GENOTYPE RECONSTRUCTION AND PATERNITY TESTING OF DEAD FATHER

Ana M. Di Lonardo, M. Belen Rodriguez Cardozo, Sergio F. Valente, Andrea Szöcs, Carlos G. Echenique, and Oscar A. Santapá
Banco Nacional de Datos Genéticos, Hospital Dr. C. G. Durand, Buenos Aires, Argentina

Introduction

The BNDG has worked since 1984 in cases of paternity testing. At the end of 70's, human leucocyite antigens (HLA) were the membrane markers most studied and the ones that exhibited a great polymorphism reason why they were used for human identification. At the 80's the molecular biology era began and new technologies were performed to study DNA polymorphism, instead of serological methods. Currently, we can study major histocompatibility complex genes (MHC) Class I and Class II, by molecular techniques. This work shows a paternity case where the genetic information from the deceased father was deduce by diverse genetics markers and show the great importance of some of them.

Materials and methods

DNA was extracted from blood samples of five people who formed the group to study: mother and daughter, and father, mother, brother of alleged deceased father. The brother was studied because he was suspected of being the child's father, too. These genetic markers were investigated: 1.- VNTRs loci: D7S21, D7S22, D12S11, D18S309 (NICE probe system Lifecodes Corporation); 2.- STRs loci: CSF1PO, TPOX, TH01, F13A01, FESFPS, vWA, F13B, LPL, D16S228, D7820, D13S317 (*GenePrint*® STR Promega Corporation); DQA1 locus: LDLR, GYPA, HBGG, D7S8, GC (Reverse Dot Blot AmpliType® PM-DQA1 Pe); 4.- MHC Genes ABDR SSP Unitray Pel Freez).

Results

Twenty-one genetic markers were studied. The VNTRs, STRs, and DQA1 Plymarker results couldn't exclude the deceased man's brother as the father of the child the only locus that did exclude the biological relationship was the F13A01 although this could be a mutation. The study of HMC genes could exclude the brother who didn't share either of the two ABDR haplotypes with the child.

Conclusions

This example shows how informative loci are HLA haplotypes ABDR for exclusion of biological relationship. We consider the study of a large number of genetic markers in cases of genetic reconstruction of corpses.