



Feature on AABI-Awarded Enterprises

**BaiO Tech
2019**

AABI Secretariat
July 2019

INTRODUCTION

BaiO Technology, established in 2000, is a pioneering high-tech enterprise in China which focuses on gene diagnostic products. Based on its innovative intellectual property rights, this company has established a "**chromogenic gene chip core technology system**" which realizes high-throughput, fully automated manufacture, as well as multi-gene and multi-site detection. With a production base meeting Good Manufacturing Practice (GMP) standard and perfect quality management system, the company has now covered the whole industrial chain which integrates R&D, manufacture, equipment and marketing.

BaiO
百傲科技

Dr. ZHU Bin, the general manager of BaiO Technology is awarded with **2018 AABI Torch Best Entrepreneur Award** for his outstanding performance in entrepreneurship and innovation.



Dr. ZHU Bin

@ 2018 AABI General Assembly
& Awards Ceremony

BUSINESS FIELD

- Manufacture, Development and Sales of Gene Diagnostic Products for Individualized Medicines.
- Supply of Genetic Diagnostic Products on an OEM basis.
- Commissioned Development of Genetic Diagnostic Products.

INNOVATION AND ADVANTAGE✧ ***Cutting-edge Technology*****R
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The main products of BaiO are chromogenic gene chip and gene testing kit. With 17 independent intellectual property rights, BaiO Tech now allows for the detection of one chip at 1,500 sites simultaneously. In addition, the unique technology of BaiO makes its product highly competitive for its low cost, streamlined operation, reliable detection result, and high throughput meeting no less than 3000 times detection per month.



Concerning about the application, the products of BaiO Tech are purposed to provide solutions for the clinical problem of individualized medicine. By involving BaiO's gene testing technology, doctors are empowered to decide the preferable types and doses of drugs to be given to individual patient in accord with their genotypes. It is expected to help achieve better therapeutic effect and avoid side effects. Till now, personalized drug guidance supported by gene testing technology has been extensively applied in fields such as drug metabolism, anticoagulation and antithrombotic therapy, lipid metabolism, antidepressant, neonatal malformation prevention, habitual abortion, and childhood leukemia.

✧ **Independent Laboratory**

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The company has now set up four laboratories in Shanghai with the total area of over 3000 m², including

Reagent Development Laboratory

- with cell culture and testing equipment, PCR equipment, gene chip spotting equipment, gene chip testing equipment, etc.

Equipment Development Laboratory

- with equipment aging test, vibration test, electronic circuit test, temperature testing, optical testing, etc.



Open Laboratory

- with all equipment required for the development of genetic testing kits.

Quality Control Laboratory

- with sample library, environmental testing equipment, microbiological testing equipment, process water testing equipment, reagent product testing equipment, equipment product testing equipment and so on.

✧ **Active in Technology Innovation and Technology Transfer**

The company has cooperated with many Chinese universities and enterprises in technology transfer and technology cooperation. The success cases includes but not limited to Chinese Academy of Science (1 case), Fudan University (2 cases) and other IVD enterprises (3 cases).

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Manufacture

BaiO Tech takes the lead in realizing fully automated manufacture of gene testing chips in China through workshop transformation. The whole workshop area amounts to 7000 m², hence the transformation will be conducted step by step and is expected to finish before 2021.

About the Equipment

In order to streamline the production process and improve product quality, BaiO Tech upgrades its production equipment by innovatively introducing robot technology in developing spotting instrument BD-2.



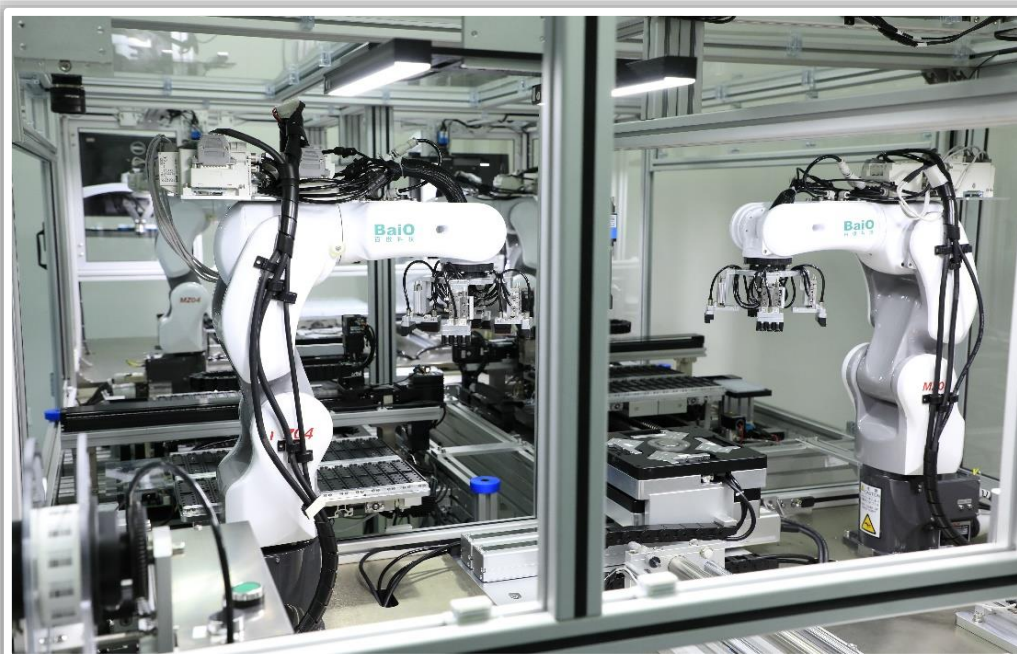
Spotting Instrument BD-2

Development Process:

- October 2016, the project on developing new equipment was initiated and

technical partner was decided.

- November 2017, equipment prototype was developed.
- March 2018, various performance tests were conducted and verifications of the results were completed.
- June 2018, the equipment was successful launched and put into production.



Automated Production Line

Outcomes:

- The project has applied for a total of 5 patents, including 3 invention patents and 2 utility model patents.
- The spotting instrument developed integrates labeling, collection, sampling and testing, realizing automation in the whole process of gene chip spotting. Besides, the technology involved in the instrument is topped in the high-volume intelligent manufacture of gene chips on an international level. Accordingly, not only the quality of gene chips are significantly improved, but also the productivity has increased **fivefold** after the new automated equipment is put into use.

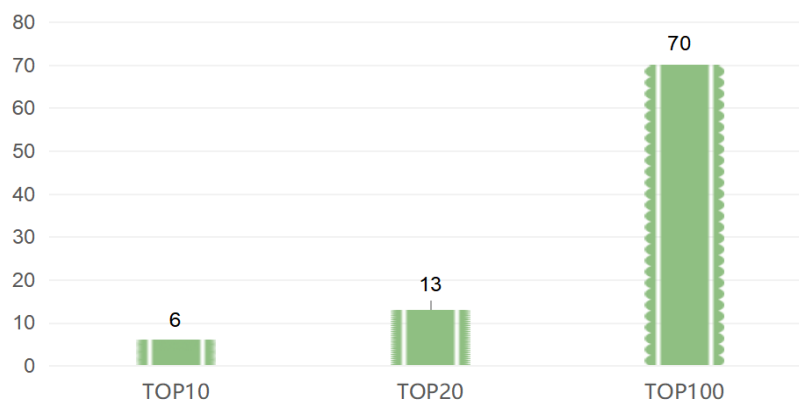
Market

✧ *Pioneer*

BaiO Tech is the first enterprise obtaining approval for the listing of genetic diagnosis products for individualized medicine in China.

✧ *Large Market Share & High-quality Customers*

Customers of BaiO Tech includes over 300 hospitals (mostly third-grade class-A hospitals) and other IVD enterprises. According to the 2018 Shanghai Top Hospitals List issued by Fudan University, BaiO's sales network now covers 6 hospitals in the top 10 hospitals, 13 in the top 20, and 70 in the top 100.



Number of Top Hospitals in cooperation with BaiO

In addition, the market of gene chip shows huge growth potential domestically and globally. According to BCC, the global gene chip market was 760 million US dollars in 2010. This market capacity is expected to rise to 18.4 billion US dollars in 2020. Until the end of 2018, the market size of biochips (including gene chips) in China is about 2.5-3 billion yuan, and this figure is expected to increase to at least 5 billion yuan in 2020.

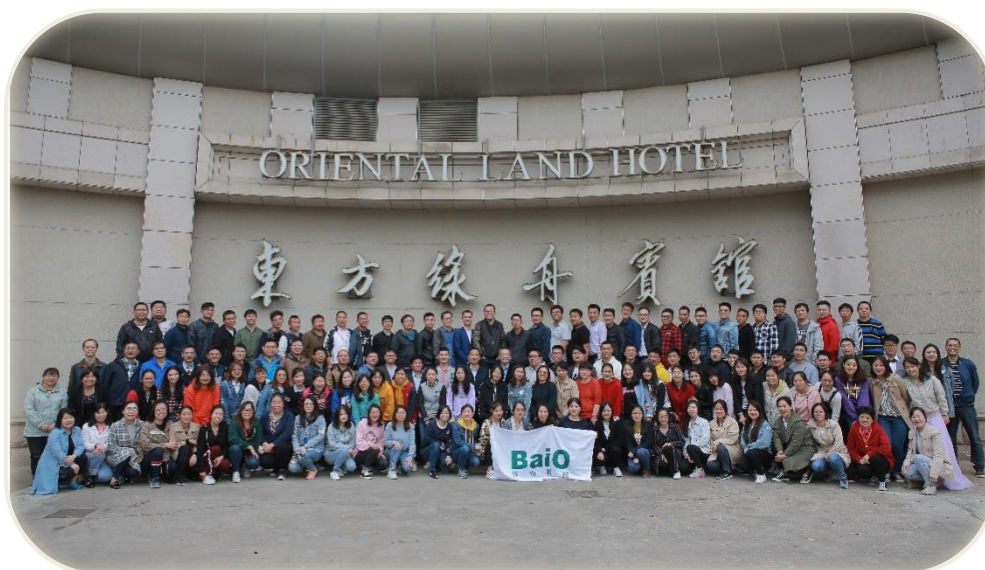
✧ *"Technology Sharing Platform"*

The concept of "Technology Sharing Platform" is proposed by Dr. ZHU Bin, the general manager of BaiO Tech since the establishment of the company. Dr. ZHU

believes that it is only through the concerted efforts of enterprises, institutions and scholars can the broad prospect of gene chip technology be fully realized. To this end, one important step is to cooperate in technology development. Therefore, BaiO Tech takes the lead in sharing its mature gene chip technology platform with organizations in related industry in the hope of boosting number and quality of gene chip products for the further development of gene technology sector.

In early 2019, a listed company in Beijing, who was deeply impressed by the concept of “Technology Sharing Platform” proactively reached BaiO Tech and purchased BaiO’s gene chip equipment for its own products development. Till April 2019, the installation, startup and commissioning of the equipment have been completed and the cooperation moved into the product development stage. Regarding the next-step cooperation, the company has expressed their interest to further work with BaiO Tech in product registration, certificate application, and even production and marketing as well.

In the near future, BaiO Tech also plans to establish public micro-chip laboratory in Beijing, Shanghai and Guangzhou to help the enterprises, institutions and individuals with R&D abilities and requirements in product development and technology commercialization.



BaiO Team