

EXTRACTION AND TYPING OF DEOXYRIBONUCLEIC ACID (DNA) FOR TYPING OF STR LOCI FROM SKIN CELLS SHED ON BED SHEET LINENS USING THE POLYMERASE CHAIN REACTION

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DNA typing methods are relied on to identify missing persons when fingerprints, dental x-rays, or direct identification are not available. Alternative sources for known standards often must be considered in these cases. This study evaluated the use of epithelial cells recovered from bed sheets as a potential source for known standards. Nineteen individuals ranging in age from 5 to 80 years old were used as subjects. DNA was extracted from the epithelial cells collected from bed sheets using adhesive tape or vacuum retrieval. The extracted DNA was quantitated using slot blot procedures and typed using Short Tandem Repeat loci. Oral swabs were collected from each subject as known samples for confirmation to the subject genotype. Age, duration of exposure, and body weight were variables evaluated as factors potentially influencing cell shedding and recovery. Exposure intervals, as well as the age of the subject, were found to have an impact on the quantity of DNA recovered from the sheets in this study. Success with genotyping procedures were sporadic, but demonstrated that shed epithelial cells offer a potential source of cellular material for DNA typing methods when more conventional known standards are not available.