

TRANSPLANT ENGRAFTMENT MONITORING (CHIMERISM TESTING)



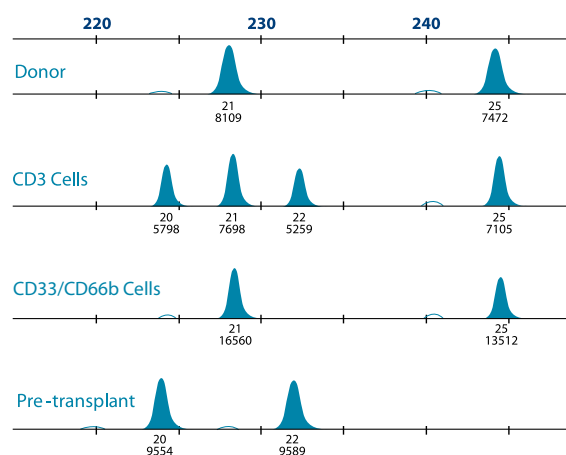
This test monitors the success of a **hematopoietic stem cell transplant** by assessing the relative percentage of the recipient and donor cells in the recipient's post-transplant sample.

Principle of the Test

Chimerism testing is based on detection and comparison of alleles at multiple loci in the donor and recipient after transplantation.

In the example to the right, the pre-transplant patient (bottom) shows two DNA alleles, 20 and 22. The donor (top) has alleles 21 and 25. Samples taken from the patient after transplant (center) show a mixture of both donor and patient alleles in the CD3 cells, indicating chimerism. The percentage of donor cells is reported — in this case the CD3 cells are 57% donor and the CD33/CD66b cells are 100% donor. The progress of a stem cell transplant can be monitored periodically after transplant, aiding in the diagnosis of disease relapse, graft failure, or successful transplant.

Currently, LabCorp routinely uses 16 loci for detecting differences between recipient and donor, and if the recipient and donor have few or no differences based on routine testing, more loci are available for testing. This testing is useful in most donor/recipient pairs except identical twins. The methodology uses polymerase chain reaction (PCR) to amplify short tandem repeats (STR) of DNA. LabCorp's procedure provides a rapid turnaround time and high sensitivity. Cell sorting for post-engraftment monitoring is offered by LabCorp to help physicians evaluate specific cell subpopulations. Cell sorting is available for T cells (CD3), Myeloid Cells (CD33/CD66b) and Natural Killer Cells (CD56). LabCorp can also customize assays for other requested cell subpopulations.



Sample engraftment monitoring results.

Top are donor alleles, the next two are post-transplant CD3 and CD33/CD66b cell fractions, and on the bottom are the recipient's pre-transplant alleles. In this example the CD3 cells are 57% donor and the CD33/CD66b cells are 100% donor.

Test Name	Test Number
Engraftment Monitoring, Pre	168138
Engraftment Monitoring, Post	168120
Cell Sorting T Cells CD3	176059
Chimerism Analysis with CD33/CD66b Cells	176079
Chimerism Analysis with CD56 Cells	176092

For specimen requirements and additional information, please contact HLA customer service at 800-533-1037 or HLACS@labcorp.com.