IMMUNOGENETICS (HLA) LABORATORY SERVICES

NYBC’s Laboratory of Immunogenetics provides HLA testing for potential bone marrow and cord blood recipients, potential cord blood and bone marrow donors (families and unrelated), platelet donors and recipients, and TRALI investigation.

Our laboratory also offers verification of HLA typing for patients, donors, and cord blood unit contiguous segments. The service is available for single sample or high throughput requests for HLA-A, -B, -C, -DRB1, and -DQB1 typing determined by low-intermediate and high resolution (DNA sequence based typing). The laboratory provides consultation directly with physicians and blood bank staff for review of test results, sample and test requirements, and shipping arrangements.

We employ DNA-based methodologies for the detection of Human Leukocyte Antigens (HLA). These include determination of allele assignments by Sequene Based Typing (SBT), reverse Sequence Specific Oligonucleotide (rSSO) and Sequence Specific Primers (SSP).

We have the qualifications to perform HLA testing for: transplantation; family and unrelated donor screening for transplant matches; patient and potential transfusion donor screening for platelet matches; cord blood HLA typing; confirmatory HLA typing for patient, donor, and cord blood unit contiguous segment; disease association; vaccine studies; and clinical trials.

LABORATORY OF IMMUNOGENETICS (HLA)

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LABORATORY OF IMMUNOGENETICS (HLA)

TESTING PROCESS FLOW IMMUNOGENETICS (HLA)

SAMPLE ACCESSIONING
Specimen information entered into Laboratory of Immunogenetics (HLA) database

DNA AMPLIFICATION
Agarose gel of PCR products

DNA EXTRACTION
Genomic DNA purification and storage

DNA SEQUENCING
High throughput DNA sequence-based HLA typing

DNA RSSO LUMINEX
HLA typing by reverse sequence specific oligonucleotide

MOLECULAR (DNA) TYPING GUIDELINES

HLA TESTS
<table>
<thead>
<tr>
<th>HIGH RESOLUTION</th>
<th>METHODOLOGIES</th>
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<tr>
<td>HLA-A</td>
<td>Sequence Based Typing (SBT)</td>
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<tr>
<td>HLA-B</td>
<td>and</td>
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<tr>
<td>HLA-C</td>
<td>Sequence Specific Primers (SSP)</td>
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<tr>
<td>HLA-DRB1</td>
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<tr>
<td>HLA-DQB1</td>
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<table>
<thead>
<tr>
<th>LOW/INTERMEDIATE RESOLUTION</th>
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<tbody>
<tr>
<td>HLA-A</td>
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<tr>
<td>HLA-B</td>
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<tr>
<td>HLA-C</td>
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<tr>
<td>HLA-DRB1</td>
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<td>HLA-DQB1</td>
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SPECIMEN REQUIREMENTS

Whole Blood: 3-5 ml in EDTA or ACD—avoid Heparin (Ship in ambient temperature)

*Buccal Swab: Minimum of 5 swabs (Ship in ambient temperature)

Genomic DNA: Minimum of 20µg (Ship in ambient temperature)

Cord Blood Unit Contiguous Segment (Must be shipped on dry ice)

Frozen Cells (Must be shipped on dry ice)
Each specimen container must be individually labeled

*Buccal Swab Collection
- Individual providing sample must not consume food or drink 30 minutes prior to sample collection
- Use a minimum of 2-3 swabs per cheek (DO NOT touch the swabs to any surface prior to collection)
- Rub the swab against the inside of each cheek at least 6 times (avoid collecting saliva)
- Place swabs into sterile tube(s) containing 2-3 ml of sterile saline solution and seal to prevent leakage
- Label tube(s) with individual’s name and collection date

CLINICAL CONSULTATION
- Human Immunogenetics, Histocompatibility and/or Transplantation Immunology
- The appropriateness of the testing orders to meet the clinical need and interpretation of test results