

CHAPPED, PALE LIPS? JUST SHIMMER!

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The aim of this research was to obtain DNA profiles from different types of touch evidence samples such as lipstick, lip gloss, lip shimmer and other similar items. The present research involved objects used by several male and female donors. The surface of each sample which came in direct contact with the lips was swabbed with the tip of a sterile cotton swab. The tip of each swab was cut and extracted using a modified extraction procedure. This modified method of extraction is used when the amount of template DNA is lower than the amount normally needed (approximately 0.3 to 0.5ng/ μ l) to obtain a full STR DNA profile upon amplification. The assay included cell lysis in a buffer containing 0.01% SDS and Proteinase K.

Some of the samples were also extracted with the Qiagen EZ1 DNA Investigator Kit and the BioRobot® EZ1 workstation. This automated instrument and the reagents in the DNA Investigator Kit use magnetic bead technology and a silica-based purification system. These samples were subsequently subjected to the modified extraction procedure. All of the extracted DNA samples were purified and concentrated with a Microcon® 100 device. After the concentration was completed by the filtration method each DNA sample was eluted from the membrane with 10 μ l of the TE-4 buffer.

The eluted DNA was quantified using the Applied Biosystems (AB) Quantifiler™ kit on the AB 7500 Real Time PCR System. The lowest amount of DNA detected from these samples was 0.0009ng/ μ l. Human DNA was also detected from a make-up brush that was used to apply lip gloss on the lips of a female donor. The quantified DNA was amplified using a reduced amplification volume and higher PCR cycle numbers for the AB AmpFISTR® Identifiler™ kit. After amplification, samples were injected on the AB 3130xl Genetic Analyzer to generate DNA profiles.

The data was analyzed using the SoftGenetics GeneMarker® HID Version 1.7 software. Complete STR DNA profiles were observed when the extracted DNA was amplified at 34 cycles. A partial DNA profile was obtained from a sample with less than 0.0009ng/ μ l of DNA. STR DNA profiles obtained from these lipstick sample and similar items were consistent with profiles generated from the donors' reference samples. Obtaining DNA profiles from these types of evidence can help in the investigation of the crime and aid in the identification of a missing person.