BloodCenter of Wisconsin offers a single test for expanded high resolution typing of Class I HLA-A, -B, and -C loci and Class II HLA-DRB1, -DQA1, -DQB1, -DPA1, and -DPB1 loci by next generation DNA sequencing.

BACKGROUND:
DNA sequencing is universally regarded to be the gold standard for identification of HLA alleles. Historically, sequence based typing of HLA genes has focused on the exons that encode the Antigen Recognition Site (ARS) of the HLA molecule. By sequencing regions beyond the ARS of HLA genes that govern compatibility, all common allele combinations can be resolved and new alleles are more easily identified.

REASONS FOR REFERRAL:
HLA matching is important for successful allogeneic hematopoietic stem cell transplantation.

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. The nucleotide sequences for each haplotype are determined using a 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 assembled for each sample based on known reference alleles using validated allele-assignment software. HLA types are reported for each locus by trained and certified histocompatibility experts.

LIMITATIONS:
• Some rare allele combinations and alleles whose sequences differ outside the informative exons may not be completely resolved by this technique.
SPECIMEN REQUIREMENTS:
4 buccal swabs or 14 ml EDTA (lavender top) whole blood or 2-5 ml EDTA bone marrow or high quality DNA (≥ 500ng at 25ng/ul)

SPECIMEN REQUIREMENTS (PEDIATRIC):
3-4 buccal swabs or 5 ml EDTA (lavender top) whole blood
Contact the laboratory for instructions if submitting cord blood

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:

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

TURNAROUND TIME: 5-7 days

CPT CODES:
HLA-A, B, C, & DRB1 High Resolution: 81378
HLA-DQA1 High Resolution: 81382
HLA-DQB1 High Resolution: 81382
HLA-DPA1 High Resolution: 81382
HLA-DPB1 High Resolution: 81382

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