National Marrow Donor Program®
HLA Typing Discrepancy Review Process

Updated June 2008

Overview: The NMDP compares current HLA typing results of donors, recipients, and cords in the Registry with typing results recently submitted to the NMDP. A daily report displays any results that are possibly discrepant.

Staff from the Scientific Services department reviews the report and determines if any of the potential discrepancies need to be investigated. If further investigation is warranted, the current reporting center is provided with both their results and the original typing results. They are asked to review the data for errors or to confirm their results. If they confirm the results, the previous reporting center is contacted and provided the same information. If the previous center also confirms their results the discrepancy is resolved with a third party HLA lab, if the situation permits.

Once the source of the error is determined, any reporting center that was contacted receives notification of the resolution. If the reporting center was a Transplant Center, they are also instructed to provide a copy of the report to their affiliated HLA typing laboratory.

Discrepant Typing Report Form: This form can be used by a transplant center to report a discrepancy to the NMDP.

NMDP Guidelines: There are specific circumstances that the NMDP has determined may not require confirmation of the test results, and therefore an investigation may not be warranted. These guidelines, presented below, were established through the review of published data (1, 2, 3, 4).

In the following circumstances, new DNA results will be accepted without verification from the reporting center unless warranted by the reviewer.

Note: If more than one locus is discrepant for a sample, even if singly they would meet the following conditions, it will be investigated as a potential sample switch.

- **Common serologic mistypings**
  Common serologic mistypings have been documented in published papers (1, 2, 3, 4).

- **Serology typing reported as homozygous, DNA typing reported as heterozygous**
  Literature gives many examples where serology antigens are not reported primarily due to limitations in methodology (1, 2, 3, 4). An example of this is:

- **Serology results with nomenclature issues**
  Nomenclature issues involve names that are assigned based on DNA sequence homology even though the serologic reactivity differs from the DNA family it was assigned to. An example of this is:

  Initial typing: SER B50
  Current typing: DNA B*4005

- **Serology split is different from DNA split of the same broad antigen**
  Due to the cross reactive nature of HLA antisera, serology results reported to the split level may be found to be a different split of the same broad when typed by DNA methodology. An example of this would be:

  Initial typing: SER B 65
  Current typing: DNA B*1401

In the following situations, the current reporting center will be contacted to confirm their results, but the previous center will not be contacted unless warranted by the reviewer.

- **Current and Previous typing dates are more than 5 years apart**
  Records older than 5 years are difficult to retrieve, and current typings that are confirmed are usually correct.

- **Allele reported which was not defined when the first typing was reported.**

References
1. H.J. Noreen, et al. Validation of DNA-based HLA-A and HLA-B testing of volunteers for a bone marrow registry through parallel testing with serology. Tissue Antigens 2001: 57:221-229.

2. Schreuder GMTh et al. The HLA dictionary 2001: a summary of HLA-A, -B, -C, -DRB1/3/4/5, -DQB1 alleles and their association

with serologically defined HLA-A, -B, -C, -DR and – DQ antigens. Human Immunology 2001: 62: 826-849.

3. Lau M, Park M, Terasaki P. International cell exchange 1974-1996, A 23-year documentation. In: Terasake P, Gjertson A, eds.

HLA 1997. Lenexa, KS: ASHI, 1997:85.

4. Gourley, I.S.et al. HLA Class I typing of volunteers for a bone marrow registry: QC analysis by DNA-based methodology identifies

serological typing discrepancies in the assignment of HLA-A and B antigens. Tissue Antigens 2002 59:211-215.

Discrepant Typing Report

Section A
To be completed by Transplant Center

Recipient ID: **Recipient Name:** **Transplant Center ID:**

Donor ID:

HLA-	A	A	B	B	C	C	DRB1	DRB1	DQB1	DQB1
Original Type Reported (by NMDP)										
Methodology										

HLA-	A	B	C	DRB1	DQB1
Transplant Center Results					
Date Tested					
Methodology					
Results sent to: National Marrow Donor Program					
By:			Date:		

Section B
To be completed by the National Marrow Donor Program

HLA-	A	B	C	DRB1	DQB1
Retest Results					
Date Tested					
Methodology					
Results sent to: Transplant Center					
By:			Date:		

□ **The discrepancy in typings has been resolved as:**

□ **Registry error** □ **Transplant Center error**

NMDP Representative
Date:

Transplant Center representative
Date:

Clerical Error (give details)	**Technical Error** (give details)