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Genes

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Special Issue Reprint

Advanced Research in Forensic Genetics

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This Reprint captures the significant advancements in forensic science driven by the development and application of genetics. While the analysis of STR polymorphisms via capillary electrophoresis remains a standard method for forensic genotyping, this work highlights the gradual integration of complementary assays based on advanced technological platforms.

The focus of this Reprint centers on enhancing the accuracy, speed, and effectiveness of DNA analysis in legal contexts. It addresses key objectives such as improving identification precision for degraded, mixed, or limited biological samples through next-generation sequencing (NGS) and novel biomarkers like microhaplotypes. Furthermore, it explores the applications of NGS in forensic DNA phenotyping to predict externally visible characteristics, biogeographic ancestry, and age, providing critical investigative leads when standard profiling falls short. The volume also examines the growing role of forensic genetics in cause-of-death investigations and post-mortem interval estimation using microRNAs. Finally, it explores probabilistic genotyping and activity level propositions, as well as the dynamics of trace transfer and persistence in court. This Reprint serves as a comprehensive collection of advanced contemporary research in forensic genetics.

