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Human Skin Identification Using a Specific mRNA Marker at Different Storage Durations

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Abstract : The detection of human skin through mRNA-based profiling is a very useful tool for forensic investigations. The aim of this study was definitive identification of human skin at different time intervals using an mRNA marker late cornified envelope gene 1C. Ten middle-aged healthy volunteers of both sexes were recruited for this study. Skin samples controlled with blood samples were taken from the candidates to test for the presence of our targeted mRNA marker. Samples were kept at dry dark conditions to be tested at different time intervals (24 hours, one week, three weeks and four weeks) for detection and relative quantification of the targeted marker by RT PCR. The targeted marker could not be detected in blood samples. The targeted marker showed the highest mean value after 24 hours (11.90 ± 2.42) and the lowest mean value (7.56 ± 2.56) after three weeks. No marker could be detected at four weeks. This study verified the high specificity and sensitivity of mRNA marker in the skin at different storage times up to three weeks under the study conditions.

Keywords : human skin, late cornified envelope gene 1C, mRNA marker, time intervals
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