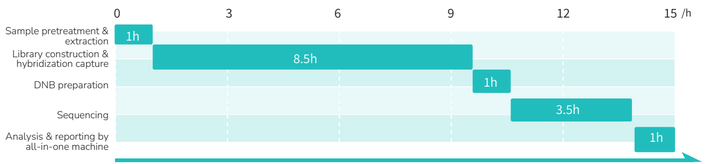
PTseq™ plus Entire-process Detection



*Fastest detection within **15h**, achieving in-hospital PTseq™ plus entire-process detection*

One-stop next-generation sequencing sample preparation workstation

MGIFLP-L Automatic sample preparation system

Throughput: 4 - 32 samples/run

Highly integrated
The entire process of sample extraction, library construction, DNB preparation, and quality control is integrated to achieve **"Sample in, DNB out"**

Easy to use
Equipped with user-friendly master control software and preset applications for easy operation, **supporting one-click startup**

Safety and pollution prevention
Integrated with HEPA high-efficiency filtration system and UV function, **ensuring safety and pollution prevention**

Excellent performance
A **100% Pass rate** of wet lab QC, a **99% pass rate** of full-process QC, within-run and between-run precision >98%

Multiple sequencing platforms for diverse clinical needs

MGISEQ-G50 platform
★ Single chip, with data volume of 600M/chip
★ Sequencing time: 7h
★ PTseq™ plus supports up to 48 samples/chip
★ Supports mixed mNGS and tNGS sample sequencing

DNBSEQ-G99 platform
★ Dual chips, with data volume of 100M/chip
★ Sequencing time: 3.5h
★ PTseq™ plus supports up to 32 samples/chip
★ Supports mixed mNGS and tNGS sample sequencing
★ Flexible, supporting simultaneous/rolling loading of dual chips

DNBSEQ-E25 platform
★ Single chip, with data volume of 25M/chip
★ Sequencing time: 4h
★ PTseq™ plus supports up to 12 samples/chip
★ Cover an area of only 0.1 m^2, and movable
★ Integrated kit, no washing required

Intelligent Integrated Local Analysis and Interpretation System

HALOS All-in-one Bioinformatic Analyzer

Comprehensive and thorough
Built-in with multiple analysis software for pathogen detections, **one machine with multiple functions.** The software covers multiple functional modules such as sample management, analysis & interpretation, data statistics, etc., **enabling entire-process management**

Easy to use
Truly **unattended operation,** with sequencing data automatically pushed to the all-in-one machine for automated analysis and reporting

Flexible and efficient
Support **multiple functions** such as HIS/LIS system integration, establishment of local literature database and background strain database, and personalized report configuration

Safe and reliable
Local network design, equipped with **Level 3 network system security certification,** strict account permission settings, ensuring maximum data security

www.bgi.com/global/
info@bgi.com

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@BGI Genomics

PTseq™ Pan-infection Pathogen Targeted Sequencing

PTseq™ plus

Comprehensive and Efficient Identification of **859** Clinical Infection Pathogenic Microorganism, Drug Resistance Genes, and Virulence Genes

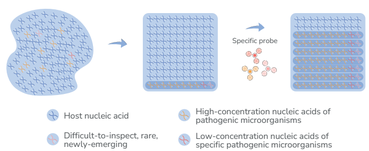
Broad-spectrum Coverage
Precise identification
Multidimensional Think Tank
Efficient Detection

Product Introduction

PTseq™ Pan-infection Pathogen Targeted Sequencing (PTseq™ plus) is based on the targeted next-generation sequencing (tNGS) technology, which captures the target sequences of specific pathogenic microorganisms by probe hybridization, followed by sequencing on next-generation sequencing platform. This product covers a total of 859 targets, including 729 carefully selected pathogenic microorganisms and 130 drug resistance/virulence genes tailored for respiratory, bloodstream, central nervous system, and other infection syndromes. It can efficiently identify suspected infectious pathogens such as bacteria, fungi, and viruses, along with drug resistance and virulence genes, covering over 98% of clinical infection scenarios. It significantly enhances the positive rate of pathogen diagnosis, reduces the risk of drug resistance, and supports precise diagnosis and treatment of infections.

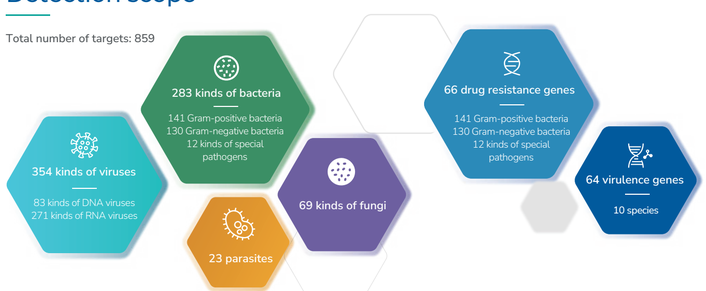
Capture by probe hybridization

The hybrid capture technology is based on the principle of complementary base pairing, where specific probes are designed for target regions. Through the hybridization reaction between the probes and the nucleic acids in target regions, the target regions are captured, while the fragments without probe section are washed away and discarded, enabling the enrichment detection of target pathogens as well as drug resistance and virulence genes.



Detection scope

Total number of targets: 859



Target audience

- Individuals who are clinically suspected of being infected by pathogenic microorganisms and need to know the cause of infection
- Patients requiring drug resistance gene identification

Applicable scenarios

Respiratory infection syndrome

Bloodstream infection syndrome

Central nervous system infection syndrome

RespiTuberculosis and non-tuberculous infections ratory infection syndrome

Focal infection

Product Advantages

Broad-spectrum coverage, identification of pathogenic microorganisms

- A single test fully **covers 729** kinds of clinically significant pathogen targets
- All-round drug resistance identificationof **bacteria, fungi, and viruses**

Target screening based on over 300,000 pieces of mNGS test data

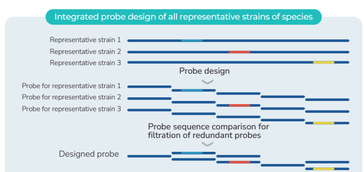
Up to 729 pathogens under the Genus + Species strategy

Comprehensive coverage of clinically common pathogens

Inclusion of more difficult-to-inspect, unusual, and rare pathogens

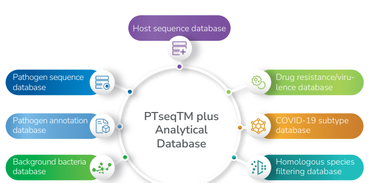
High-Density Probe · Precision Capture

- Hundreds of thousands of high-density probes enable **multi-target coverage,** with higher probe density provided for clinically significant and difficult-to-inspect pathogens to ensure the test sensitivity.
- Adoption of the **integrated probe design for all representative strains is adopted,** retaining multiple overlapping probes in hyper-variable regions, and eliminating redundant probes in conserved regions, **enabling efficient capture**.
- **Full-length coverage of drug resistance and virulence genes** sequences, with higher probe density at drug resistance mutation sites, enhancing the sequencing depth and detection accuracy of **drug resistance sites.**



Multidimensional Think Tank · Empowering Clinical Practices

- Construction of a clinical **pathogen sequence database, species annotation database,** and **background bacteria database** adapted to various samples, enabling precise identification of pathogenic microorganisms
- **Provision of comprehensive annotation information for the detected drug resistance and virulence genes,** assisting in addressing the clinical application challenges of drug resistance gene detection, and enhancing the reference value of drug resistance results
- **Self-built COVID-19 subtype database,** updated in real-time to ensure subtyping accuracy



Efficient Detection · Outstanding Performance

- Realization of ultra-sensitive detection through capture and enrichment, with a detection limit as low as **10 CFU(copies)/mL.**
- High-efficiency cell-free DNA fragment enrichment capability, improving the detection sensitivity in samples such as **blood and cerebrospinal fluid.** Compared with multiplex PCR targeted sequencing, the **positive detection rate of sterile body fluid samples increases by 15% to 20%.**
- **1h rapid hybridization technology,** significantly improving hybridization efficiency and speed, and reducing the detection time

	Gram-positive bacteria			Gram-negative bacteria			Fungi		DNA viruses	RNA viruses
Pathogen	Strepto-coccus agalactiae	Mycobacteri-um tuberculo-sis complex	Nocardia nova	Acinetobacter baumannii	Klebsiella aerogenes	Bordetella pertussis	Candida albicans	Aspergillus fumigatus	Human herpesvirus 5 (CMV)	Parainfluenza virus type 3
LOD CFU(copies)/mL	50	50	50	50	10	50	100	10	10	0.0135 TCID*

* TCID: A measuring unit for characterizing virus titer, the amount of virus required to cause half of the cells to become diseased or die in a 50-well plate or test tube

Sample Types

Sample Type	Recommended sampling volume	Collection tube
Peripheral blood	Adults: ≥3 mL; Infants: ≥2 mL	Disposable cell-free DNA collection tube
Bronchoalveolar lavage fluid	≥3mL	Sterile and clean cryovial
Sputum	≥3 mL (deep sputum)	Sterile and clean cryovial
Nasopharyngeal/Oropharyngeal swab	1-2 pcs	Disposable virus sampling kit
Cerebrospinal fluid	≥2mL	Sterile and clean cryovial
Pus, pleural/ascitic fluids, etc.	≥3mL	Sterile and clean cryovial
Fresh tissue	Tissue obtained through surgery Mung bean-sized; tissue obtained through puncturing: 2-3 needles	Sterile and clean cryovial

PTseq™ plus One-stop Localization Solutions

Automatic sample preparation system, supporting automatic nucleic acid extraction and library construction

MGIFLP-L Automatic sample preparation system
(Supports automatic extraction and library construction, 32 throughputs)

MGISP-100 automatic sample preparation system
(Supports automatic extraction, 16 throughputs)

Efficient disruption to enhance the release efficiency of nucleic acids

High-efficiency tissue and cell sample processing system DS1000

Multiple available sequencing platforms, meeting diverse throughput needs

MGISEQ-2000*
Gene sequencer

MGISEQ-200*
Gene sequencer

DNBSEQ-G99*
Gene sequencer

DNBSEQ-E25
Gene sequencer

*All platforms except DNBSEQ-E25 support mixed sample sequencing.

Integrated local analysis and interpretation system, intelligent reporting

HALOS All-in-one Bioinformatic Analyzer