

HLA Panel by NGS-Data Only

Versiti offers a laboratory service to other labs for rapid implementation of next generation sequencing (NGS) for all classical HLA loci: HLA-A, -B, -C, -DRB1, -DRB3/4/5, -DQA1, -DQB1, -DPA1, and -DPB1. Versiti performs the sample preparation and raw sequence data generation and delivers the data files to you for analysis. This eliminates the need to purchase expensive equipment and learn complicated laboratory methods.

Next generation sequencing (NGS) platforms are now widely used for HLA typing but some labs are not able to implement the method due to a variety of factors¹. Versiti, Blood Center of Wisconsin has a long history of expertise in molecular based HLA typing and has been using Illumina NGS platforms since 2016^{2,3}. We are offering a comprehensive sample-to-data service for high resolution HLA typing to HLA labs who do not have an NGS platform but want to provide high quality typing results to their patients.

Versiti performs the laboratory steps to generate NGS raw data files that are delivered to your lab for analysis and final HLA typing. Versiti has partnered with GenDx to provide training and support of their NGSengine[®] and Illumina[®] software so you can have full control over the HLA typing results. Versiti will assist you in setting up this service and provide access to a secure file transfer portal for downloads of the HLA specific fastq data files.

Indications for testing:

- Sequencing all classical loci of the HLA region at high resolution is the gold standard in donor matching in transplantation(1,2)
- HLA sequencing by NGS methods can also be useful in clinical research for transplantation, adoptive cellular therapy, and immunotherapy

Test Method

PCR and Direct DNA Sequencing

The informative class I and II HLA exons and introns of an individual sample are amplified using the polymerase chain reaction (PCR) with locus-specific primers designed & manufactured by GenDx. The nucleotide sequences for each HLA locus are determined using an Illumina Next Generation Sequencing platform where the PCR products for each sample are fragmented and barcoded prior to sequencing on the instrument using reversible dye-labeled terminators. Output sequences are reviewed against specific quality metrics by trained and certified histocompatibility experts.

Assay sensitivity and limitations:

Some rare allele combinations and alleles whose sequences differ outside the included HLA regions may not be completely resolved by this technique.

Reporting of results:

Fastq files and quality metrics will be downloadable via our secure file transfer.

Specimen requirements:

4 buccal swabs or 14 ml EDTA (lavender top) whole blood or 2-5 ml EDTA bone marrow or high quality DNA (3-4ug at 25ng/ul).

Pediatric: 3-4 buccal swabs or 5 ml EDTA (lavender top) whole blood.

Contact the laboratory for instructions if submitting cord blood.





SHIP

Shipping requirements:

Place the room temperature specimen and requisition into plastic bags, seal and place in an insulated container. Seal the container and place in a sturdy cardboard container and tape securely. Ship the package in compliance with your overnight carrier guidelines. Address the package to:

Versiti Client Services
Histocompatibility Laboratory
638 N. 18th St.
Milwaukee, WI 53233-2121
800-245-3117, ext. 6250

References:

1. Improved Accuracy of clinical HLA genotyping by next-generation-sequencing affects unrelated donor search results for hematopoietic stem cell transplantation. Allen ES, et.al. Human Immunology 79, 2018: 848-854.
2. Direct HLA genetic comparisons identify highly matched unrelated donor-recipient pairs with improved transplantation outcome. Vazirabad I, et.al. Biology of Blood & Marrow Transplant 2019: 25(5):921-931.
3. Directors' Affairs Committee — NGS Survey report. Schiller JJ, et.al. ASHI Quarterly 2022: Vol46(1):46-49.



ORDER

Required forms:

HLA Panel by NGS-Data Only
Requisition

CPT Codes/Billing/Turnaround Time

For recommended CPT codes, visit the [Versiti.org test catalog](https://www.versiti.org/test-catalog)

Turnaround time: 4-6 days