AIT biotech
Advanced • Innovative • Trusted

*ab*NEX™ tNGS Solution for PRECISE Testing

P: Productive
R: Reliable
E: Efficient
C: Conclusive
I: Innovative
S: Sensitive
E: Entrusted

Version 1.02OT2025

HyPA Technology

Leveraging the power of multiplex PCR and Next-Generation Sequencing (NGS), Hyperplex Precise Amplification (HyPA) Technology accurately identifies hundreds of known pathogenic microorganisms from a single specimen. The process also detects associated virulence and drug-resistance genes, providing critical information for treatment. As a targeted NGS (tNGS) method, it offers the dual advantages of high sensitivity and cost-efficiency, ensuring reliable pathogen detection even at minimal concentrations.

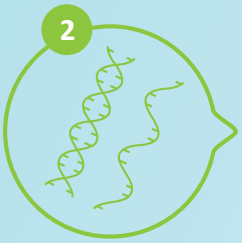
Workflow

20 mins

Sample Pre-treatment

*ab*Prep™ 6/24

*ab*Genix™ Sample Diluent

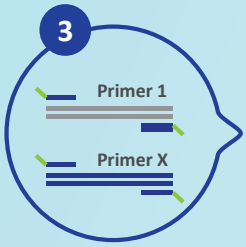


30 mins

Nucleic Acid Detection

*ab*Genix™ Automated DNA & RNA Extraction System

*ab*Genix™ Universal Extraction Kit

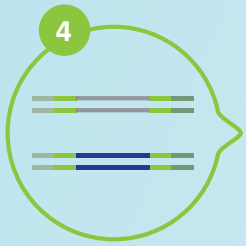


4 hours

Library Preparation

*ab*NEX™ Pan-Infection Kit

*ab*NEX™ MTB Kit



4 hours

Sequencing

*ab*SEQ™ Genetic Sequencer

*ab*SEQ™ Sequencing Set

30 mins

Bioinformatics Analysis

*ab*TRON™ Intelligent Center

*ab*NEX™ Pan-Infection Kit

DETECTION OF

476
PATHOGENS

88
ANTIMICROBIAL GENES MUTATIONS

9
HYPERVIRULENCE GENES

- 120 Bacteria
- 66 Fungi
- 76 MTB/NTM
- 27 Parasites
- 101 RNA Viruses
- 16 Other Pathogens
- 69 DNA Viruses

High Sensitivity

The technology offers a low limit of detection at 50 copies/mL, facilitating early and accurate diagnosis of infections.

A wide variety of sample types can be analyzed, including:

Bronchoalveolar lavage fluid (BALF), Cerebrospinal fluid (CSF), Hydrothorax and Ascites, Pus and Synovial fluid, Peripheral blood, Throat swab, Sputum, Urine

Enhanced Diagnostic Capabilities

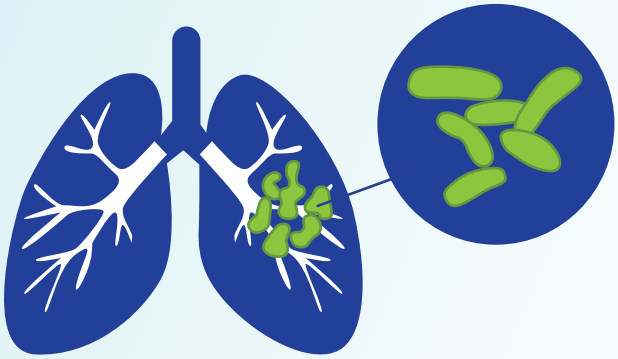
This method enables the early detection and diagnosis of complex, mixed, or rare infections, guiding timely and effective clinical intervention.

*ab*NEX™ MTB Kit

DETECTION OF TUBERCULOSIS (TB)

34
DRUG RESISTANCE GENES

99
NON-TUBERCULOSIS MYCOBACTERIA



- Mycobacterium Tuberculosis Complex (MTBC)
- 99 Non-Tuberculosis Mycobacteria (NTM)
- 5 first-line anti-tuberculosis drugs (8 gene mutations).
- 12 second-line anti-tuberculosis drugs (22 gene mutations).
- 3 anti-NTM drugs (4 gene mutations).

High Sensitivity

With a low limit of detection at 50 copies/mL, this technology enables early and accurate diagnosis.

Broad Sample Capabilities

Suitable for all respiratory samples, including sputum and bronchoalveolar lavage fluid (BALF)

Comprehensive Drug Resistance Profiling

Coverage of 17 anti-tuberculosis drugs and 3 anti-NTM drugs

Comparison of different detection TB method

Method	Sample Type	MTBC	NTM	Drug	Drug Resistance Gene	Co-Infections	Time	Sensitivity & Specificity
*ab*NEX™ MTB Kit	• BALF • Pleural fluid • Ascites fluid • Sputum • CSF	✓	✓	Rifampicin Pyrazinamide Isoniazid Ethambutol Streptomycin Levofloxacin Moxifloxacin Amakacin Capreomycin Kanamycin Ethionamide Na Aminosalicylate Cycloserin Clofazimine Bedaquiline Linezolid Delamanid	*rpoB* *katG* *inhA* *pncA* *embB* *rpsL* *rrs* *gid* *gyrA* *gyrB* *cycA* *ald* *tlyA* *eis* *folC* *ethA* *thyA* *alr* *Rv0678* *atpE* *ddn* *rplC* *ribD*	✓	10.5 hours	95.45%* (Sensitivity) & 95.65%* (Specificity)
Brand C Kit 1	• Sputum • Respiratory tract samples	✓		Rifampicin (RIF)	*rpoB*		2 hours	94.17%* (Sensitivity) & 100%* (Specificity)
Brand C Kit 2	• Sputum • Respiratory tract samples	✓		Rifampicin (RIF)	*rpoB*		~1.5 hours	99.5%** (Sensitivity) & 95.5%** (Specificity)
Brand C Kit 3	• Sputum • Respiratory tract samples	✓		Isoniazed Ethionamide Fluoroquinolones Second-line Injectable drugs	*inhA* *katG* *fabG1* *oxyR-ahpC* *gyrA* *gyrB* *eis*		~1.5 hours	64.7-93.1%** (Sensitivity) & 98.3%-100%** (Specificity)
MGIT 960 Culture	All sample types	✓	✓	All drugs	N/A		4-8 weeks	70.25%* (Sensitivity) & 100%* (Specificity)

* Based on 201 samples carried out in a comparison experiment.
** Based on product data sheet provided by manufacturer.

Ordering Information

Part Number	Product Name	Packaging Size
800580	*ab*Prep™ 6 Bead Beater	1 unit
800581	*ab*Prep™ 24 Bead Beater	1 unit
800800	*ab*Genix™ Automated DNA & RNA Extraction System	1 unit
801001	*ab*SEQ™ Genetic Sequencer	1 unit
801021	*ab*TRON™ Intelligent Center	1 unit
800970	*ab*Genix™ Sample Diluent	1 bottle
800971	*ab*Genix™ Universal Extraction Kit	48rxns/kit
302211	*ab*NEX™ Pan-Infection Kit	48rxns/kit
302212	*ab*NEX™ MTB Kit	48rxns/kit
302011	*ab*SEQ™ Sequencing Set SE100	1 set
302014	*ab*SEQ™ Sequencing Set PE150 AppC	1 set

For more information

25 Pandan Crescent, TIC Tech Centre, #05-15, Singapore 128477

(65) 6778 6822 sales@aitbiotech.com www.aitbiotech.com