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Y-filer Kit as a tool for identification of formalin fixed and paraffin wax embedded (FFPE) prostate biopsy

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Tumor tissue specimens obtained for diagnostic can be used as biological material for genetic studies and, in certain circumstances, such as identification of unknown bodies in mass disasters or DNA paternity testing, they are the ultimate DNA available for genetic investigation. Another utility can be to solve suspicions of biopsies mix-up. For genetic investigation of the FFPE tumors, the authenticity of the reference sample is questionable, due to genetic instability and tumor degradation in malignant archived histology samples. The aim of this study was to evaluate the use of Y-STR, a strictly male polymorphism, as tool for the identification of prostate biopsy. Fifty-two biopsies of healthy and tumor prostate obtained from 21 individuals were compared to FTA blood samples. It was utilized Y-filer kit (Applied Biosystems) for the amplification of 10 ng of DNA from biopsies. In 75% of the cases we obtained the whole genetic profile, but in 13 cases, we could genotyping incomplete profile. Considering individual's biopsies, in 39 we obtained complete profile and in the others partial profiles, with no amplification of the large STR, demonstrating that degradation can affect the analysis. However, all the information achieved in biopsies matches with FTA, indicating no occurrence of genetic instability in samples analyzed. In conclusion, FFPE biopsies can be used as reference sample, but Y-filer kit is not capable to solve all of the cases. We are studying the application of Minifilerkit to amplification of the biopsies samples, to help the use of FFPE in forensic investigation. FAPESP/LIM40-LIM55-HC-FMUSP.

Biography

Gattás GJF is the Associated Professor in the Department of Forensic Medicine, Faculty of Medicine, University of Sao Paulo. She is geneticist with post-doc in cytogenetic and molecular biology, Harvard Medical School, Boston, MA, USA, and coordinator of a Missing Kids Program with DNA database at the University, in Sao Paulo, Brazil.

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