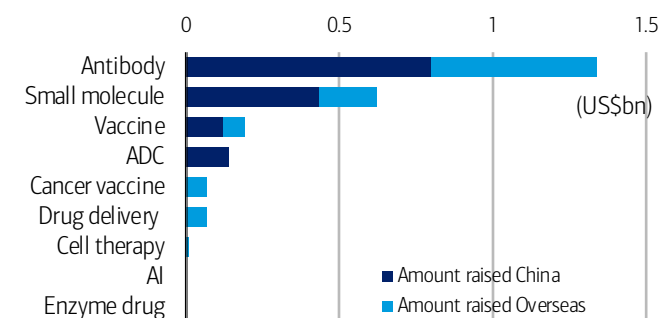


Source: BofA Global Research, Pharmcube

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#### Exhibit 7: Key subsectors of IPO projects (by amount raised) 1H23

Antibody projects ranked number 1 in terms of amount raised in IPOs

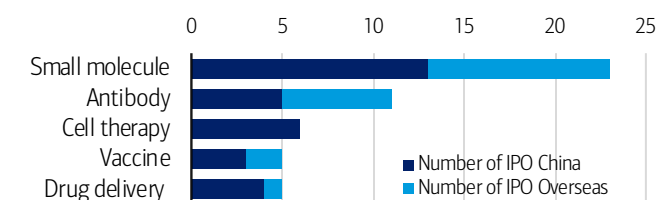


Source: BofA Global Research, Pharmcube

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**Exhibit 8: Top subsectors of IPO projects (by number of IPOs) in 2022**

Small molecule subsector took the lead among the subsectors of innovative drugs in terms of the number of IPOs in 2022



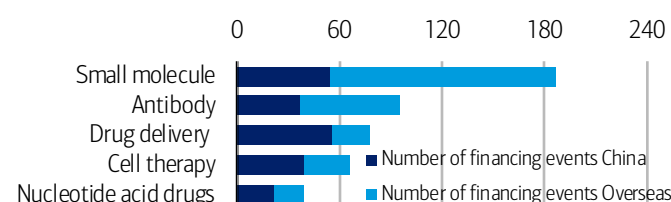
Source: BofA Global Research, Pharmcube

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We also saw a change in investors' preference through private market financing events. By number of financing events, the top five biotech subsectors were small molecule, antibody, drug delivery, cell therapy, and nucleotide acid drugs in 1H23. Notably, we saw more financing events in the drug delivery, cell therapy, and nucleotide acid drugs areas in China compared with the overseas market, implying fast development of these areas in China. Further, in the domestic market, we note that the amount raised in the antibody subsector surpassed that in the small molecule subsector to rank number 1 in 1H23.

**Exhibit 10: Top subsectors by private market financing events in 1H23**

Drug delivery ranked number 3 in terms of financing event numbers in 1H23



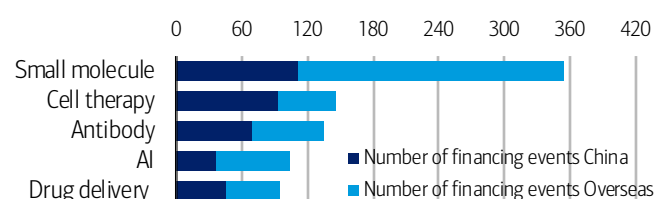
Source: BofA Global Research, Pharmcube

Notes: M&amp;A in not included

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**Exhibit 12: Top subsectors by private market financing events in 2022**

Cell therapy ranked number 2 in terms of financing event numbers in 2022



Source: BofA Global Research, Pharmcube

Notes: M&amp;A in not included

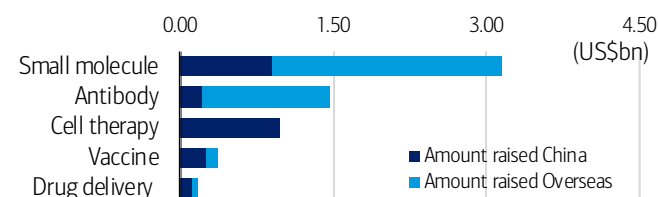
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**Outlook for the biotech funding trend**

Biotech funding has dropped since 2Q21 globally. Global ex-China biotech funding dropped to the bottom in 1Q23 and recovered in 2Q23. For biotech funding in China, the market has been at a low level over the past year. Additionally, we note that global biotech funding has a negative correlation with the US Fed funds rate in the past five years. According to Exhibit 15, biotech funding also follows the trend of the US 10-year treasury yield. Therefore, we expect biotech funding to face pressure in the next 2-3 quarters. Based on BofA Global Research's global thematic investing report, [Thematic Investing: 10 Themes for 2024 – Breadth in rate cuts and markets](#), the Fed funds rate should be cut from June 2024, which should benefit the development of the biotech industry.

**Exhibit 9: Top subsectors of IPO projects (by amount raised) in 2022**

Small molecule ranked number 1 in terms of amount raised in IPOs

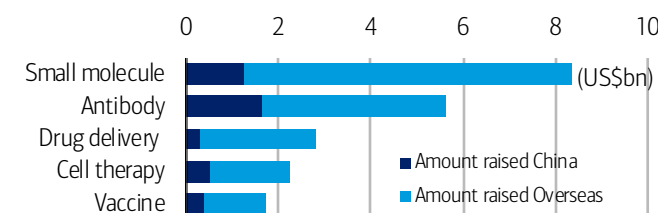


Source: BofA Global Research, Pharmcube

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**Exhibit 11: Top subsectors by amount raised by private market financing in 1H23**

Drug delivery ranked number 3 in terms of amount raised in 1H23



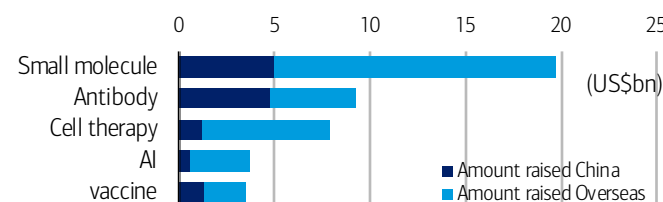
Source: BofA Global Research, Pharmcube

Notes: M&amp;A in not included

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**Exhibit 13: Top subsectors by amount raised by private market financing in 2022**

Cell therapy ranked number 3 in terms of amount raised in 2022



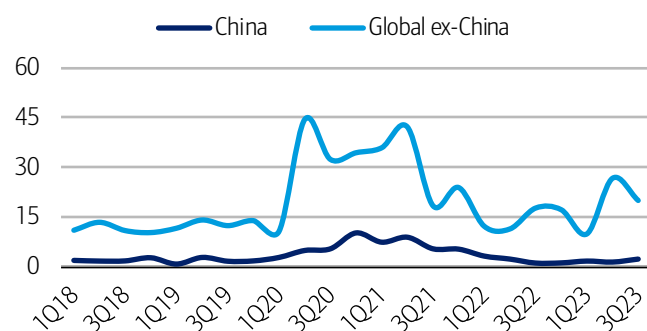
Source: BofA Global Research, Pharmcube

Notes: M&amp;A in not included

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**Exhibit 14: Biotech funding during the past five years (US\$ bn)**

Biotech funding (IPO+FO+PE/VC) from global ex-China peaked in 2Q21

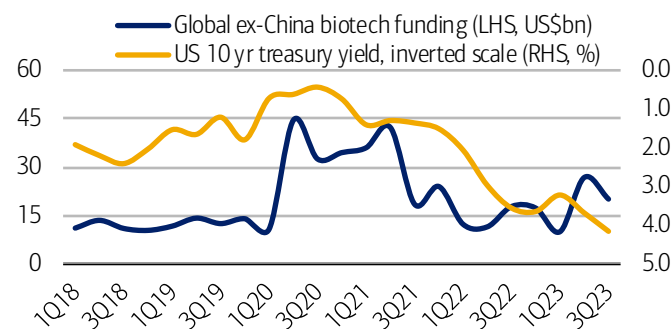


Source: BofA Global Research, Company data

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**Exhibit 15: Biotech funding correlation with US 10-year treasury yield**

Global ex-China biotech funding follows the trend of US 10-year treasury yield



Source: BofA Global Research, Bloomberg

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**Anti-corruption campaign to become normalized**

2023 turned out to be the first year of post-pandemic recovery. We saw resumption of hospital visits and a rebound of surgery volume and other offline activities. However, due to the implementation of the anti-corruption campaign (ACC) by the CCDI in late July 2023, academic conferences, medical equipment public tenders, and elective surgeries saw some disruptions in 2H23. 2024 should be a recovery year from ACC for the China healthcare sector, and we believe that the worst is probably behind us.

In December 2023, the NHC issued a detailed investigation plan, the Inspection Work Plan on Large Hospital (2023-2026), which focuses on the Class-II and higher public hospitals. The Work Plan mainly aims to inspect 1) the construction of an anti-corruption management system, 2) the execution of ACC, 3) supervision of the interaction of physicians with patients and pharmaceutical firms, and 4) monitoring of procurement and facility construction. This round of inspection is expected to be finished before October 2026. Previously, similar rounds of inspection were conducted in 2005, 2010, 2015-17, and 2019-22. On the same day, Administrative Measures of Hospital Inspection (Draft) was issued to specify the authorities in charge of the inspections and their responsibility, and it mentioned that each inspection cycle would last for 4 years. We believe that these policies reveal that ACC is normalizing; doctors' behaviour and device purchase practices are likely to face new norms.

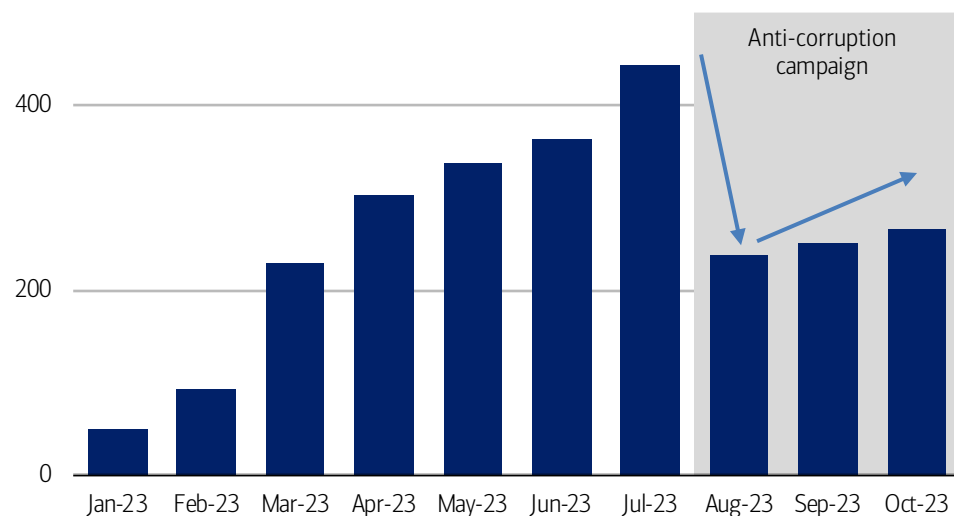
From 3Q23 results, most companies' performance, especially medical device and pharmaceutical companies, was largely better than the market's initial expectation. Considering the gradual recovery of academic conference and regular hospital activities, and a normalized ACC, we see diminishing impact from ACC in 1H24 and expect a full-fledged recovery in 2H24. We believe that medical equipment leaders with strict compliance standards could continue to see business recovery given that hospitals' demand for key medical devices remains solid, and the competitive product portfolio enables the companies to further strengthen their leading position in China.

**Pharmaceutical sales in hospitals have rebounded**

In early September, Guo Yanhong (an official from NHC) delivered a speech and mentioned that ACC must not arbitrarily discourage medical staff from participating in regular academic conferences. After her speech, we noted that a rising number of medical academic conferences were held in September and that most of them were backed by government-related associations, such as the Chinese Medical Association. Both academic conference and sales representatives' hospital visits served as important processes for product marketing. With a recovery in academic conferences, we believe that the ACC impact on new drug promotion activities should gradually decrease.

**Exhibit 16: Number of major medical academic conferences in 2023**

The figure reduced significantly in Aug, then gradually recovered in Sep-Oct 2023.



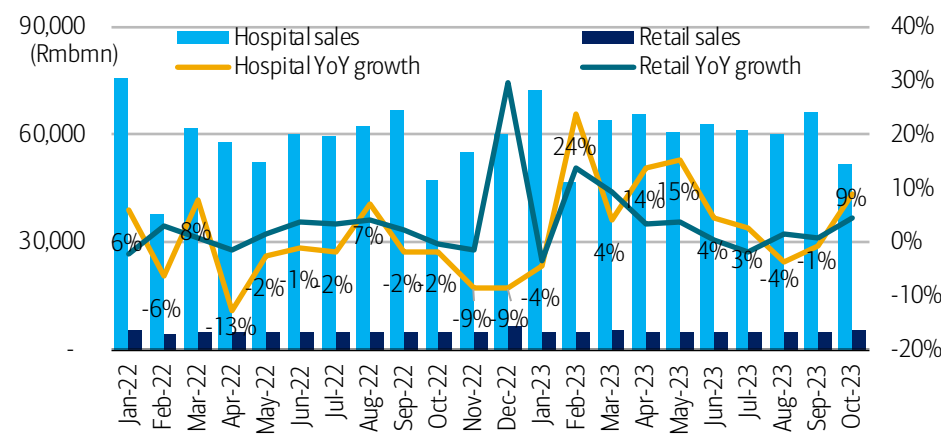
Source: BofA Global Research, Medlive

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Regarding pharmaceutical sales in hospital channel, we believe that they largely recovered to normal levels from October 2023. The influence of ACC on leading pharmaceutical and biotech companies has been essentially eliminated, while small players that mainly rely on kickbacks for drug promotion should gradually exit the industry, in our view. According to total drug sales tracked in the IQVIA database, monthly hospital drug sales decreased around 4% YoY in August 2023, decreased slightly YoY in September 2023, and rebounded to 9% growth in October 2023. The retail sales channel saw no impact from ACC, as YoY growth was 2%/1%/5% in August/September/ October, respectively.

**Exhibit 17: Hospital sales rebounded in Oct 2023**

Drug sales in hospital channel still decreased -1% YoY in Sep and then rebounded to 9% YoY in Oct



Source: BofA Global Research, IQVIA

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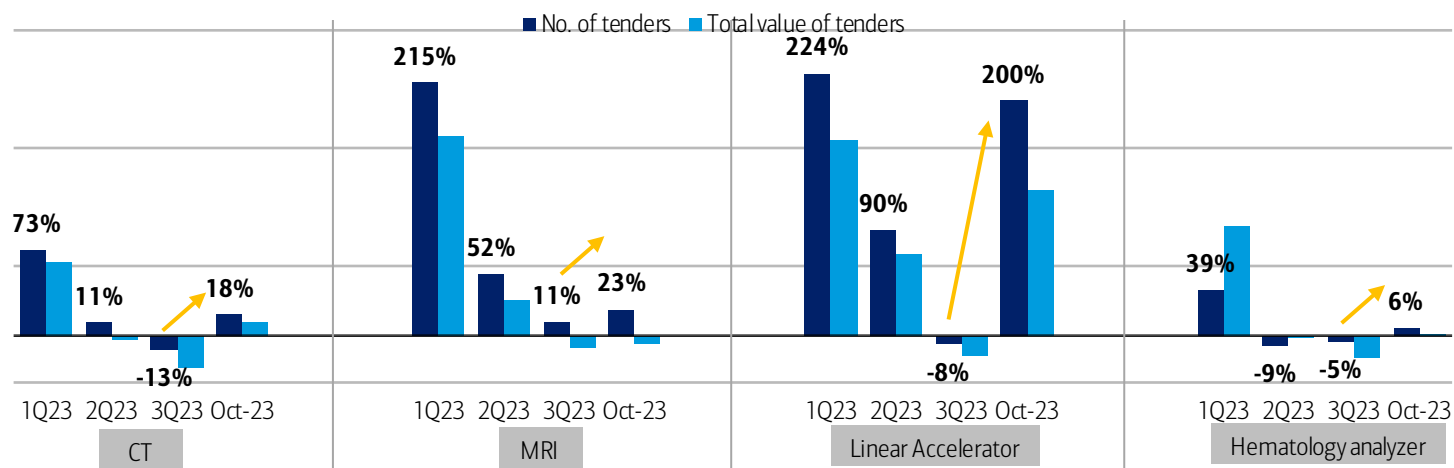
**... medical equipment sector recovery is under way**

Surgeries' recovery trend is similar to that of pharmaceutical sales, and therefore, we estimate that demand for major medical consumables, such as coronary stents and other interventional consumables, rebounded to normal levels from October 2023. On the other hand, hospitals are still cautious on medical equipment purchases and prefer to wait until 1H24 or even after ACC. Public tenders for different medical equipment witnessed diverse trends in October 2023. We note that medical imaging devices, such as CT and MRI, radiology equipment linear accelerator, and IVD hematology analyzers rebounded in terms of total number of tenders in October 2023. According to MD Cloud

data, the number of tenders for CT/MRI/linear accelerator/hematology analyzer witnessed 18%/23%/ 200%/6% YoY growth in October 2023 vs. -13%/11%/-8%/-5% YoY changes in 3Q23, respectively.

#### Exhibit 18: Medical devices tenders recovered in Oct 2023

The number of tenders for CT, MRI, linear accelerator, and hematology analyzers witnessed a rebound in Oct 2023



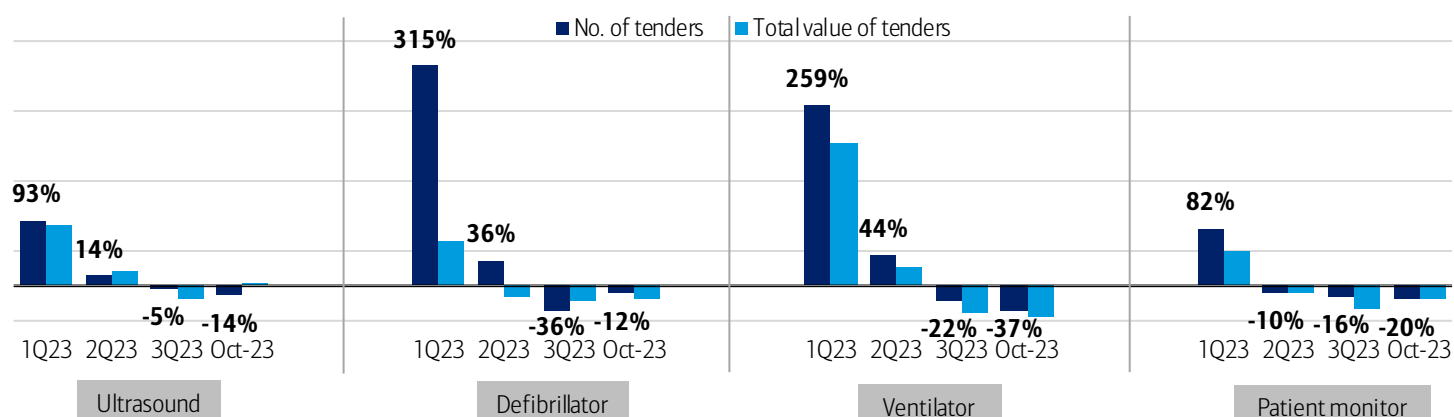
Source: BofA Global Research, MD Cloud

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On the other hand, we observed that ultrasound and life support devices, such as patient monitor devices, ventilators, and defibrillator, have not recovered yet from a public tender perspective. In particular, defibrillator tenders saw some improvement in October 2023, with a 12% YoY drop vs. a 36% YoY drop in 3Q23, while ultrasound/ventilator/patient monitors still witnessed 14%/37%/20% YoY decreases in October 2023, respectively. We believe that hospitals may prefer to use existing equipment and delay the procurement of these devices to avoid further ACC investigations. The purchase activities may recover gradually after CNY and could return to normal levels in 2H24, as hospitals' demand for key medical devices remains strong and should not disappear due to ACC, in our view.

#### Exhibit 19: Medical devices tenders that have not recovered yet

The number of tenders for ultrasound, ventilator, and patient monitor has not rebounded yet



Source: BofA Global Research, MD Cloud

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## Global markets as new opportunities

In the past few years, drugs/devices/consumer products in China have been impacted by the several policies (e.g., NRDL negotiation, VBP, anti-corruption), the weak economic environment, and intense competitions. To survive in the industry, companies have optimized their operating efficiency and focused more on innovation. In this way, their products have become more competitive in the global markets. In 2023, we saw several

license-out deals, FDA approvals of Chinese drugs, and increasing penetration rates for Chinese medical devices.

### Pharma/Biotech: license-out and FDA approvals serve as new catalysts

In 2H23, several pharma/biotech companies made stable progress in the global expansion: **(1) Hansoh** announced that it signed a license-out deal with GSK for its B7-H4 targeted ADC HS-20089 outside Greater China in October 2023, for an upfront payment of US\$85mn; in December 2023, the company announced that it signed another license-out deal with GSK for its B7-H3 targeting ADC HS-20093 outside Greater China with an upfront payment of US\$185mn. **(2) Junshi Bio** announced FDA approval of toripalimab for NPC, the first Chinese PD-1 product approved in the US. **(3) Hutchmed** announced that the US FDA approved fruquintinib for previously treated metastatic colorectal cancer. **(4) Hengrui** reported an agreement with Merck Healthcare for HRS-1167 and HSR-A1904 in mainland China and globally, with an upfront payment of EUR160mn. **(5) Bio-Thera** announced FDA approval of BAT1706 (Bevacizumab similar) on 7 December. **(6) Biokin Pharma** announced an agreement with Bristol-Myers Squibb (BMS) for BL-B01D1 outside mainland China, for an upfront payment of US\$800mn.

Compared with the domestic market, the drugs can be immune from the price cut policies, such as VBP and NRDL in the overseas market, the companies can benefit from decent upfront payments.

#### Exhibit 20: Drugs enjoy higher prices in the US

Price of toripalimab in US is over 30 times higher than the price in China

Drug	Price in US	Price in China
Toripalimab	US\$8,892.03/(240mg)	RMB1,912.96/(240mg)
Fruquintinib	US\$25,200/(5mg*21)	RMB2,513.7 (5mg*7)
Zanubrutinib	US\$15,264.31/ (80mg*120)	RMB5440/(80mg*64)

Source: BofA Global Research, Company data

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#### Exhibit 21: Decent upfront payment to support the development

Hengrui received EUR160mn upfront payments

Deal	Upfront payment	Total deal size
Hansoh & GSK deal on HS-20089	US\$85mn	US\$1.5bn
Hansoh & GSK deal on HS-20093	US\$185mn	US\$1.5bn
Hengrui & Merck deal on HRS-1167 and SHR-A1904	EUR160mn	EUR1.4bn
Biokin Pharma & BMS deal on BL-B01D1	US\$800mn	US\$8.4bn

Source: BofA Global Research, Company data

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#### Exhibit 22: Summary of global development

Hengrui recently licensed-out two products to Merck Healthcare

Company	Event	Asset	Detail
Hansoh	License-out deal	B7-H4 ADC	On Oct 20, Hansoh announced that it has signed a license-out deal with GSK for its B7-H4 targeted ADC outside Greater China, for an upfront payment of US\$85mn, up to US\$1.485bn milestone payment, and tiered sales royalty
	License-out deal	B7-H3 ADC	On Dec 20, the company announced that it has signed another license-out deal with GSK for its B7-H3 targeting ADC HS-20093 outside Greater China with an upfront payment of US\$185mn, and up to US\$1.525bn milestone payment, and tiered sales royalty,
Junshi	FDA Approval	Toripalimab	On Oct 29, the company announced the FDA approval of toripalimab for NPC, being the first Chinese PD-1 product approved in the US.
Hutchmed	FDA Approval	Fruquintinib	On Nov 9, Hutchmed announced that US FDA approved fruquintinib for previously treated metastatic colorectal cancer.
Hengrui	License-out deal	HRS-1167 (PAPR1 inhibitor) HSR-A1904 (Claudin 18.2 ADC)	On Oct 30, the company reported an agreement with Merck Healthcare for HRS-1167 (PAPR1 inhibitor) and HSR-A1904 (Claudin 18.2 ADC) in mainland China and globally, with an upfront payment of EUR160mn, milestone payment, and double-digit net sales royalties.
Bio-Thera	FDA Approval	Bevacizumab similar	On Dec 7, the company announced FDA approval of BAT1706 (Bevacizumab similar).
Biokin Pharma	License-out deal	BL-B01D1	On Dec 11, the company reported an agreement with BMS for BL-B01D1 (EGFR/HER3 ADC) in ex-mainland China, with an upfront payment of US\$800mn, US\$500mn near-term payments, and US\$7.1bn milestone payment.

Source: BofA Global Research, Company data

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We note that several assets may have opportunities in the overseas market: **Junshi Bio**: Tifcemalimab – the Phase III study of its combo treatment with toripalimab for LS-SCLC was agreed for initiation by the FDA in June 2023. **Beigene**: BGB-11417 (Bcl-2 inhibitor) is under MRCT and appears to be more potent than venetoclax. It could be combined



with zanubrutinib. **Hengrui:** SHR-A2009 (HER3 ADC) is also under MRCT and showed a tolerable safety profile with encouraging anti-tumor activity in advanced solid tumors. **Remegen:** RC118 (Claudin 18.2 ADC) has been granted two orphan drug designations for GC and pancreatic cancer by the FDA in 2022.

### Exhibit 23: Summary of assets from China biotech/pharmaceutical companies that may have opportunities in overseas market

We summarize the assets that may have opportunities in overseas market

Company	Drug	Target	Details
Hengrui	SHR-A2009	HER3 ADC	The product is in phase I clinical trial in China, South Korea and Japan. It showed a tolerable safety profile and encouraging anti-tumor activity in advanced solid tumors.
CSPC	CPO301	EGFRADC	In Apr 2023, the product obtained clinical trial approval in the US. In Jun 2023, it was granted fast track designation in the US. In Jun 2023, the product obtained clinical trial approval in Canada.
Beigene	BGB-11417	Bcl-2 inhibitor	We believe candidate with potential better efficacy; initiated MRCT and have synergy with existing products that have been launched in global market may have a global story. BGB-11417 is a Bcl-2 inhibitor currently in phase 1 stage. It appears to be more potent than venetoclax; and it is well-positioned to be combined with zanubrutinib.
Innovent	IBI343	CLDN18.2 ADC	Phase 1 MRCT ongoing in Australia and China. IBI343 has potential best-in-class profiles with differentiated design for potential wide therapeutic window and high potency.
SBP/F-star	FS118	LAG-3/PD-L1	Potentially first-in-class LAG-3/PD-L1, is currently in a phase 2 Proof of Concept study in acquired resistance head and neck cancer, NSCLC and DLBCL patients.
Kelun-Biotech	A223	JAK1/2 inhibitors	In the phase 2 trial, A223 demonstrated promising anti-rheumatic efficacy in moderate-to severe Rheumatoid arthritis patients. And the company plans to launch the ph3 clinical trial in China in 2H23.
Remegen	RC118	Claudin 18.2 ADC	RC118 has been granted two orphan drug designations for GC and pancreatic cancer by FDA in Dec 2022. And currently it is at ph1 development stage in China
	RC108	c-met ADC	FDA granted clinical trial approval in 2022 to RC108 for the treatment of patients with c-Met-positive solid tumors
Junshi Bio	Tifcemalimab	BTLA mAbs	On Jun 29, 2023, the company published that FDA has agreed a Phase III clinical trial of tifcemalimab in combo with toripalimab for LS-SCLC.
Lepu Biopharma	MRG003	EGFR ADC	The product has been granted ODD from FDA In 2022 for the treatment of NPC, and a Phase II study is ongoing for the indication.

Source: BofA Global Research, Company data

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### Medical devices: growth momentum continues from exports

Leading medical device companies in China have already been expanding in the global markets in recent years. We expect leading medical device companies' overseas business development momentum to continue going forward.

### Niche players that differentiate from the industry

The correlation between medical expense and the economic situation cannot be ignored for most healthcare segments. For example, some medical consumer products have similar characteristic of consumer discretionary, which means that they are not considered essential for patients or consumers. Also, gloomy economic conditions could hardly breed a roaring financing environment, and institutions would turn cautious when making CAPEX or investment decisions. Thus, given the unclear economic outlook of China entering 2024, we like the opportunities presented by niche players that differentiate themselves from their corresponding industries, as the leading enterprises tend to deliver growth in line with that of overall industry, while medium-sized niche players with unique features that render them relatively immune to the macro environment could keep pace during times of major economic uncertainty.

## Companies under coverage

### Beigene (BGNE US, Neutral)

In 9M23, Beigene booked total revenue of US\$781.3mn, up 102% YoY. The higher-than-expected revenue growth was mainly due to sharp growth of BRUKINSA, attributed to the considerably increased market share among treatment native and R/R CLL or SLL patients. We expect the growth momentum of BRUKINSA to continue in 2024. Potential milestone events in 2024 for Tislelizumab include US FDA approved for 2L ESCC and EMA approval for 1L and 2L NSCLC in 1H24 and marketing application in Japan. On pipeline development, the enrollment of AdvanTIG-302 trial for Ociperlimab in 1L NSCLC is projected to be completed in 1Q 2024 and initiation of first-in-human trials for PVRIG (CDK4i) in 1Q24. For manufacturing facilities, the company estimates that the US flagship manufacturing and clinical R&D facility in Hopewell, New Jersey, will commence operation in summer 2024. Regarding the new NRDL, 1) Tislelizumab is newly included for 1L GC and 1L ESCC, 2) BRUKINSA is newly included for TN CLL/SLL and TN WM, 3)



Baituowei is newly included for prostate cancer requiring ADT, 4) Sylvant is newly included for idiopathic multicentric Castleman disease, 5) Denosumab is newly included for solid tumor patient with bone metastases to reduce skeletal-related events (SREs). We expect the related products to further ramp up due to the implantation of new NRDL in 2024. Additionally, we expect the impact from the ACC to wane in 2024, which should benefit the sales of the company's innovative drugs. We maintain our Neutral rating with a price objective (PO) of US\$200/HK\$120.77, considering its on-track international development pipeline balanced against price cut risks in the China domestic market.

## **Zai Lab (ZLAB US, Buy)**

In 9M23, Zai Lab booked total revenue of US\$200.9mn, up 33.4% YoY. Specifically, Efgartigimod got BLA approval for gMG (intravenous) in China in June 2023 and recorded revenue of US\$4.9mn, as of end-September 2023. We expect sales of Efgartigimod to further ramp up in 2024. In addition, we expect subcutaneous Efgartigimod to receive BLA approval for gMG in 2024, providing a more flexible and convenient administration route for patients. Efgartigimod (IV) was newly included in the NRDL for the treatment of adult patients with gMG. We believe that NRDL inclusion should further facilitate sales ramp-up in China. Overall, we expect the company to post YoY revenue growth of 24.5%/50.9% in 2023/24, driven by the ramp-up of its core products.

Regarding pipeline development, we expect the company to release the data readout for the ph3 study of TTF in NSCLC with brain metastases (METIS) in 1Q24 and the data readout for ph3 study of TTF in pancreatic cancer (PANOVA-3) in 2H24. In addition, we expect the company to submit a marketing authorization application for TTF for NSCLC in China in 2024. Regarding other late-stage clinical assets, we expect Sulbactam-Durlobactam to get NDA approval for acinetobacter infections in China in 2024 and Repotrectinib to be approved for ROS1 NSCLC by NMPA in 2024. We also expect the company to submit an NDA for KARZATI, a KRAS<sup>G12C</sup> inhibitor, for 2L+ NSCLC in China and to join the global ph3 FORTITUDE-102 study (Bemarituzumab) in 1L GC/GEJ cancer in China. Owing to the on-track pipeline development and commercialization of its products, we maintain our Buy rating and PO of US\$37.0/HK\$28.67.

**Exhibit 24: Abbreviation list**

Please find abbreviations below

**Abbreviations**

AAALAC: Association for Assessment and Accreditation of Laboratory Animal Care	FDA: Food and Drug Administration	NRDL: National Reimbursement Drug List
ACC: Anti-corruption campaign	GC: Gastric Cancer	NSCLC: Non-small cell lung cancer
ADC: Antibody drug conjugates	GCGR: Glucagon receptors	NT-proBNP: N-terminal pro b-type natriuretic peptide
ADT: androgen deprivation therapy	GIPR: Gastric inhibitory peptide receptor	PAI: Pre-approval inspection
ALK: Anaplastic lymphoma kinase	GLP: Good laboratory practice	PARP: Poly ADP ribose polymerase
ASP: Average selling price	GLP-1R: Glucagon-like peptide-1 receptor	PBPV: serotype-independent protein-based pneumococcal vaccine
BCMA: B-cell maturation antigen	gMG: generalized Myasthenia Gravis	PCSK9: proprotein convertase subtilisin/kexin type 9
BD: Business development	GMP: Good Manufacturing Practices	PCV13i: Pneumococcal conjugate vaccines
BLA: Biologics License Application	HER2: Human epidermal growth factor receptor 2	PD-1: Programmed cell death protein 1
CB: convertible bond	HER3: Human epidermal growth factor receptor 3	PET: positron emission tomography
CCDI: Central Commission for Discipline Inspection	HPV: Human papillomavirus	PGD: pre-implantation genetic diagnosis
CDK4i: Cyclin-dependent kinase 4 inhibitor	hs-cTnI: high-sensitive cardiac troponin I	PGS: pre-implantation genetic screening
CDMO: Contract development and manufacturing organizations	IFRSs: International Financial Reporting Standards	pMMR: proficient mismatch repair
CE: Conformité Européenne	IgAN: Immunoglobulin A Nephropathy	PoS: Possibility of Success
CKD: Chronic kidney disease	IL-2: Interleukin-2	PPQ: Process Performance Qualification
CLDN18: Claudin-18	IV: intravenous	PTH: Pien Tze Huang
CLIA: Chemiluminescent Immunoassays	IVD: In Vitro Diagnostics	R/R: Relapsed/Refractory
CLL: Chronic Lymphocytic Leukemia	IVF: In vitro fertilization	ROS1: is a receptor tyrosine kinase
CMC: Chemistry, manufacturing and control	JAK1: Janus Kinase 1	SLL: Small Lymphocytic Lymphoma
CMO: Contract manufacturing organizations	KRAS: K-Rasprotein	SOE: state-owned enterprise
CNMDC: China National Medical Device Co., Ltd.	LDT: Laboratory Developed Tests	SPD: Supply, processing, and distribution
CNY: Chinese New Year	M&A: Merge and acquisition	TB: tuberculosis
CRM: Cardiac Rhythm Management	MCV4: group A, C, Y and W135 meningococcal conjugate vaccine	TCM: Traditional Chinese Medicine
CRO: Contract research organization	MIS: Minimally invasive surgery	TIDES: Oligonucleotide and Peptide CRDMO Services
CRP: C-reactive protein	MM: Multiple Myeloma	TN: Treatment-Naïve
CT: computed tomography	MNC: Multinational corporation	Tomo: Tomotherapy
CTA: Clinical Trial Application	MR/MRI: magnetic resonance imaging	TRT: Tong Ren Tang
CXO: Contract organization	MRCT: Multi-Regional Clinical Trials	TTF: Tumor Treating Fields
DP: Drug Product	NBMI: National Basic Medical Insurance	UC: ulcerative colitis
DS: Drug Substance	NDA: new drug application	VBP: Volume Based Procurement
DTcP: diphtheria, tetanus and acellular pertussis combined vaccine	NEDL: National Essential Drug List	VEGF: Vascular endothelial growth factor
EMA: European Medicines Agency	NGS: Next-generation sequencing	vs: versus
ESA: erythropoiesis-stimulating agents	NHC: National Health Commission	WM: Waldenström's macroglobulinemia
ESCC: Esophageal cancer	NMPA: National Medical Products Administration	YNBY: Yunnan Baiyao

Source: BofA Global Research

BofA GLOBAL RESEARCH

**Exhibit 25: Stocks mentioned**

Prices and ratings for stocks mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
BGNE	BGNE US	Beigene	US\$ 165.38	C-2-9
XBETF	6160 HK	Beigene	HK\$ 98	C-2-9
XCDZF	9688 HK	Zai Lab	HK\$ 20.85	C-1-9
ZLAB	ZLAB US	Zai Lab	US\$ 26.53	C-1-9

Source: BofA Global Research

BofA GLOBAL RESEARCH

## Price objective basis & risk

### Beigene (BGNE / XBETF)

We derive our 12-month PO of USD200 /HKD120.77 based on DCF valuation. We use a WACC of 10.6%, and a terminal growth rate of 4.5%.

Downside risks to our PO are (1) NRDL negotiation pricing pressure on BeiGene's upcoming market launch in large indications, (2) drug sales below our expectation, (3) setback in drug development and a delay in product approvals, (4) larger-than-expected COVID-19 impact.

Upside risks: (1) better-than-expected clinical data, and (2) faster-than-expected progress of pipeline candidates, (3) drug sales beat our estimates.

### Zai Lab (ZLAB / XCDZF)

Our price objective is US\$37.00/HK\$28.67 for ADR/H-share. We use discounted cash flow (DCF) methodology to assess the equity value given the company just started to generate sales and the majority of its value comes from future drug sales. We assume 14.3% WACC, a terminal growth rate of 3.5%, 5% debt and 95% equity financing (we assume equity issuance would be the major financing approach), 4% risk free rate, 7% equity risk premium, 3.4% cost of debt, 15% long-term effective tax rate, and a derived cost of equity 14.9%. We assume a beta of 1.55.

Downside risks are (1) Zejula or Optune sales below expectation, (2) Late-stage pipeline product approval delay, (3) COVID-19 impact longer than thought.

## Analyst Certification

I, David Li, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

## APR - Healthcare Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	Adicon Holdings	XADKF	9860 HK	David Li
	Aier Eye Hospital	XAEOF	300015 CH	David Li
	Amvis Holdings	XEPSF	7071 JP	Ritsuo Watanabe
	Angelalign Technology Inc	AGLFF	6699 HK	David Li
	APM Human Services	XBZXF	APM AU	Lyanne Harrison
	Apollo Hospital	XWQAF	APHS IN	Neha Manpuria
	Asahi Intecc	AHICF	7747 JP	Ritsuo Watanabe
	Aurobindo	XLZFF	ARBP IN	Neha Manpuria
	Australian Clinical Labs	XAUKF	ACL AU	Lyanne Harrison
	Autobio Diagnostics Co Ltd	XQDXF	603658 CH	Sandra Sun
	AVITA	AVHHL	AVH AU	Lyanne Harrison
	AVITA	RCEL	RCEL US	Lyanne Harrison
	Baiyunshan	GZPHF	874 HK	Sandra Sun
	Bangkok Chain Hospital	BKKFF	BCH TB	Charti Phrawphraikul
	Bangkok Dusit Medical Services	BDUFF	BDMS TB	Charti Phrawphraikul
	Beijing Tongrentang Co., Limited	BJTGF	600085 CH	David Li
	Biocon	XLOFF	BIOS IN	Neha Manpuria
	Bumrungrad Hospital	BUHHF	BH TB	Charti Phrawphraikul
	Cansino Bio	CASBF	6185 HK	David Li
	Chugai Pharm.	CHGCF	4519 JP	Koichi Mamegano
	Chularat Hospital Group	XOCOF	CHG TB	Charti Phrawphraikul
	CSL Limited	CMXHF	CSL AU	Lyanne Harrison
	Daiichi Sankyo	DSKYF	4568 JP	Koichi Mamegano
	Daiichi Sankyo	DSNKY	DSNKY US	Koichi Mamegano
	Dr. Reddy's	DRYBF	DRRD IN	Neha Manpuria
	Dr. Reddy's	RDY	RDY US	Neha Manpuria
	EBOS Group Limited	EBOSF	EBO NZ	Lyanne Harrison
	EBOS Group Limited	XEBOF	EBO AU	Lyanne Harrison
	Eisai	ESALF	4523 JP	Koichi Mamegano
	Everest Medicine	XMLKF	1952 HK	David Li
	Fisher & Paykel Healthcare	XPAXF	FPH AU	Lyanne Harrison
	Fisher & Paykel Healthcare	FSPKF	FPH NZ	Lyanne Harrison
	Fortis Health	XFTTF	FORH IN	Neha Manpuria
	Frontage	FGHQF	1521 HK	David Li
	Gland Pharma	XGLPF	GLAND IN	Neha Manpuria
	Glenmark Life Sciences	XWDPF	GLS IN	Neha Manpuria
	Gushengtang	GSHTF	2273 HK	David Li
	Huadong Medicine	XCPDF	000963 CH	Ethan Cui
	Hygeia Healthcare	HYHHF	6078 HK	Ethan Cui
	Imeik	ZMITF	300896 CH	Ethan Cui
	Innovent	IVBXF	1801 HK	David Li
	Integral Diagnostics	ITGDF	IDX AU	Lyanne Harrison
	Jinxin Fertility	JXFGF	1951 HK	Ethan Cui
	Jinyu Bio-Tech	XMTDF	600201 CH	David Li
	Joynn Lab	XQTSF	6127 HK	David Li
	Kangji Medical	KMHLF	9997 HK	David Li
	Medley	XEQNF	4480 JP	Ritsuo Watanabe
	MicroPort	MCRPF	853 HK	Sandra Sun
	Mindray	XDVVF	300760 CH	Sandra Sun
	Nanosonics Limited	NNCSF	NAN AU	Lyanne Harrison
	Olympus Corp.	OCPNF	7733 JP	Ritsuo Watanabe
	Ovctek	XOCKF	300595 CH	David Li
	Pharmaron	PHBBF	3759 HK	David Li
	Polynovo	CALZF	PNV AU	Lyanne Harrison
	Praram 9 Hospital	XPNHF	PR9 TB	Charti Phrawphraikul
	ResMed Inc	RSMDF	RMD AU	Lyanne Harrison
	ResMed Inc.	RMD	RMD US	Lyanne Harrison
	Sawai Group Holdings	SWGHF	4887 JP	Ritsuo Watanabe
	Shionogi	SGIOF	4507 JP	Koichi Mamegano
	Shionogi	SGIOY	SGIOY US	Koichi Mamegano
	Sino Biopharm	SBMFF	1177 HK	David Li
	SMS	SMSZF	2175 JP	Ritsuo Watanabe
	Sonic Healthcare Limited	SKHCF	SHL AU	Lyanne Harrison
	Sosei	SOLTF	4565 JP	Koichi Mamegano

**APR - Healthcare Coverage Cluster**

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Takeda Pharm.	TKPHF	4502 JP	Koichi Mamegano
	Takeda Pharm.	TAK	TAK US	Koichi Mamegano
	Terumo	TRUMF	4543 JP	Ritsuo Watanabe
	TigerMed	HTMDF	3347 HK	David Li
	TRYT	XHXTF	9164 JP	Ritsuo Watanabe
	Wuxi Apptec	WUXIF	2359 HK	David Li
	Yifeng Pharmacy	XYHCF	603939 CH	Ethan Cui
	Yunnan Baiyao	YBAIF	000538 CH	Sandra Sun
	Zai Lab	ZLAB	ZLAB US	David Li
	Zai Lab	XCDZF	9688 HK	David Li
	Zhifei	XCHOF	300122 CH	David Li

**NEUTRAL**

	Ansell Limited	ANSLF	ANN AU	Lianne Harrison
	Astellas Pharma	ALPMF	4503 JP	Koichi Mamegano
	Astellas Pharma	ALPMY	ALPMY US	Koichi Mamegano
	Beigene	XBETF	6160 HK	David Li
	Beigene	BGNE	BGNE US	David Li
	JMDC	JMDCF	4483 JP	Ritsuo Watanabe
	Kyowa Kirin	KYKOF	4151 JP	Koichi Mamegano
	Max Healthcare	XMHLF	MAXHEALT IN	Neha Manpuria
	PHC Holdings	PHCCF	6523 JP	Ritsuo Watanabe
	Pien Tze Huang	XUVHF	600436 CH	Sandra Sun
	Ramsay Health Care Limited	RMSYF	RHC AU	Lianne Harrison
	Sigma Healthcare Limited	SIGGF	SIG AU	Lianne Harrison
	Sun Pharma	XPUCF	SUNP IN	Neha Manpuria
	Topchoice Medical	XZDXF	600763 CH	Ethan Cui
	Torrent Pharma	TOPHF	TRP IN	Neha Manpuria
	WuXi Biologics	WXIBF	2269 HK	David Li
	Zydus Lifesciences	XMQLF	ZYDUSLIF IN	Neha Manpuria

**UNDERPERFORM**

	Ain Holdings	AINPF	9627 JP	Ritsuo Watanabe
	Alkem	XAMLF	ALKEM IN	Neha Manpuria
	Asymchem Laboratories	XALPF	002821 CH	David Li
	Baiyunshan	XOUFF	600332 CH	Sandra Sun
	Beijing Wantai Biological Pharmacy	XBHIF	603392 CH	David Li
	Cipla	XCLAF	CIPLA IN	Neha Manpuria
	Cochlear Limited	CHEOF	COH AU	Lianne Harrison
	CSPC Pharmaceutical	CHJTF	1093 HK	Ethan Cui
	Divis Laboratories	XXQPF	DIV IN	Neha Manpuria
	Hansoh	HNSPF	3692 HK	David Li
	Hengrui Medicine	XMOKF	600276 CH	David Li
	Joynn Lab	JOLCF	603127 CH	David Li
	Lupin	XEFSF	LPC IN	Neha Manpuria
	M3	MTHRF	2413 JP	Ritsuo Watanabe
	Mankind Pharma	XDXZF	MANKIND IN	Neha Manpuria
	Medipal Holdings	MEPDF	7459 JP	Ritsuo Watanabe
	Ono Pharm.	OPHLF	4528 JP	Koichi Mamegano
	Otsuka HD	OTSKF	4578 JP	Koichi Mamegano
	Otsuka HD	OTSKY	OTSKY US	Koichi Mamegano
	Pharmaron	XLYGF	300759 CH	David Li
	Shanghai United Imaging	XCAOF	688271 CH	Sandra Sun
	Sinopharm	SHTDF	1099 HK	David Li
	Sysmex	SSMXF	6869 JP	Ritsuo Watanabe
	TigerMed	XHTHF	300347 CH	David Li
	Wuxi Apptec	XLUHF	603259 CH	David Li

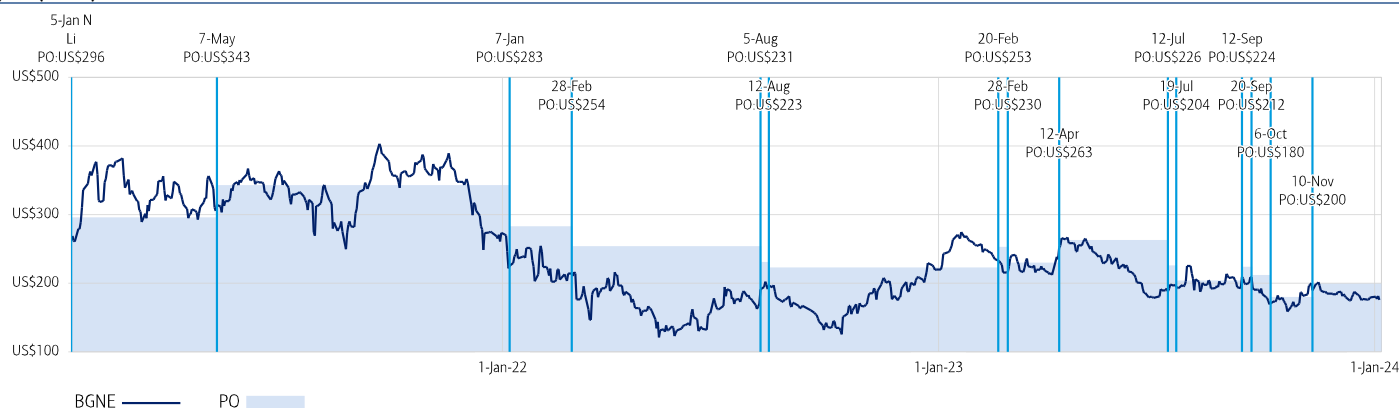
**RVW**

	IHH Healthcare Berhad	IHHHF	IHH MK	Paul Dewberry
	IHH Healthcare Bhd	XFAHF	IHH SP	Paul Dewberry

# Disclosures

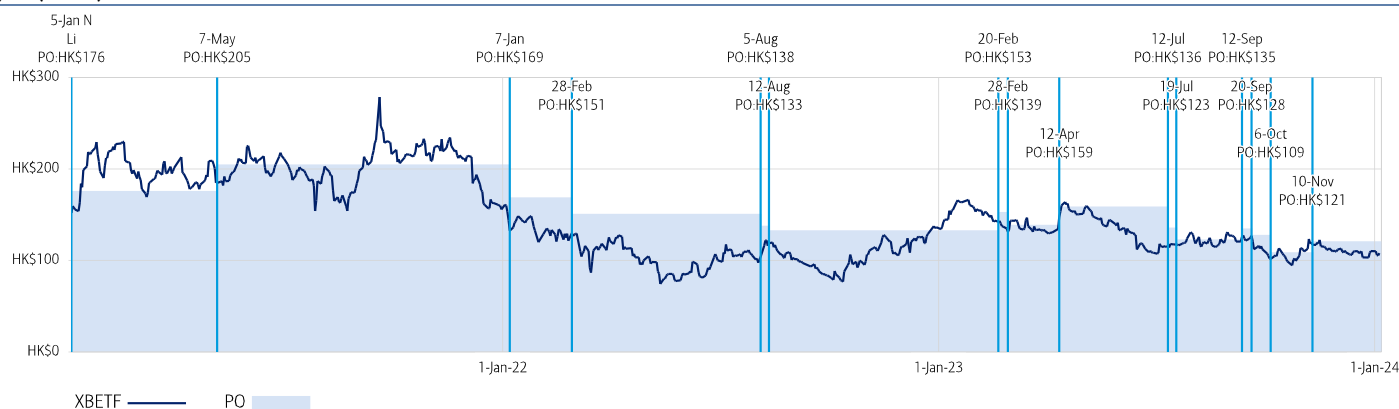
## Important Disclosures

### Beigene (BGNE) Price Chart



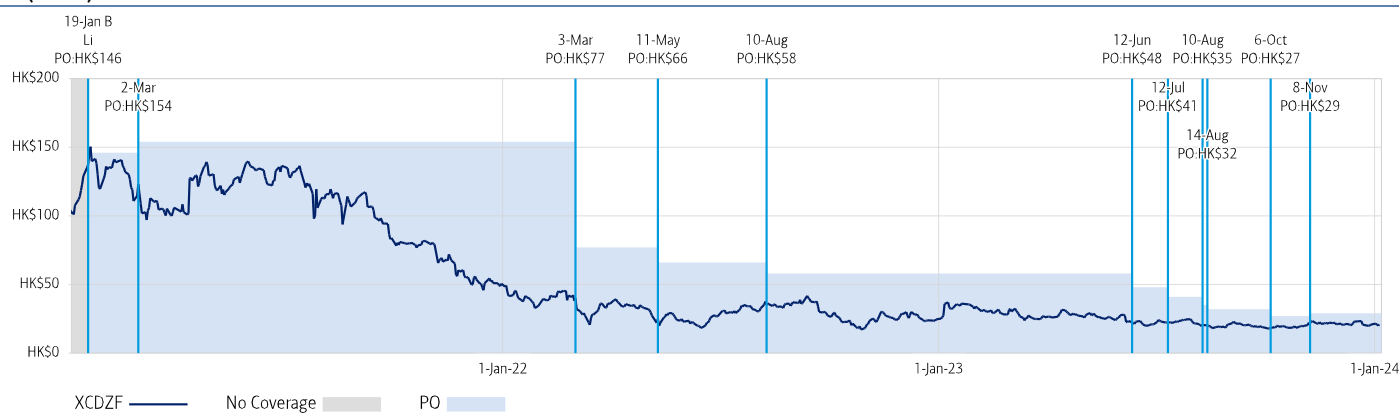
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### Beigene (XBET) Price Chart

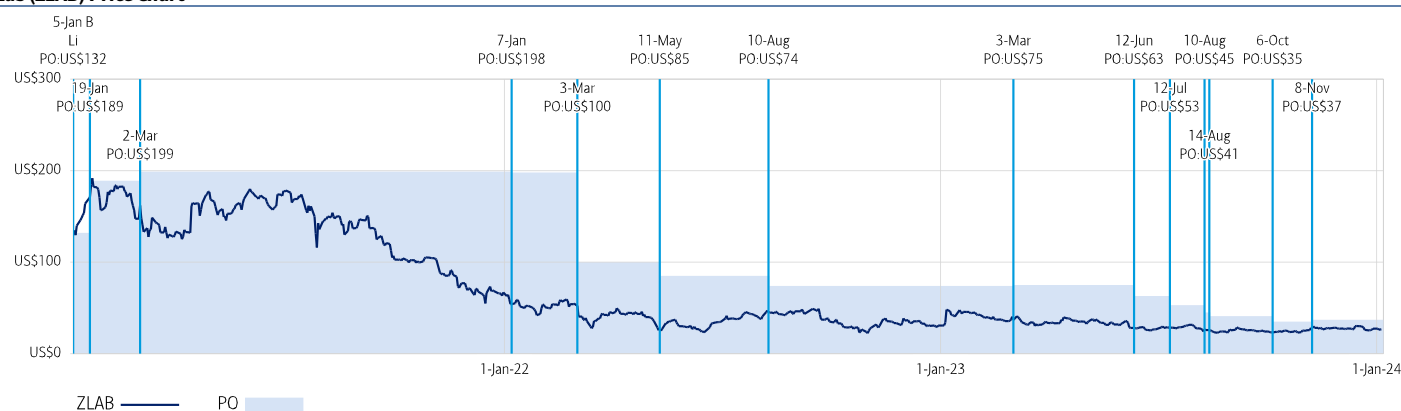


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### Zai Lab (XCDZF) Price Chart



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**Zai Lab (ZLAB) Price Chart**

B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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**Equity Investment Rating Distribution: Health Care Group (as of 31 Dec 2023)**

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	234	60.94%	Buy	115	49.15%
Hold	80	20.83%	Hold	36	45.00%
Sell	70	18.23%	Sell	29	41.43%

**Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)**

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

<sup>R1</sup> Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster <sup>R2</sup>
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

<sup>R2</sup> Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: Beigene.

BofAS or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: Beigene, Zai Lab.

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sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

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