

ARTICLE INFORMATION

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International Accreditation for High Resolution HLA Typing by NGS Sequence for 11 Loci (HLA-A, B, C, DRB1, DRB3/B4/B5, DQA1, DQB1, DPA1, DPB1)

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ABSTRACT

Introduction: High-resolution HLA typing is required for haplo-identical HLA intrafamilial donors, and for the selection of unrelated donors from international registries and cord blood unit banks. To date, all confirmatory typing was carried out outside the country, since there was no internationally accredited laboratory to carry out these studies. Since 2017, our institution began high-resolution HLA typing by NGS sequence with the Illumina TruSight HLA platform; subsequently, with the CareDx AlloSeqTx platform, obtaining accreditation for NGS typing in 2020. Since 2021, we began analyzes with the Miafora platform (Immucor Corp) and this year we have received international accreditation by the European Federation of Immunogenetics (EFI) for high-resolution HLA analysis by sequence for related intrafamilial donors, and for unrelated donors, both from cord blood units and international donor registries.

Methods: Validation and accreditation of the Miafora HLA 11 Loci platform by NGS was carried out on a MySeq equipment using 10 (retrospective) samples from International Intercomparison tests of the American Society for Histocompatibility and Immunogenetics (ASHI) program and 20 prospective samples from the same program. The agreement of the results obtained from the processed samples with the Intercomparison reports issued by ASHI was evaluated.

Results: From a total of 30 samples analyzed (660 loci), concordance was obtained in the typing in the 30 samples processed. However, a discrepancy in the reporting format was observed at 2 loci (3.3%) because possible ambiguities in the G-Groups or P-Groups were not taken into account (https://hla.alleles.org/alleles/g_groups.html) in the nomenclature used. Corrective actions were carried out to resolve the points related to nomenclature. International Accreditation for High Resolution HLA Typing by NGS Sequence was obtained.

Conclusions: Colombia has the first Immunogenetics laboratory internationally accredited by EFI to perform confirmatory high-resolution typing by NGS sequence. This will allow the different hematopoietic stem cell transplant groups to search for unrelated donors faster and at lower costs than the services they provide in the United States or Europe for these purposes.

REFERENCES

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