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## STR-TYPING OF METHYL VIOLET STAINED FINGERPRINTS ON THE ADHESIVE SIDES OF TAPE

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On a number of crime scenes fingerprints of the offender(s) are left on evidence material, including adhesive tapes. These fingerprints can be enhanced by different techniques including methyl violet staining. Partial fingerprints not suitable for dactyloscopic identification purposes might still be useful for identification by STR-typing. Therefore fingerprints were experimentally planted on various types of adhesive tapes (duct tape, packaging tape, scotch magic tape, foam tape, isolation band and household tape) and visualised by methyl violet staining. Subsequently, methyl violet stained fingerprints were subjected to different DNA-extraction methods (Chelex 5%, QiaAmp, Invisorb Forensic kit I, DNAzol and STOOL kit) followed by PCR amplification and SGM+ DNA-profiling. Full SGM+ DNA-profiles (10 loci and amelogenin, single contributor stains) were obtained in 65.1% of Chelex 5% isolated DNA-extracts and in 61.9% of QiaAmp-isolated DNA extracts. No differences were measured between the different adhesive tape brands. The minimal surface area of a fingerprint required for a full SGM+ profile was determined to be 25 mm2. Next, in 39 case samples DNA was extracted with Chelex 5% followed by SGM+ profiling. In 38% full SGM+ profiles were obtained, in 26% of the case samples partial profiles (7 or less loci) were obtained and in 35% of the case samples none of the STR alleles could be assigned. In 59% of the case samples where all 10 loci (+ amelogenin) could be assigned, at least 2 donors contributed to the sample. In 36 % of the case samples, DNA-profiles satisfied criteria for searching/recording in the DNA-database. In conclusion, STR-typing of methyl violet stained fingerprints can be a valuable additive tool for providing technical evidence for the solution of crimes.