



SCHOOL OF MEDICINE
INDIANA UNIVERSITY

Department of Medical and Molecular Genetics
Division of Diagnostic Genomics

Laboratory Test Directory

DNA/Chimerism Analysis using STRs, Pre-Transplant samples and initial post

CPT Code(s): 81265, 81267

Service Code (IU Health): 53025615, 53024279

Ordering Recommendation: Chimerism Analysis using STR's is performed to monitor engraftment of donor cells to assess graft success after bone marrow transplantation. It is recommended for monitoring the donor/recipient origin of white blood cells in peripheral blood, marrow, and/or T-cells; differentiate donor cell populations if a patient receives multiple transplants; evaluate the risks of recurrence of disease; or provide supporting diagnosis of graft-versus-host disease (GVHD).

Synonyms: Bone marrow transplantation, STR analysis, STR genotyping, chimerism analysis, bone marrow engraftment analysis, graft-versus-host disease

Methodology: PCR followed by capillary electrophoresis using 15 autosomal short tandem repeat (STR) markers and one gender marker (amelogenin).

Performed: Mon-Fri

Reported: 6-9 days

Specimen Requirements

Patient Preparation: None required for whole blood or DNA

Collect: Blood: Lavender (EDTA) tubes; DNA: Screw cap tube, buccal swab.

Specimen Volume: Blood: 2-6 mL whole blood; DNA: at least 0.55ug of genomic DNA at a concentration of at least 20 ng/ul; buccal swab (Lab provides collection tube)

Storage/Transport: Refrigerated/Room temperature

Unacceptable Conditions: Grossly hemolyzed or clotted

Remarks:



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Stability: 2 weeks refrigerated; 1 month frozen

Reference Interval: by report

Interpretive Data

Interpretation covers: the numbers of informative markers identified for the donor/recipient pair; the range/mean of percentage of recipient and donor cells in the patients.

Analytical sensitivity and specificity: 99%

Limitations: Due to limitation of the current technology, low level (<5%) mixture/mosaicism may not be detected. Although rare, false positive or false negative results may occur. All results should be interpreted in context of clinical findings, relevant history, and other laboratory data.

References:

1. Nollet F, Billiet J, Selleslag D and Criel A. Standardisation of multiplex fluorescent short tandem repeat analysis for chimerism testing. Bone Marrow Transplantation, Volume 28, Number 5: 511-518. 2001.