

## COMPARISON AMONG DIFFERENT PROCEDURES FOR DNA EXTRACTION IN FORENSIC THE FIELD

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In this study we used 5 different methods, DNA IQ™ System (Promega), Invisorb, Chelex, QIamp Quiagen and phenol-chloroform treatment to perform DNA extraction from some different forensic samples as cigarette butts, hairs, semen stains, fresh and old bloodstains on different substrates (cotton, denim, wood).

Each sample was extracted in duplicate using each procedure.

DNA extracted from each sample was quantified by the AluQuant™ Human DNA Quantitation System (Promega) and then amplified by Gene Amp 2400 and 9700 Thermal Cyclers using the AmpFISTR® Identifiler™ kit (Applied Biosystems).

PCR products were analyzed by capillary electrophoresis on ABI PRISM® 3100 and 310 Genetic Analyzers (Applied Biosystems) employing ABI softwares (DATA Collection, GeneScan® Analysis, Genotyper® Fragment Analysis).

In particular we evaluated:

- The ability of each method to extract DNA from different samples
- The quantity of human DNA extracted from each sample
- Any potential interference due to the substrate
- The possibility to obtain reliable DNA typing results
- The quality of DNA profiles obtained from the same sample when it is extracted performing all the different procedure above.