INDUSTRY OVERVIEW

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CHINA'S LIFE SCIENCE SEQUENCING SOLUTIONS MARKET

Overview

Life science sequencing is the use of genetic sequencing technologies to decode and analyze the precise order of nucleotides in gene, enabling clinicians and researchers to analyze the genetic information and unlock valuable insights for clinical diagnosis and life sciences research. Key technologies include next-generation sequencing (NGS), long-read sequencing, and single-cell sequencing, providing insights into complex biological systems at the molecular level. In clinical settings, life science sequencing solutions integrate test kits, sequencer and bioinformatics analysis software, streamlining workflows from sample preparation to data analysis and enabling clinicians to provide tailored treatment plans. In research settings, advanced genetic sequencing technologies, combined with professional support, laboratory equipment and bioinformatics analysis, address complex sequencing demands, empowering researchers to gain deep insights in genomic structures of various species.

Industry Value Chain of China's Life Science Sequencing Solutions Market

The upstream sector of the life science sequencing solutions includes suppliers of reagents, chemical raw materials, genetic sequencers and other sequencing equipment, which are essential for manufacturing genetic testing products and supporting complex sequencing tasks.

The midstream sector consists of life science sequencing solution providers that offer test kits, sequencing equipment, bioinformatics software and analytical services for clinical diagnostics and scientific research.

The downstream sector includes end users. In the clinical settings, end users are primarily medical institutions, such as hospitals and independent clinical laboratories (ICLs), which use sequencing solutions for diagnosis, disease prevention and treatment, and their own R&D of genetic testing products. For scientific research, end users include research and academic institutions, government and public health organizations, as well as agricultural industries, which rely on sequencing solutions to address complex genetic analysis needs.

Market Size of Life Science Sequencing Solutions in China

China's life science sequencing solutions market can be further divided into clinical sequencing sector that encompasses reproductive health sequencing solutions market, oncology sequencing and pathogen detection, as well as scientific research sequencing sector. According to CIC, the market size of life science sequencing solutions increased from RMB13.2 billion to RMB28.5 billion from 2018 to 2024, in terms of end user price, representing a CAGR of 13.7%. The market size is expected to grow at a CAGR of 18.2%, reaching RMB128.7 billion by 2033.

Growth Drivers of China's Life Science Sequencing Solutions Market

China's life science sequencing solutions market is driven by rising public awareness and broader clinical integration of genetic sequencing, supported by technological advances and cost reductions that expand commercialization and adoption in diagnostics, research and precision medicine. Strong policy backing, including the 14th Five Year Plan for the Development of the Bioeconomy and the 14th Five Year Plan and 2035 Long Range Objectives, reinforces genetic technology as a strategic priority and accelerates industry development. At the same time, increasing emphasis on genomics research and precision diagnostics, together with demand for faster, more accurate and cost effective sequencing, continues to drive product innovation and market expansion.

Future Trends of China's Life Science Sequencing Solutions Market

According to CIC, China's life science sequencing solutions market is characterized by rapid technological iteration, with higher throughput, faster speeds, greater automation and declining sequencing costs supporting broader downstream adoption. Laboratory automation is enhancing in-house testing efficiency by reducing manual errors and integrating data collection, analysis and management, while hospitals and ICLs continue upgrading automation capabilities. At the same time, rising public health awareness and expanding clinical applications are increasing demand for precision and customized solutions, with advanced bioinformatics capabilities becoming central to extracting value from large-scale sequencing data and supporting genomics, proteomics and personalized medicine.

CHINA'S REPRODUCTIVE HEALTH SEQUENCING SOLUTIONS MARKET

Overview

Birth defects affect 3% to 5% of live births in China, with genetic disorders accounting for 15% to 25% of these cases, primarily due to chromosomal abnormalities. As a result, promoting eugenics and preventing genetic diseases of fetuses have become national priority, as reflected in the *Decision on Optimizing Fertility Policies* (2021) and the *Plan for Enhancing Birth Defect Prevention Capacity* (2023–2027). Driven by the policy initiatives and the increasing public awareness of the importance of eugenics, medical institutions have a growing demand for convenient, accurate and efficient in-house reproductive health sequencing solutions to meet the needs of pregnant women at risk, enabling comprehensive genetic sequencing and analysis to assess fetal health, screening for genetic diseases and providing actionable risk evaluations. Among these methods, NIPT has been widely adopted by medical institutions in China, primarily due to its high accuracy and convenience.

The following table displays the overall comparison of all available reproductive health sequencing solutions. Major NMPA-approved NIPT kit providers comprise CapitalBio, BGI, Berry Genomics, the Company and others. There are three NMPA-approved CNV-seq kit providers in China, including BGI, Berry Genomics and the Company. NMPA-approved PGT kits providers primarily include Jabrehoo and Basecare. Other reproductive health sequencing solutions have not yet received NMPA approvals.

Overall comparison of all available reproductive health sequencing solutions

	NIPT	CNV-seq	Whole-Exome Sequencing (WES)	Whole Genome Sequencing (WGS)	Embryo implantation genetic testing (PGT-A, PGT-M, PGT-SR)	Carrier NGS screening
Target population	Generally applicable to pregnant women who are 12 weeks pregnant or above, especially those who have the following conditions: ① Abnormal results in serological screening ② Pregnant women are 35 years old or above	① Pregnant women with adverse pregnancy or childbirth histories, such as multiple spontaneous abortions, birth of children with unexplained birth defects, etc. ② Pregnant women with high-risk results from serological screening and NIPT	① Couples with a family history of single gene inheritance diseases ② Pregnant women with obvious abnormalities found in fetal imaging examinations	① Pregnant women who are suspected of having a complex, multi-system disease or a rare disease in their fetus ② Couples with recurrent spontaneous abortions, stillbirths, or having given birth to children with unexplained birth defects	① Women over 35 years old with recurrent miscarriage ② Either of the couple has chromosomal abnormalities and require embryo implantation	Couples preparing for pregnancy or couples in early pregnancy
Targeted abnormalities to be detected	21-trisomy, 18-trisomy and 13-trisomy syndromes	Chromosomal microdeletions/ duplications, aneuploidy, mosaicism	Abnormal chromosome number, copy number variation (CNV), single-base variation (SNV), and insertion/ deletion variant of small fragments (indel)	Genome-wide SNV, InDel, CNV, SV, and mitochondrial variants	— PGT-A: embryonic aneuploidy — PGT-M: monogenic disorders (e.g., thalassemia, SMA) — PGT-SR: chromosomal structural abnormalities (translocation, inversion)	Autosomal recessive disorders, X-linked genetic disorders, and autosomal dominant disorders

	NIPT	CNV-seq	Whole-Exome Sequencing (WES)	Whole Genome Sequencing (WGS)	Embryo implantation genetic testing (PGT-A, PGT-M, PGT-SR)	Carrier NGS screening
Features and methods	Non-invasive, high-throughput sequencing of fetal cell-free DNA based on maternal blood	Low-depth whole-genome sequencing to detect submicroscopic variants missed by traditional karyotyping	Whole exome sequencing, and sometimes combined with CNV-seq to improve the diagnostic rate	Whole genome sequencing to detect non-coding region variants, large data volume, and requiring high-performance bioinformatics analysis	Preimplantation genetic testing to screen healthy embryos to improve success rate of implantation	Panel sequencing of target genes, sometimes combined with third-generation sequencing to identify complex variants
Average market price[(1)]	RMB1,000–2,000	RMB1,000–3,000	RMB3,000–6,000	RMB5,000–10,000	~RMB100,000	RMB2,000–5,000
Penetration rate in China	~50% of all the pregnant women	<5% of all the pregnant women	<5% of all the couples preparing for pregnancy	<5% of all the couples preparing for pregnancy	N/A	N/A
Performance indicators	Sensitivity >99%, Specificity >99%, a false positive rate of <0.1% and a short detection period (3–7 days)	High resolution (<100kb)	Covering 20,000+ gene coding regions	High-depth, 30–100 × coverage	Sensitivity ~90% Specificity >70%	Sensitivity >95% Specificity >99%
Sample requirement	Peripheral blood of pregnant women	Amniotic fluid, chorion, umbilical cord blood, aborted tissue, peripheral blood	Genomic DNA samples, whole blood, tissue samples, etc.	Blood, tissue, amniotic fluid, etc.	Embryonic cells, blastocyst stage extra trophoblast cells	Peripheral blood, embryonic cells

Note:

(1) The average market prices for NIPT and CNV-seq kits in the table reflect the end use test takers' out-of-pocket expenditure for NIPT and CNV-seq services. As of the Latest Practicable Date, centralized procurement program for NIPT has only been implemented in Jiangsu Province. Therefore, the prices presented above represent the prevailing market price of NIPT services only, and do not take into account the effects of centralized procurement program.

Source: Literature search, CIC

Introduction to NIPT

Based on NGS technology, NIPT analyzes fetal cfDNA in maternal blood to assess the risk of fetal chromosomal abnormalities, in particular, trisomy 21 (Down syndrome), trisomy 18 (Edwards syndrome), and trisomy 13 (Patau syndrome).

Market Size of China's NIPT Market

According to the National Bureau of Statistics, the annual number of birth rate in China declined from 1.1% in 2018 to 0.6% in 2023 and rose to 0.7% in 2024. It is expected that in 2033, the birth rates in China would stabilize at 6.41 per 1,000 population. In the meantime, the number of NIPT performed in China increased from approximately 2.7 million cases in 2018 to approximately 5.6 million cases in 2024, representing a CAGR of 13.2%. During the same period, the penetration rate of NIPT among pregnant women in China has gradually increased from approximately 15.4% in 2018 to approximately 54.5% in 2024, illustrating significant growth while leaving substantial room for further market penetration.

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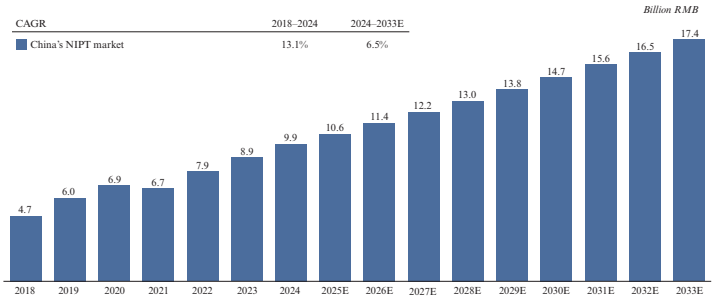
According to the National Health Commission in 2024, China's prenatal screening rate during pregnancy reached 91.3%, mainly using traditional serological Down's Syndrome screening. However, serologic screening has a detection rate of only 69% to 87%, compared to NIPT's superior detection rate of 99% and lower false positive rate. As a result, NIPT is expected to continue replacing serological screening as a preferred method for prenatal screening, supporting the increasing adoption of NIPT and increasing market size of China's NIPT market.

Although China's annual birth rate is declining, the reproductive health sequencing solutions market is expected to continuously grow, primarily driven by the enhanced NIPT penetration rate of pregnant women. With the demographic trend of prolonged pregnancy age, consistent government support for improving maternal and child health outcomes, sequencing technology advancements in testing accuracy and speed, as well as the increasing affordability of NIPT services, the NIPT market is expected to gradually grow in the future.

The penetration of NIPT among pregnant women in China has increased from 15.4% in 2018 to 54.5% in 2024, representing a CAGR of 23.4%. Driven by the policy emphasizing on birth defect prevention, rising public awareness of the genetic sequencing and continuous technological advancements, the penetration rate of NIPT among pregnant women is expected to further increase at a CAGR of 6.9%, reaching 99.0% in 2033.

China's NIPT market size in terms of the test takers' expenditure has increased from RMB4.7 billion in 2018 to RMB9.9 billion in 2024, representing a CAGR of 13.1%. The market size is expected to further grow at a CAGR of 6.5% to reach RMB17.4 billion by 2033. Test takers' expenditure refers to the end use test takers' out-of-pocket expenditure for NIPT services.

Market size of NIPT market in China, in terms of test takers' expenditure



Source: National Bureau of Statistics of China, NMPA, NHSA, Annual reports of listed companies, CIC

China's NIPT market size in terms of number of samples has increased from 2.7 million in 2018 to 5.6 million in 2024, representing a CAGR of 13.2%. The market size is expected to further grow at a CAGR of 6.5% to reach 9.9 million samples by 2033. As overall market growth moderates from 13.1% (2018–2024) to 6.5% (2024–2033), incremental volume expansion becomes less significant. This environment favors incumbents with established

scale and distribution, while smaller players face increasing pressure to differentiate through technology, cost efficiency, or niche positioning. Market share consolidation among the top three players is therefore expected to continue. In addition, competition will focus less on capturing new demand and more on improving specificity, sensitivity, and turnaround time of testing kits. Companies that can demonstrate superior clinical performance, operational efficiency, and compliance with evolving regulatory standards will be better positioned to sustain or expand share in a more mature market.

Competitive Landscape of China's NIPT Market

The following table shows the ranking of companies providing NMPA-approved NIPT kits in China as of December 31, 2024.

Rank	Company	Samples in thousands	Market share in terms of amount of samples tested	Revenue (RMB in millions)	Market share in terms of revenues generated
1	Company A	~2,830	50.7%	~907	45.7%
2	The Company	~860	15.5%	~290	14.6%
3	Company B	~820	14.8%	~333	16.7%
4	Company C	~380	6.8%	~136	6.8%
5	Company D	~290	5.2%	~104	5.2%
Aggregate of the Top Five Companies		**~5,180**	**93.0%**	**~1,770**	**89.0%**
Total		**~5,580**	**100.0%**	**~1,987**	**100%**

Source: Annual reports of listed companies, expert interviews, CIC

The following table sets forth the trend of the market share of top three players in China's NIPT market in 2022, 2023 and 2024.

	2022			2023			2024		
Rank	Company	Samples in thousands	Market share	Company	Samples in thousands	Market share	Company	Samples in thousands	Market share
1	Company A	2,210	48.1%	Company A	2,540	50.5%	Company A	2,830	50.7%
2	Company B	811	17.1%	Company B	800	15.9%	The Company	860	15.5%
3	The Company	533	11.6%	The Company	608	12.1%	Company B	820	14.8%
	Aggregate of the Top Three Companies	3,554	77.4%	**Aggregate of the Top Three Companies**	3,948	78.5%	**Aggregate of the Top Three Companies**	4,510	81.0%
	Total	4,590	100%	Total	5,027	100.0%	Total	5,580	100.0%

Source: Annual reports of listed companies, expert interviews, CIC

Company A: Founded in 1999 and headquartered in Shenzhen, Guangdong, Company A is a genomics research and development institution, the business involves genetic testing, mass spectrometry detection, bioinformation analysis and other omics big data technology

Company B: Founded in 2010 and headquartered in Beijing, Company B is a biotechnology company focusing on the transformation of genetic testing technology covering the fields of reproductive health, genetic disease detection, scientific and technological services, and tumor detection

Company C: Founded in 2012 and headquartered in Beijing, Company C is a high-tech enterprise focusing on biological detection technology, providing life science research, medical testing, new drug research and development, health management, judicial authentication, agriculture, forestry and animal husbandry and food safety services

Company D: Founded in 2003 and headquartered in Hangzhou, Zhejiang, Company D is a high-tech enterprise focusing on the overall solution of birth defect prevention and control

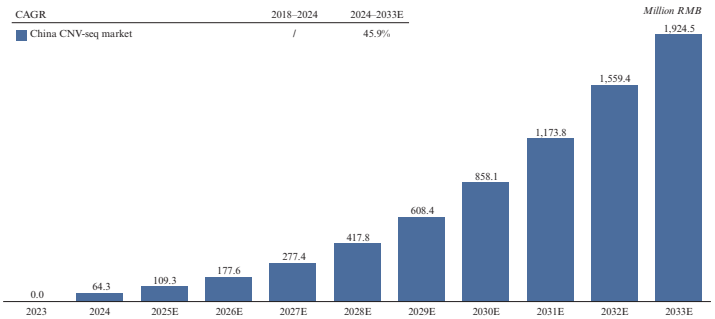
Introduction to CNV-seq

Genomic copy number variations (CNVs) are structural abnormalities in chromosomes that can lead to genetic disorders. Chromosome microarray analysis (CMA) and CNV-seq are recommended methods for detecting CNVs. Compared with CMA, which is limited by higher cost (RMB2,000–3,000), lower throughput and restricted probe coverage, CNV-seq based on NGS provides broader genomic coverage, higher throughput and can be conducted on existing NIPT platforms at a lower cost (RMB1,000–2,000). As a result, CNV-seq is increasingly adopted in clinical practice and has become a first-line prenatal diagnostic approach for at-risk pregnancies.

Market Size of China's CNV-Seq Market

In January 2024, China's first chromosomal aneuploidy and gene microdeletion test kit received NMPA approval, providing a compliant IVD solution for CNV-seq. From 2024, CNV-seq kits are expected to expand coverage across more medical institutions, serving a larger population of high-risk pregnant women. The market size of CNV-seq in terms of patient expenditure is expected to grow rapidly, reaching RMB417 million by 2028 and RMB1.9 billion by 2033. Test takers' expenditure refers to end use test takers' expenditure for the CNV-seq services.

Market size of CNV-seq market in China, in terms of test takers' expenditure



Note: China CNV-seq market represents market size of NMPA-approved CNV-seq kits. The market size between 2018 and 2023 was nil because the first CNV-seq kit approved by the NMPA was introduced in 2024.

Source: National Bureau of Statistics of China, NMPA, NHSA, Annual reports of listed companies, CIC

Competitive Landscape of China's CNV-seq Market

There were no approved CNV-seq kits until January 2024, and there are only a few market players whose CNV-seq kits have received the Class III medical device certificate. The following table shows the ranking of companies providing NMPA-approved CNV-seq kits in China, as of December 31, 2024.

Rank	Company	Samples in thousands	Market share in terms of amount of samples tested	Revenue (RMB in millions)	Market share in terms of revenues generated
1	Company A	~8.8	40.9%	5.0	41.7%
2	The Company	~6.8	31.9%	3.8	31.6%
3	Company B	~5.8	27.1%	3.2	26.7%
Aggregate of the Top Three Companies		**~21.4**	**100.0%**	**12.0**	**100.0%**
Total		**~21.4**	**100.0%**	**100%**	**100%**

Source: annual reports of listed companies, expert interviews, CIC

Growth Drivers of China's Reproductive Health Sequencing Solutions Market

According to CIC, growth in China's reproductive health sequencing solutions market is supported by favorable national policies aimed at improving birth outcomes and reducing birth defects, including the Birth Defect Prevention and Capacity Improvement Plan (2023–2027), which targets 90% coverage of prenatal testing and promotes genetic screening such as newborn deafness testing and thalassemia prevention in high-prevalence regions. Accessibility and affordability of NIPT and CNV-seq are improving through declining testing costs and regional initiatives to incorporate NIPT into medical insurance programs, supporting broader penetration. In addition, rising public awareness of preventive care, higher disposable incomes and expanded health education are reinforcing consumer demand for comprehensive prenatal genetic screening solutions.

Future Trends of China's Reproductive Health Sequencing Solutions Market

According to CIC, China's reproductive health sequencing solutions market is trending toward consolidation, supported by regulatory standardization and policies that favor leading enterprises with established brands, diversified technological capabilities and strong hospital relationships. Competitive advantage increasingly rests on vertically integrated solutions spanning proprietary sequencers, NMPA-approved IVD kits and bioinformatics software, enabling full-process control from sample collection to data interpretation and improving reliability, efficiency and turnaround time. Technological upgrades are expanding NIPT and

CNV-seq applications beyond common trisomies to broader chromosomal abnormalities and single-gene disorders, while stricter regulation and the LDT pilot program are driving hospitals and ICLs to adopt IVD-licensed products for in-house testing.

CHINA'S SCIENTIFIC RESEARCH SEQUENCING SOLUTIONS MARKET

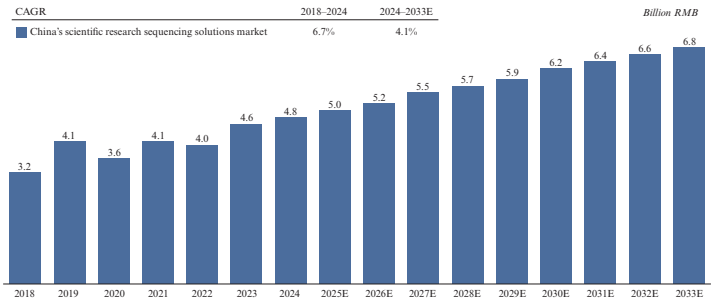
Overview of China's Scientific Research Sequencing Market

China's scientific research sequencing market encompasses the applications of advanced genetic sequencing technologies in various research projects led by academic institutions, research organizations, medical institutions and pharmaceutical companies, covering microbial detection, agriculture, animal husbandry, fisheries, food safety, public health, disease research and pharmaceutical development. Technological advancements in genetic sequencing technologies encourage the investment in multi-omics research and drive the growth of the scientific research sequencing market.

Market Size of China's Scientific Research Sequencing Solutions Market

From 2018 to 2024, the market size of the scientific research sequencing solutions market increased from RMB3.2 billion to RMB4.8 billion, representing a CAGR of 6.7%, and the market is expected to grow at a CAGR of 4.1% to RMB6.8 billion in 2033.

Market size of China's scientific research sequencing solutions market in China, in terms of revenue



Source: National Bureau of Statistics of China, NMPA, Annual reports of listed companies, CIC

Competitive Landscape of China's Scientific Research Sequencing Solutions Market

The following table shows the ranking of companies providing scientific research sequencing solutions in China as of December 31, 2024.

Rank	Company	Revenue (RMB in millions)	Market share in terms of revenues generated
1	Company E	~830	17.4%
2	Company G	~375	7.9%
3	Company A	~345	7.2%
4	Company F	~307	6.5%
5	The Company	~188	3.9%
6	Company H	~171	3.6%
7	Company B	~163	3.4%
8	Company I	~156	3.3%
9	Company J	~155	3.3%
10	Company K	~107	2.3%
Aggregate of the Top Ten Companies		**~2,797**	**58.8%**
Total		**~4,757**	**100%**

The following table shows the comparison of common sequencing technologies.

	Introduction	Application	Advantages and disadvantages
Single-cell sequencing	• aims to analyze cellular heterogeneity and to reveal cell differentiation trajectories and disease mechanisms	• heterogeneous cell populations within tumors can be discovered in tumor research, and the tumor microenvironment can be understood	• It can identify cell types and states, and discover rare cells • High cost, complex data processing, and technical deviations
Spatial transcriptome sequencing	• is to locate the spatial distribution of cells in tissues and to explore the relationship among cells interactions, tissue structure and function	• used in the study of the spatial distribution and interaction of cells during embryonic development and analysis of the spatial relationship between tumor cells and surrounding microenvironment cells	• It provides spatial information on gene expression without the need for labeling, and can be used in a wide range of applications • The high background signal affects the accuracy, and the interpretation of the results is complex
Genome sequencing	• is about de novo genome assembly of species, genetic variation (SNP/Indel) detection	• applied in species evolution research and genetic analysis of complex traits	• It provides complete genomic information, comprehensively detects variants, and aids in genetics research • High cost, complex data analysis, and affected by sample quality

	Introduction	Application	Advantages and disadvantages
Re-sequencing of animals and plants	• is about population genetic analysis, mining key genes of breeding, such as genes related to high-yield rice	• used to study the genetic diversity, population structure and evolutionary history of plants and animals	• Low cost, further assessment of genetic diversity and structure, localization of trait-related genes • Difficult to analyze complex variations among animals and plants, and easily affected by the mixing of samples
Target region capture sequencing	• focuses on specific genes with high-depth detection of low-frequency mutations	• used to detect known disease-related genes, and can quickly and accurately detect gene mutations, providing key information for disease diagnosis, prognosis and treatment	• High-depth sequencing of the target region, flexible and low cost • The probe design is complex, and the capture efficiency is affected by a variety of factors, and it is impossible to detect out-of-target variants
Sequencing only	• performs only basic sequencing data analysis, without further complex bioinformatics analysis	• used as a basic step for other sequencing technologies, providing raw data for subsequent bioinformatics analysis	• Low cost, simple operation, and fast acquisition of sequencing data • Data coverage is limited and quality requirement of samples is high
Microbial sequencing	• is the analysis of microbial communities in environmental samples (e.g. soil, intestines)	• can be used to study the diversity, community structure and function of microorganisms, as well as the interaction between microorganisms and the environment. It is valuable in the diagnosis and treatment of infectious diseases	• Comprehensive analysis of microbial communities, quickly identification of species • The analysis is complex, the information of microorganisms is incomplete, and the platform results vary greatly
Transcriptional regulation sequencing	• is the study of the activity of transcriptional regulatory elements and target genes, providing insights into how transcription is regulated	• helps to reveal the molecular mechanisms of gene expression, and can be used to study the expression regulation mechanism of disease-related genes and provide new targets for disease treatment	• High research value to analyze the regulatory mechanism of gene expression and discover new regulatory elements • The experiments are complex, the data analysis requirements are high, and the ability to detect low-abundance events is limited

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The following table shows sequencing technologies provided by major scientific research sequencing solutions providers.

	Sequencing service offerings							
	Single-cell transcriptome sequencing	Spatial transcriptome sequencing	Genome sequencing	Re-sequencing of animals and plants	Target region capture sequencing	Sequencing only	Microbial sequencing	Transcriptional regulation sequencing
The Company	✓	✓	✓	✓	✓	✓	✓	✓
Company E	✓	✓	✓	✓	✓	✓	✓	✓
Company A	✓	✓	✓	✓	✓	✓	✓	✓
Company G	✓	✓		✓		✓	✓	✓
Company F	✓	✓				✓	✓	✓
Company B	✓	✓	✓	✓		✓	✓	✓

Source: Annual reports of listed companies, expert interviews, CIC

Company E: Founded in March 2011 and headquartered in Beijing, Company E focuses on providing research services such as genetic testing and bioinformation analysis, covering basic scientific research services of life science, medical research and technology services, database construction and sequencing platform services

Company F: Founded in 2006 and headquartered in Houston, USA, Company F is a high-tech enterprise focusing on the field of genetic science and technology, providing cross-omics integrated analysis services from genomics, transcriptomics, epigenomics, proteomics to metabolomics

Company G: founded in 2009 and headquartered in Shanghai, Company G specializes in gene sequencing, bioinformatics cloud computing, multi-omics research services (e.g., microbiomics, single-cell omics, spatial omics), and medical diagnostics services.

Company H: Founded in 2009 and headquartered in Shanghai, Company H focuses on multi-omics technologies (genomics, proteomics, metabolomics, etc.) and provides research services and molecular diagnostic products.

Company I: Founded in 2009 and headquartered in Beijing, Company I is a high-tech enterprise whose main business includes gene sequencing research services, molecular diagnostics, and a biological cloud platform.

Company J: Founded in 2012 and headquartered in Guangzhou, Company J is a high-tech enterprise specializing in genomics technology services and the research and development of genetic diagnostic products.

Company K: Founded in 2014 and headquartered in Shenzhen, Company K focuses on tumor liquid biopsy and genetic big data, with its main business encompassing cancer gene testing and genetic disease screening in healthy populations.

Entry Barriers of China's Scientific Research Sequencing Solutions Market

According to CIC, participation in China's scientific research sequencing solutions market requires comprehensive technological capabilities, including diversified sequencing platforms and advanced bioinformatics analysis, supported by substantial capital investment and long-term collaboration with upstream technology providers. The industry also depends on stable, multidisciplinary teams with expertise in genomics, bioinformatics and related fields, for which recruitment and development involve significant time and resource commitments. In addition, leading providers strengthen their competitive positioning through proprietary algorithms, patented technologies, accumulated sequencing databases and distributed computing infrastructure capable of processing large-scale datasets

Growth Drivers of China's Scientific Research Sequencing Solutions Market

According to CIC, growth in China's scientific research sequencing solutions market is driven by rising demand for complex, data-intensive research in systems biology and precision medicine, as research institutions and hospitals require advanced sequencing technologies. Sustained government support further underpins expansion, with policy initiatives such as the 2023 Key Special Project Declaration Guide, the 2024 Guidance Catalogue for Industrial Restructuring, and the 2025 No. 1 Central Document prioritizing biotechnology, molecular diagnostics and biological breeding. In addition, increased R&D investment supports market growth, with China's fundamental research spending reaching RMB225.9 billion in 2023 (11.6% CAGR from 2022) and genetic sequencing-related funding estimated at US$3–4 billion in 2023, according to CIC.

Future Trends of China's Scientific Research Sequencing Solutions Market

According to CIC, the scientific research sequencing market in China has demonstrated the following trends:

China's scientific research sequencing market is evolving toward integrated, end-to-end solutions that combine advanced technologies with specialized expertise to address increasing data complexity. Core competitiveness is shifting toward AI-driven bioinformatics and multi-omics integration, moving beyond raw data delivery to offer high-value, customized analytical services. Furthermore, market leaders are increasingly synergizing research breakthroughs with clinical applications, such as oncology, to bridge the gap between scientific discovery and precision medicine.

CHINA NEURODEGENERATIVE DISEASE DETECTION MARKET

Alzheimer's disease and other dementias (ADODs) are chronic neurodegenerative conditions caused by neuronal degeneration or myelin loss, leading to cognitive decline and dementia. Alzheimer's disease (AD), the most common form of ADOD, is progressive and irreversible. In China, the aging population has driven a significant increase in ADOD cases, rising from 12.0 million in 2018 to 13.2 million in 2023, and is expected to further increase to

15.0 million by 2033. Despite the absence of effective treatments for AD, early intervention during the pre-clinical or mild cognitive impairment stages has been shown to slow disease progression.

The growing aging population in China underscores the market potential for AD detection and diagnosis. In 2024, about 227.1 million people in China were aged 65 or above, and the figure expected to approach 294.6 million by 2033. With aging comes an increased prevalence of cognitive decline, and the government has prioritized early screening and intervention through various initiatives emphasizing the health of elders, which highlight the need to strengthen the early diagnosis and preventive care for age-related diseases.

Comparison of detection techniques for neurodegenerative diseases

Current diagnostic methods for neurodegenerative diseases include psychometric questionnaires and scales combined with clinical expertise, imaging techniques like MRI and PET-CT, and biomarker detection through cerebrospinal fluid (CSF) or blood samples. The adoption of PET-CT is limited by the availability of radiotracers, high costs and radiation risks. Similarly, CSF testing involves an invasive lumbar puncture procedure that requires hospitalization, carries a risk of infection and often leads to poor patient compliance.

Blood-based detection methods therefore present a more promising alternative, requiring only a simple blood draw. Emerging technologies, such as single-molecule immunoassays, offer ultrasensitive detection capabilities — up to 1,000 times more sensitive than traditional methods. This technological breakthrough makes blood-based biomarker testing increasingly feasible for the early detection of neurodegenerative diseases. As single-molecule immunoassays become more widely available, blood tests are expected to play a crucial role in improving early diagnosis, unlocking significant market potential for neurodegenerative disease detection solutions.

Competitive landscape

The AD blood test market is rather fragmented, with a less than 1% penetration rate among addressable NDD population. According to CIC, as of the Latest Practicable Date, there were 25 market participants with approved blood test kits for neurodegenerative diseases. The market is highly concentrated, with the three largest market participants accounting for approximately 70% of total market in terms of sample tested. The following table provides a comparative overview of key differences among biomarkers used in approved blood-based test kits for neurodegenerative diseases, focusing on their respective roles in disease biology and their clinical applications in NDD detection.

Comparison of key biomarkers for NDD detection

Biomarkers	Aβ42, Aβ40	P-tau181, p-tau217	NfL	GFAP	α-Syn
Definition	• Aβ42 and Aβ40 are two amyloid-β peptides in the blood • Commonly reported as Aβ42/40 (Plasma amyloid-β 42 to 40 ratio) to reflect amyloid-β peptide balance	• Plasma phosphorylated tau at specific epitopes: blood fragments of the tau protein carrying specific chemical modifications (phosphorylation at positions 181 or 217)	• Neurofilament light chain (NfL): a structural protein released into blood when nerve fibers are damaged; measured as an indicator of overall neuronal injury	• Glial fibrillary acidic protein (GFAP): an intermediate filament protein expressed by astrocytes	• Alpha-synuclein (α-syn): a neuronal protein associated with Parkinson's disease and related disorders
Role in disease biology	• Linked to the amyloid pathway of Alzheimer's disease and used to reflect the presence of amyloid plaque-related changes in the brain • Aβ42/40 reported as more reliable than individual markers of Aβ42 or Aβ40	• Linked to tau pathology associated with Alzheimer's disease and studied as a marker of disease-related brain changes • levels are significantly elevated as early as the MCI stage and even during the preclinical phase	• Reflects nerve cell damage regardless of the underlying neurological disease; not specific to a single disorder	• Reflects activation of astrocytes, a common biological response seen in Alzheimer's disease and other brain disorders	• Central to the biology of synucleinopathies (α-synuclein–driven neurodegenerative diseases), which are characterized by abnormal α-syn aggregation • Pathological α-synuclein appears years before cognitive symptoms
Clinical significance	• Used to support identification of amyloid pathology	• Used to support identification of AD-type pathology • Commonly benchmarked against amyloid PET/CSF and clinical reference standards	• Used as a blood marker of neurodegeneration intensity and as an adjunct in differential evaluation across neurodegenerative disorders	• Used as an adjunct marker associated with early diseaserelated brain cell responses, often interpreted together with amyloid or tau biomarkers. • Useful for risk/progression enrichment	• Used to support detection of synuclein-related disease biology • Supports identification of α-synuclein–driven neurodegenerative diseases before irreversible neuronal loss

REPORT COMMISSIONED BY CHINA INSIGHTS CONSULTANCY

In connection with the [REDACTED], we have engaged China Insights Consultancy to conduct a detailed analysis and prepare an industry report on the major markets for which our drug candidates are positioned. China Insights Consultancy is an independent global market research and consulting company that provides market research on a variety of industries including biotechnology. We have agreed to pay China Insights Consultancy a total fee of RMB[REDACTED] for the preparation of the CIC Report, and we believe that such fees are consistent with the market rate. The payment of such amount was not contingent upon our successful [REDACTED] or on the results of the CIC Report. Except for the CIC Report, we did not commission any other industry report in connection with the [REDACTED].

Forecasts and assumptions included in the CIC Report are inherently uncertain because of events or combinations of events that cannot be reasonably foreseen, including, without limitations, the macroeconomic condition, government policies, consumers, competitors and other third parties. Specific factors that could cause actual results to differ materially include, among others, risks inherent in the life science sequencing solutions, social and economic factors, supply chain risks and regulatory environment, financing risks, labor risks, force majeure and unforeseen events.

Except as otherwise noted, all of the data and forecasts contained in this section are derived from the CIC Report. Our Directors confirm that, after taking reasonable care, there is no material adverse change in the overall market information since the date of the CIC Report that would materially qualify, contradict or have an impact on such information.