

# GeneMind™ HLA Typing (11 Loci) Solution

Explore Life's Mysteries for Better Healthcare

## Key Features:

### High Resolution

Supports **4-field (8-digit)** high-resolution genotyping, enabling precise allele identification.

### Full-Length Coverage

Covers **full-length** sequence including UTRs, exons, and introns (excluding highly repetitive elements), spanning approximately **130 kb** of genomic region.

### Comprehensive Loci

Covers **HLA-A, B, C, DPA1, DPB1, DQA1, DQB1, and DRB1/3/4/5**, ensuring complete allele coverage across all major HLA loci.

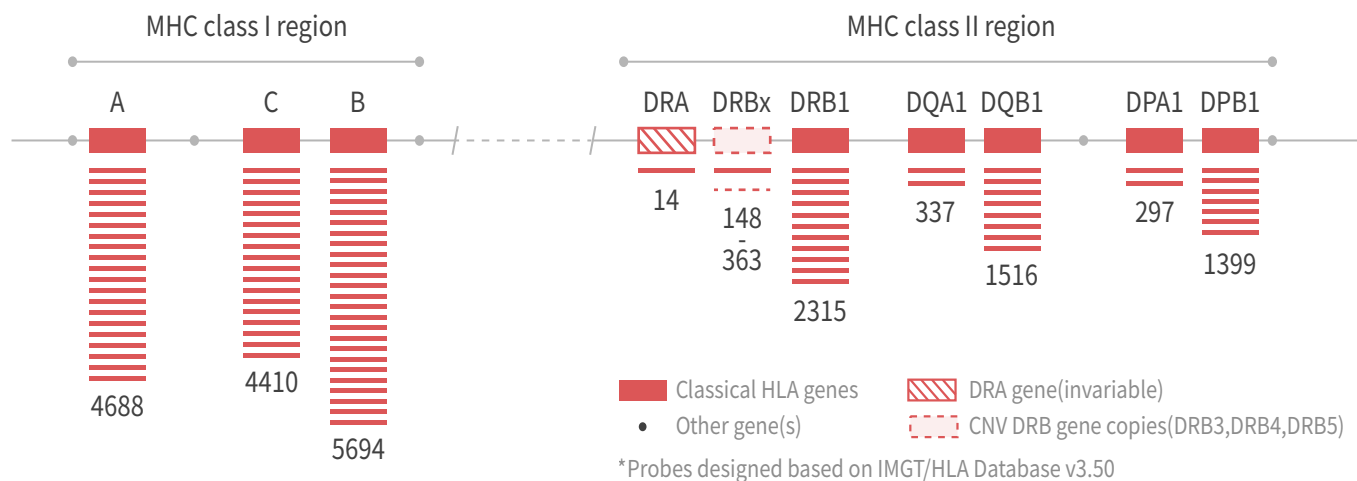
### Automated Data Analysis & Intelligent Reporting

Built-in dedicated HLA analysis software automatically delivers 8-digit genotyping results with full annotation, reference database alignment.



## ◎ Background

Human Leukocyte Antigen (HLA) genes are among the most polymorphic regions in the human genome, playing a critical role in immune response, histocompatibility, and susceptibility to autoimmune diseases. Accurate HLA genotyping is essential for organ transplantation, hematopoietic stem cell matching, pharmacogenomics. With increasing clinical demand for high-resolution typing, a robust and comprehensive solution is required to capture the allelic diversity of the HLA loci.



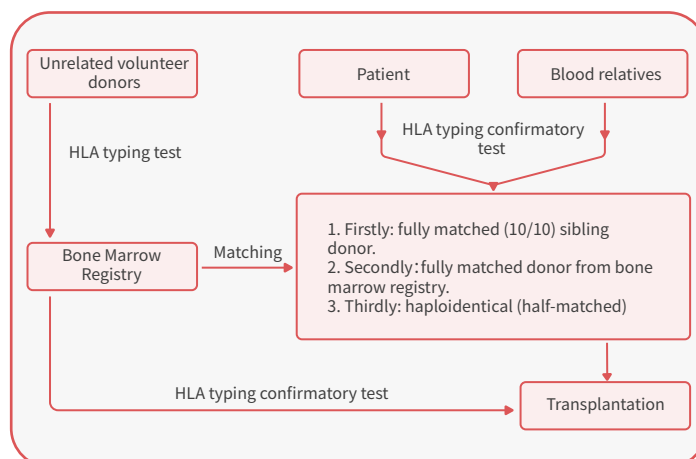
## ◎ Which technique to choose?

| Parameter         | NGS                               | SSO                                                | SSP                                               | SBP              |
|-------------------|-----------------------------------|----------------------------------------------------|---------------------------------------------------|------------------|
| Methods           | Library Construction - Sequencing | PCR - Probe Hybridization - Fluorescence Detection | PCR - Probe Hybridization - Ultraviolet Detection | PCR - Sequencing |
| Sample Throughput | High                              | Low                                                | Low                                               | Medium           |
| Resolution        | High                              | Medium - High                                      | Low                                               | High             |

Although the PCR SBT method is a recognized method for HLA typing detection, it still faces the problem of ambiguous designation during the typing process. Meanwhile, NGS, with its characteristics of high - throughput and accurate typing, has been gradually widely applied.

## ◎ Product Introduction

The 11 Loci HLA Solution is a next-generation sequencing (NGS)-based genotyping kit designed to deliver high-resolution, full-length HLA typing across 11 key loci. Leveraging probes based on the IMGT/HLA Database v3.50. This kit covers a genomic region of approximately 130 kb, including UTRs, exons, and introns. It supports 4-field (8-digit) resolution, **it is specifically developed for confirmatory testing in bone marrow and organ transplantation.** With a flexible workflow that accommodates both manual and automated library preparation, the kit provides a scalable, high-throughput solution suitable for laboratories with varying sample sizes.

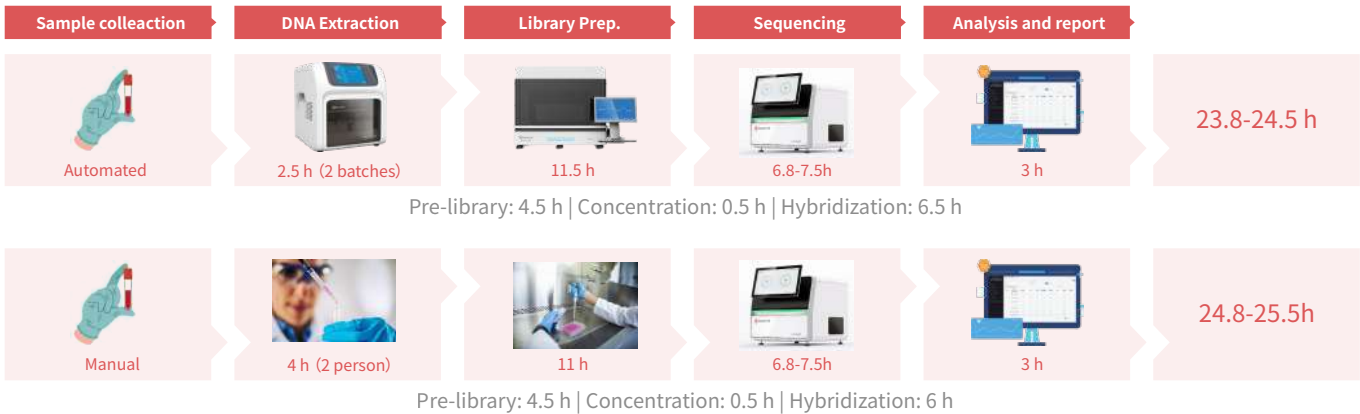


# Product Information

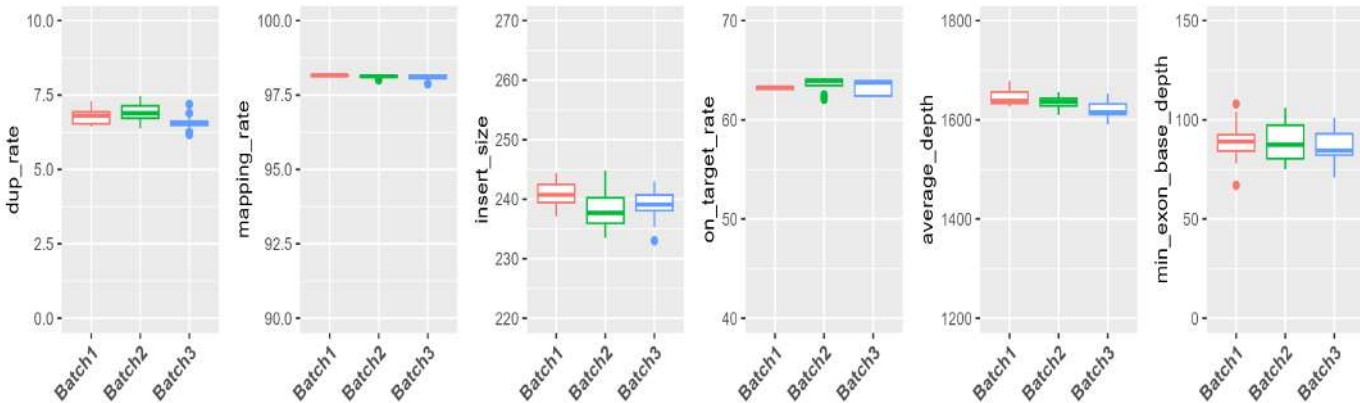
|                        |                                                                                                                          |                        |                       |                          |
|------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|--------------------------|
| Product Name           | Human Leukocyte Antigen (HLA) Genotyping Kit (11 Loci)                                                                   |                        |                       |                          |
| Targeted Genes         | Class I: <i>HLA-A, B, C</i> ; Class II: <i>HLA-DPA1, DPB1, DQA1, DQB1, DRB1/3/4/5</i> ; Full-length sequences of 11 loci |                        |                       |                          |
| Specifications         | 48 tests/kit ; 96 tests/kit                                                                                              |                        |                       |                          |
| Hybridization          | 3h rapid hybridization supported; maximum 12-plex pooling                                                                |                        |                       |                          |
| Sample Type            | Whole Blood                                                                                                              |                        |                       |                          |
| Sample Requirements    | Collected in EDTA tubes; ≥ 2 mL blood                                                                                    |                        |                       |                          |
| Genotyping Resolution  | Field 4 / Digit 8                                                                                                        |                        |                       |                          |
| Data Output per Sample | 0.3 Gb (PE150)                                                                                                           |                        |                       |                          |
| Sequencing Type        | PE150                                                                                                                    |                        |                       |                          |
| Sequencing Platform    | FASTASeq 300                                                                                                             | GenoLab M              | FASTASeq S            | SURFSeq 5000             |
| Throughput per Run     | 1 FCM: 100<br>1 FCH: 224<br>1 FCP: 400                                                                                   | 1 FCM:196<br>1 FCH:400 | 1 FCL:16<br>1 FCM: 32 | 1 FCM:600<br>1 FCH: 2400 |
| Turnaround time        | 13-24h                                                                                                                   | 38-50h                 | 6.8-7.5h              | 16-31h                   |
| DNA Input Requirement  | Minimum 30 ng DNA input; 100 ng DNA recommended                                                                          |                        |                       |                          |

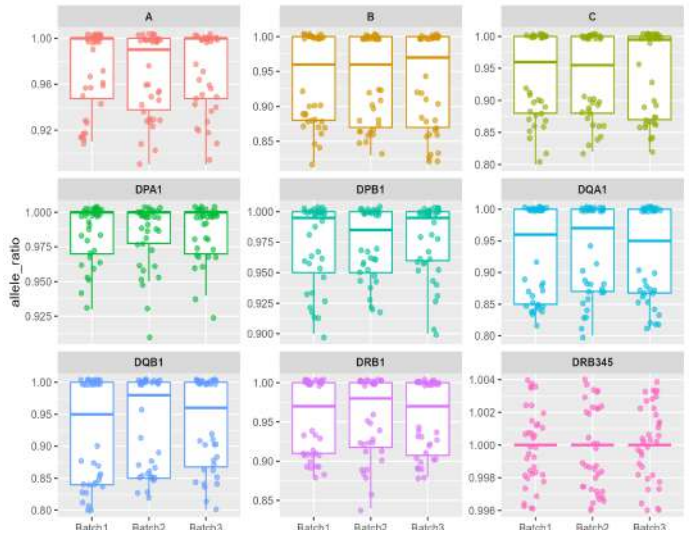
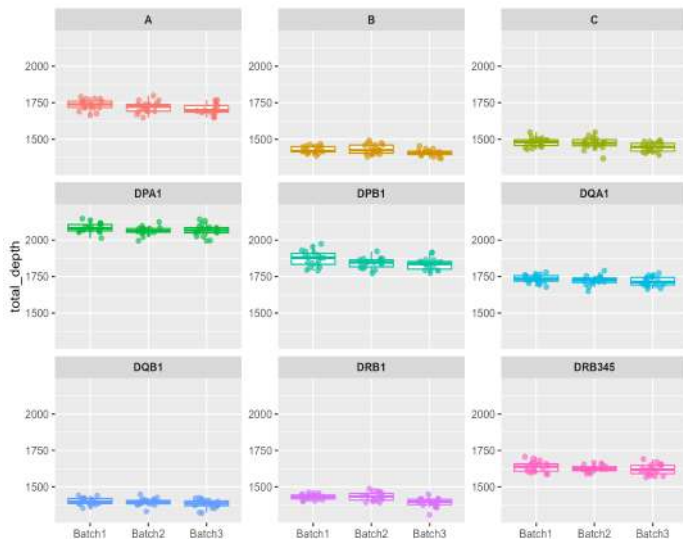
## Whole workflow

Support both automated and manual pipeline :



## Data Performance





**Conclusion:** Three batches of intra-batch stability tests were conducted on the kit, and the results showed that the kit has relatively high stability.

## ⦿ Genotyping Performance

Consistency analysis results of UCLA standard samples (72 samples)

|                         | A       | B       | C       | DRB1    | DQB1    | DQA1    | DPB1    | DPA1    | DRB3/4/5 |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|
| Allele numbers          | 72      | 72      | 72      | 72      | 72      | 72      | 72      | 72      | 72       |
| Inconsistent Quantities | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        |
| Concordance Rate        | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00%  |

Consistency analysis results of 34 known-result enterprise reference samples (34 samples)

|                         | A       | B       | C       | DRB1    | DQB1    | DQA1    | DPB1    | DPA1    | DRB3/4/5 |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|
| Allele numbers          | 34      | 34      | 34      | 34      | 34      | 34      | 34      | 34      | 34       |
| Inconsistent Quantities | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        |
| Concordance Rate        | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00%  |

**Conclusion:** The 11 Loci HLA Solution demonstrated 100% accurate genotyping across all evaluable samples, confirming its reliability for high-resolution HLA typing.

## ⦿ Disclaimer

This product is for research use only. Not for diagnostic procedures. Test results should be interpreted by qualified professionals in conjunction with other clinical findings. The manufacturer does not guarantee therapeutic outcomes.



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