



# HLA DRB1 AND DQB1/DQA1 LOW RESOLUTION TYPING

*BloodCenter of Wisconsin Histocompatibility Laboratory  
offers DNA-based typing for determination of  
HLA Class II (DRB1 and DQB1/DQA1).*

## BACKGROUND:

Analysis of the human major histocompatibility complex (MHC) has grown in complexity since introduction of testing in 1950. For many years, serologic typing techniques and the mixed lymphocyte culture (MLC) were standard for compatibility testing at HLA Class II. As the number of solid organ and bone marrow transplants performed increased, the need for more definitive typing became apparent. Molecular techniques allow for greater resolution of MHC antigens than serology and, more importantly, molecular techniques provide greater predictive value of transplant survival than the MLC.

DNA-based typing of HLA Class II overcomes many inherent problems of both serologic and cellular (MLC) techniques. Patient cells do not need to be capable of a functional response to antigen, autologous background is eliminated, and specimens from recipients and donors may be tested independently of one another. Additionally, viable cells are not required for DNA-based HLA typing.

## METHOD:

PCR-rSSO by Luminex™ flow microfluorimetry.

DNA is isolated and amplified utilizing PCR and primers specific for the DRB1 and DQB1/DQA1 loci within the HLA complex. Amplified DNA is then allowed to hybridize to sequence-specific probes that are conjugated to fluorescently-labeled microspheres. Each of these microspheres has a unique fluorescent label and collectively make up the Luminex™ liquid bead array. Hybridization events are detected fluorometrically using Luminex™ instrumentation.

## REASONS FOR REFERRAL:

HLA matching is important for successful allogeneic transplantation.

## LIMITATIONS:

Only broad "serologic" antigen definition for DRB1 and DQA1 is reported.

SPECIMEN REQUIREMENTS:

4 buccal swabs or 14 ml EDTA (lavender top) whole blood

SPECIMEN REQUIREMENTS (PEDIATRIC):

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

TURNAROUND TIME: 5-7 days

CPT CODES: 81375

SHIPPING REQUIREMENTS:

Place the room temperature specimen and requisition into plastic bags, seal, and place in a Styrofoam container. Seal the container and place in a sturdy cardboard container and tape securely. Ship the package in compliance with your overnight carrier guidelines. Label with the following address:

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