BioPlan associates, inc.

DIRECTORY:

Top 60 Distributors of Bioprocessing Supplies in China

Opportunities for Global Suppliers to Find Local Distributors in China

JUNE 2020

DIRECTORY:
Top 60 Distributors of Bioprocessing Supplies in China

Opportunities for Global Suppliers to Find Local Distributors in China

June 2020

BioPlan Associates, Inc.
2275 Research Blvd, Suite 500
Rockville, MD 20850 USA
301.921.5979
www.bioplanassociates.com

Directory: Top 60 Distributors of Bioprocessing Supplies in China

Opportunities for Global Suppliers to Find Local Distributors in China

June 2020

BioPlan Associates, Inc.
2275 Research Blvd, Suite 500
Rockville, MD 20850 USA
301.921.5979
www.bioplanassociates.com

Managing Editors: Leo Yang and Vicky Xia
Senior Contributor and Reviewer: Ronald A. Rader
Layout and Cover Design: ES Design

ISBN 978-1-934106-38-9

About BioPlan Associates, Inc.

BioPlan Associates, Inc. is a biotechnology and life sciences market analysis, research, and publishing organization. We have managed biotechnology, biopharmaceutical, and life sciences research projects for companies of all sizes for over 30 years. Our extensive market analysis, research and management project experience covers biotechnology and biopharmaceutical manufacturing; vaccines and other biopharmaceuticals development; contract research services; biotechnology supply, and testing and R&D laboratory activities.

We prepare custom studies, and our publications provide public information our clients require to make informed strategic decisions, define objectives, and identify customer needs. With market and strategic information, our clients and publication readers are better able to make informed, market-based decisions because they understand the trends and needs in high technology life sciences industries.

BioPlan Associates, Inc. has researched global growth opportunities in the biopharma industry since 1989, and we have researched China market segments since 2004. Our work includes publications such as our peer reviewed studies, *2nd Ed. Advances in Biopharmaceutical Technology in China*, our China biopharma facilities and services directories, distributor reports, and contract research analyses. BioPlan's staff in China have decades experience in providing quantitative and qualitative research projects, and strategic opportunities analysis. For further information, please contact us.

BioPlan Associates, Inc.
2275 Research Blvd., Suite 500
Rockville, MD 20850 USA
www.bioplanassociates.com
Tel: 301-921-5979

Preface

BioPlan Associates' report on the China Distributor industry covers major distributors of bioprocessing supplies and equipment in the Peoples Republic of China (PRC). Distributor information includes company ownership, background, management, facility capacity and history.

The Directory is based on in-depth research, using public secondary and primary information research. This on-going project is regularly updated, and is intended to provide in-depth information and insights into the rapidly growing and changing Chinese biologics supplies industry.

As the Chinese biopharmaceutical industry continues to expand, both in technical capabilities and commercial presence, the distribution channels will also mature and expand. The information in this directory will, necessarily, become outdated. As such, we have China-based researchers keeping it up-to-date. However, our readers' input will be invaluable in that regard. If you have comments or corrections, please forward them to us.

The information on companies is based on information publicly available. Factors in assessing each distributor include aspects such as length of time in business, number of employees, number of companies represented, etc. Because the Chinese biopharmaceutical industry is in a growth phase, some of the organizations profiled are just emerging as industry participants. These companies are included because, based on their human resources, their products, internal expertise, or their financial capabilities, they have the potential to enter this market as a distributor.

We wish to acknowledge the contributions of many individuals in China, and around the world, who have provided information, reviewed, and evaluated the content of this directory. Without their support, this project would not have been possible.

Exchange Rate: 1 dollar = 7 RMB, 1 dollar = 7.75 HK$ (May 2020)

Leo Yang
Director, Research
BioPlan Associates, Inc.
June 2020

Directory: Top 60 Distributors of Bioprocessing Supplies in China

Opportunities for Global Suppliers to Find Local Distributors in China

Contents

Figures/Tables

1 Market Demands for High Quality Equipment & Single-use Systems

Pipeline Growth in China

The past decade has witnessed significant changes in China's biopharmaceutical industry landscape as China has grown into the world's second largest pharmaceuticals market, driven by economic growth, urbanization, its large population that is rapidly growing older as well as greater access to the national healthcare insurance program. According to the healthcare information company IQVIA, China was the world's second-largest national pharmaceutical market in 2017 valued at USD $122.6 billion and also is the biggest emerging market for pharmaceuticals with growth tipped to reach USD $145 billion to USD $175 billion by 2022 as healthcare total expenditures keep on growing at double digit rates annually[2].Alongside robust growth of the pharmaceutical market as a whole, the structure of China's pharmaceutical consumption keeps on trending towards a greater market share of biological therapeutics, especially those monoclonal antibody (mAb) therapeutics, with the current wave of biosimilar/biogeneric mAb development by domestic developers as well as mAb therapeutics from multinational companies entering China.

The country launched its first made-in-China mAb therapeutics only in 2005 and currently is still an underdeveloped market for biopharmaceuticals. The domestic market share for biopharmaceuticals (out of all pharmaceuticals), and especially that of mAb biologicals, will increase in China as multiple sales statistics clearly show the biopharmaceutical market growing at a higher rate than that of the pharmaceutical industry as a whole, with mAb therapeutics specifically growing faster than the biopharmaceutical market, respectively. Biopharmaceuticals though currently compose 25% - 30% of the total global pharmaceuticals market, but only have a China market share of 11.9% in 2015 with this projected to reach 18.6% in 2020[4]. The China biopharmaceutical markets will grow from under USD $10 billion in 2012 to a projected USD $50 billion in 2021 with a CAGR of 16%. In 2014, the market size of mAb therapeutics in China reached CNY 5.03 billion (USD $729 million).

China is experiencing a second wave of biologics development composed of mostly mAb therapeutics. In 1990s, there was a wave of biological therapeutics development of recombinant proteins, such as insulin, EPO, TPO, interleukins, etc., which are produced from bacteria-based systems, but the bubble busted due to the small market size back then and too much homogeneous competition.

Regulatory authorities in China can give dozens of BLAs to such biogenerics, but nowadays usually only a few domestic developers are still making and selling them in a commercially relevant way (OPM, Celgene). In 2005, CITIC Guojian (now part of 3S Guojian), launched the first 'made-in-China' mAb therapeutic, Yisaipu, which is a biogeneric version of Amgen's Enbrel (etanercept), a microbial-expressed mAb fragment product. Yisaipu quickly becomes a commercial success in China, generating over 1 billion RMB (USD $140 million) in revenue in 2018 and combined revenue in the billions of RMB since its launch. These successes lead to stronger developer companies having interest in mAb therapeutics and the 2nd wave of biologics development. Since 2011, over 100 companies have applied for INDs for their mAb projects (BioPlan Internal Study) and quite a few domestic developers have launched their mAbs in the domestic and/or lesser- and non-regulated international markets.

About 300 mAb therapeutics are under clinical development in China, mostly biogenerics (sometimes actual biosimilar versions), with CD20, HER2, EGFR, VEGF, TNF-alpha as the most common targets. The majority of developers started their mAb development within the recent 5 years or so, and regulatory authorities in China have just started giving green lights to this wave of mAb projects. The year of 2019 witnessed three PD-1 mAb therapeutics made by domestic companies being approved. But the peak of mab development, manufacturing and marketing activity has certainly not arrived yet as close to 20 PD-1 mAbs are currently under development by domestic companies. Table 1 compares the size of the follow-on products (biosimilars, biogenerics and biobetters) pipelines by country headquarters location of developer companies (with multiple companies in different countries often involved).

BioPlan's research has shown a consensus among domestic bioprocessing industry insiders that in the next 5 years China will see at least 10 mAb therapeutics from domestic companies getting BLAs, with the more optimistic projection at over 50 or so. As more biological therapeutics getting approvals and enter the market, their penetration rate will certainly be on the rise, However, at its current stage, China only occupies ~10% of the global biologics market while China's pharmaceutical market is 17.5% of the global pharmaceutical market. Analysts have reason to believe that China's biologics market share has the potential to grow to a level that is similar to its share of the total pharmaceutical market.

Table 1 Number of Follow-on Biopharmaceuticals in the Pipeline by Countries Where Involved Companies Have Their Headquarters*

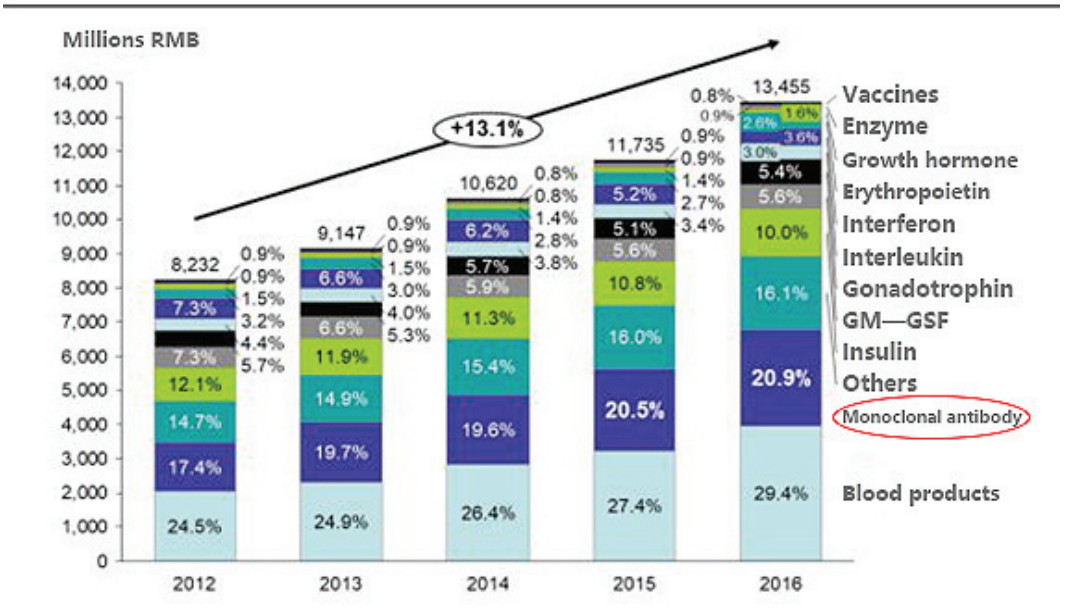
Region	Companies Involved
Asia	869
USA	592
Europe	587
China (PRC)	310
India	244
Switzerland	153
Germany	138
S. Korea	131
UK	96
Japan	95
France	77
Brazil	69
Taiwan (ROC)	44
Brazil	34
Iran	30
Australia	25
Russia	23
Egypt	15
Mexico	15
Netherlands	10
Vietnam	8

Source: Biosimilars/Biobetters Pipeline Directory, BioPlan Associates, www.biosimilarspipeline.com).

The biologics contract manufacturing organization (CMO) industry in China is primarily a by-product of the robustly growing mAb therapeutics industry, and the latter's strong growth provides abundant business opportunities. Meanwhile, there is also a trend of CMO business moving from industrialized countries to emerging markets; for example, the share of US and EU in the CMO sector has dropped from

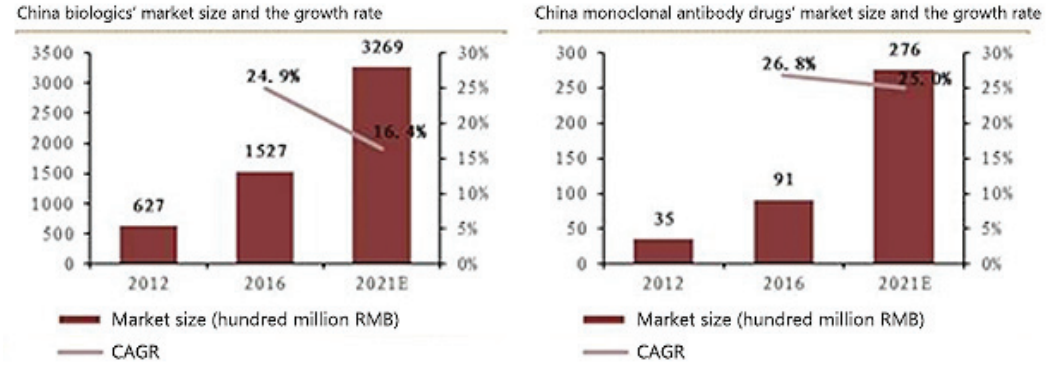
75% in 2010 to 67% in 2018 while the combined share of China and India has risen from 10% to 15%, with China alone having ~8% of the market.

Fig 1: Growth of China Biologics and Percentages of Each Category



SOURCE: Sealand Securities

Fig 2: CAGR and Market Size of the China Biologics in General Biopharmaceuticals and Monoclonal Antibodies



SOURCE: Southwest Securities

According to the China state medical insurance administration, 14 biologics drugs were included in the medical insurance list in 2017, which accounted for 32 of the total 44 medical insurance listed drugs. Among the listed 14 biologics drugs, 8 were monoclonal antibodies which accounted for 57%.

The national healthcare insurance program budget was 1,760 billion RMB (USD $2.5 billion) in 2018, which is only ~2% of China's GDP, but covers ~80% of China's 1.3 billion population. This is expected to grow at a rate not significantly higher than the projected annual GDP growth rate (5%-6%) in case healthcare costs become a burden that erodes economic growth. However, in recent years, China's healthcare costs and the national healthcare insurance has been growing at an annual rate significantly over 10% as it starts from a low baseline and there is strong demand from the Chinese public to let the insurance reimburse more pharmaceuticals, especially the newer, more expensive ones (such as mAbs). For example, in 2018 the national healthcare insurance program had a total revenue of 2,138 billion RMB (USD $19.4 billion) which is 19.3% higher than that in 2017 and comprised 2.4% of China's GDP in 2018. There has also been concern regarding over-drafting of the national healthcare insurance in recent years, and the government wants to control annual growth of healthcare costs at ~10%.

The Chinese government wants to adopt a policy of value-oriented strategic procurement to fulfill its objective to control annual growth rate of healthcare costs at ~10%, which means de-listing of safe, ineffective drugs and incorporating new pharmaceuticals with clear efficacy at a price discount. Usually when a new pharmaceutical gets listed into the National Reimbursement Drug List its price would have to get reduced significantly. China holds annual negotiations with drug makers on the price of drugs which they want to get listed into the NRDL, which provides reimbursement of the drugs by the National Healthcare Insurance Program. For drugs not included in the list, patients have to pay out of their pockets. For example, when Innovent's PD-1 mAb entered into NRDL, its price was cut by 64%. In 2017, the Ministry of Human Resources and Social Security organized negotiations on 45 patented pharmaceuticals selected by an expert committee and 36 of them entered the NRDL as a result, with average price reduction of 44%. The government's intention to control healthcare costs growth at around ~10% certainly means the NRDL will not expand drastically or rapidly. As the principle of strategic procurement is intended to benefit patients as well as bring up a strong pharmaceutical industry in China, it is also expected that the national healthcare insurance will play a pivotal role in encouraging innovation and R&D in China's biopharmaceutical industry by favoring relatively innovative domestic companies, such as Innovent Bio. Though its PD-1 mAb is basically a fast follow-on version, it is considered to be an innovative therapeutic by Chinese standards.

Regarding the geographic distribution of China biologics manufacturing, the Yangtze River Delta, Zhujiang River Delta, and Bohai Sea Rim are the three main industrial clusters. The middle provinces of Henan and Hubei, and the southwest provinces of Sichuan and Chongqing are also establishing biologics manufacturing bases. More specifically, Shandong Province accounts for about 31% of the total market share of China biologics manufacturing, Jiangsu Province accounts for about

13%, and Henan Province accounts for about 9%. However, as to the monoclonal antibodies manufacturing and R&D, Shanghai, Beijing, and Guangdong host the most innovative and competitive companies in China.

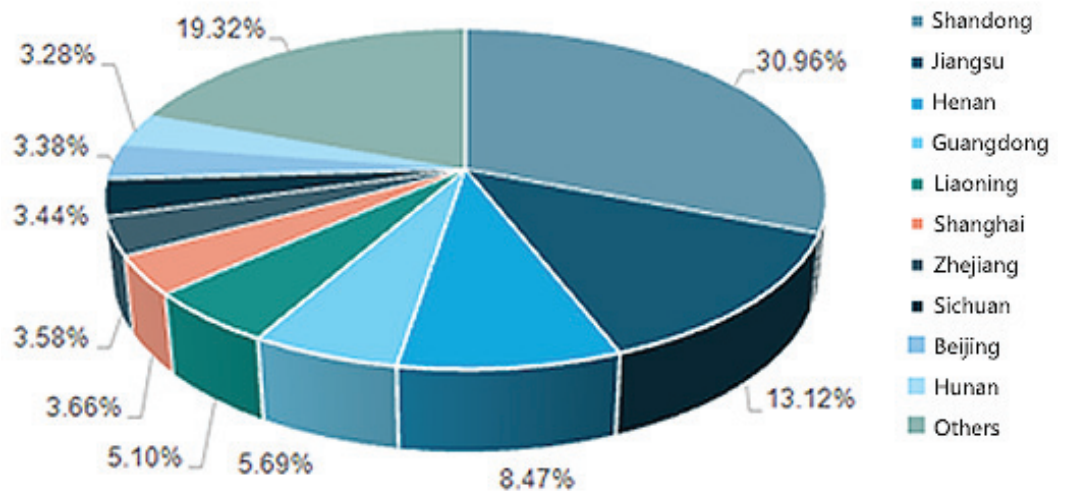
Support of the local governments is one of the key impetuses supporting the biopharmaceutical manufacturing investment and development in China. The support includes government subsidies, tax reductions, clinical resources, favorable land-use policies, etc. A lot of Chinese local governments also established biopharmaceutical industrial parks to attract investments of biopharmaceutical companies from China and abroad.

It is no longer the case that risk-averse and cash-strapped Chinese companies are reluctant to invest in biologics R&D, while at the same time Chinese venture capital companies are less hesitant to make investments in biotech companies focused on innovative product development. As a result, the financing and innovation capability of domestic companies has grown significantly in recent years.

Monoclonal antibody therapeutics is the hotspot for biopharmaceutical investments in China. According to China Pharmaceutical Enterprises Promotion (CPEP), from 2010 to August of 2018, there were in total 108 announced investments in monoclonal antibody therapeutics. From January to August 2018, there were in total 30 investments in monoclonal antibody therapeutics involving 17.98 billion RMB (USD $2.5 billion), which accounted for 87.8% of the total investment in the biopharmaceutical sector in China. In 2019, the total investment in biopharmaceuticals in China was RMB 7.55 billion (USD $4.96 billon), 66% of which was invested in the monoclonal antibody therapeutics, according to Huoshichuangzao.

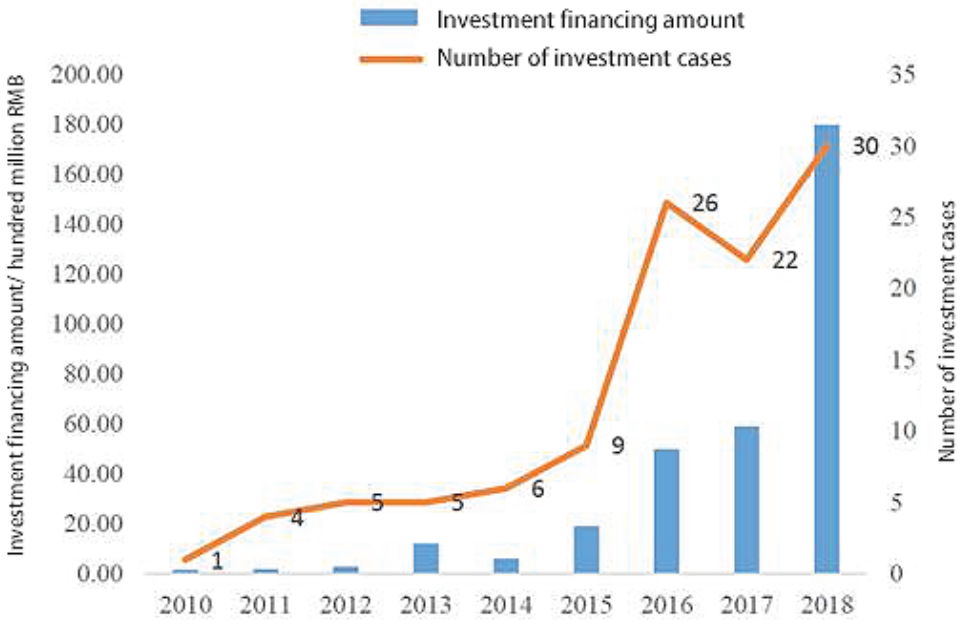
Biologics manufacturing is geographically distributed unevenly in China. From Fig 3 we can see that Shandong, Jiangsu and Henan contributed over 50% of bioproduction in China. These provinces are also the most important regions for bioprocessing vendors.

Fig 3: China Biologics Manufacturing Geographic Distribution by Chinese Province/Region



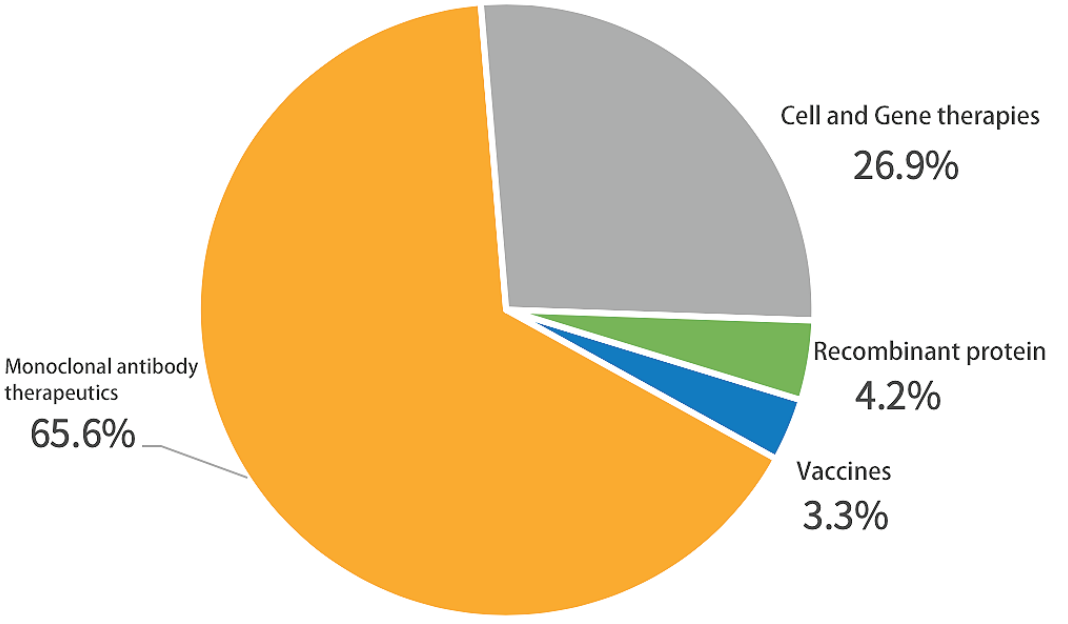
SOURCE: CHYXX.com

Fig 4: Investment Financing Amount and Number of Investment Cases from 2010- 2018



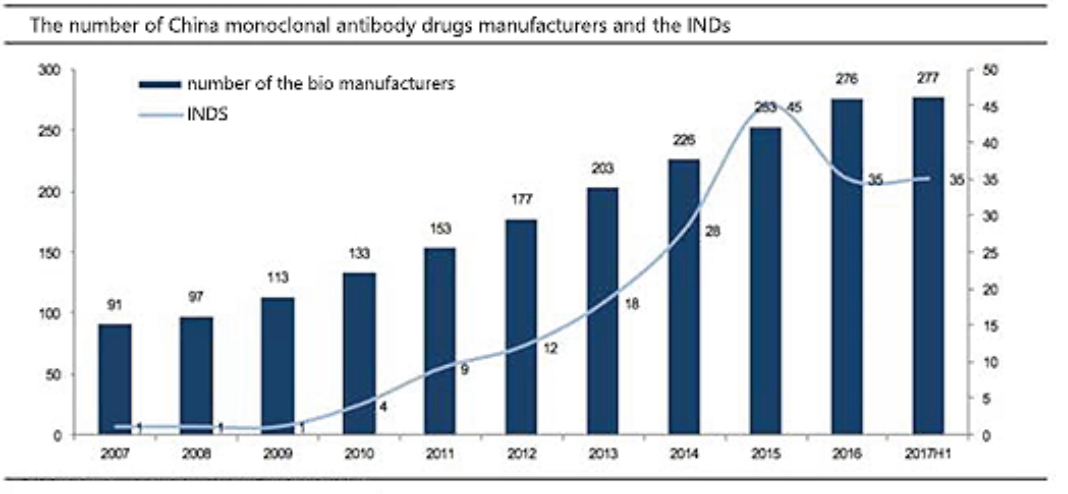
SOURCE:CPEP

Fig 5: Ratio of Biopharmaceutical Investment for Each Sector (2019)



Source: Huoshichuangzao

Fig 6: China's Monoclonal Antibody Manufacturers and Number of INDs/year



Source: Center for Drug Evaluation, National Medical Products Administration (NMPA)

China's Local Vendors of Biomanufacturing Equipment

China's local vendors of biomanufacturing equipment now are still positioned in a low-end market compared with the vendors based in the US, EU, and Japan.

According to SUN Jian, former research scientist at Institute Pasteur of Shanghai, Chinese Academy of Sciences, there are some major challenges and problems the China's local vendors are facing:

1. China's local biomanufacturing equipment and instruments are inferior in the user experience due to the lack of technological accumulation of industrial design expertise. They are still competing on prices and have less reputation in the bioprocessing market. Life science research can be quite monotonous work, so good design of equipment and instruments, and user-friendly interfaces are quite important for the end-users and are also important considerations in the equipment purchasing process.
2. The operational interfaces of China's local biomanufacturing equipment are not as good as the imported equipment. Most of the core R&D and management staff of Chinese biopharmaceutical and life sciences companies are returnees from Western countries and they are quite familiar and comfortable with the imported equipment of US, EU, and Japan. Familiarity is one of the reasons why they like to purchase imported equipment.
3. Imported equipment have involved and are matched with their reagents and consumables, most of which have also been imported from the US, EU, and Japan, for a long time. It is risky to change supply sources to China locally-made equipment if the reagents and consumables are not locally produced and matched with the equipment.
4. The patent protection of Western equipment manufacturers is another barrier for China's local biomanufacturing equipment to enter into higher-end foreign and sometimes domestic markets. The innovation and upgrading of biomanufacturing equipment require a lot of cooperation and collaboration between the academic organizations and industrial companies, and various departments and sectors as well, which is a weakness in China for the time being.

Biopharmaceuticals is a capital-intensive industry that involves a lot of investment in facility construction and equipment procurement. For example, the total investment of one manufacturing line for one monoclonal antibody would be about USD $100 million in China. For the time being, the Chinese local biopharmaceutical companies are reluctant to use locally produced bioprocessing equipment because there are risks of failure if the local vendors cannot provide proven successful case

For Ordering Information on the Full Report

Contact BioPlan Associates, Inc.

301-921-5979

www.bioplanassociates.com/china-biopharma-distributors/