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Impact of One-Step Luminescent Cyanoacrylate Treatment on Subsequent DNA Analysis

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Highlights

- Impact of one-step luminescent cyanoacrylate fuming techniques on DNA analysis
- Comparison of the effect with that of conventional cyanoacrylate fuming techniques
- DNA still recoverable and detectable following each of the treatments
- Some degree of DNA degradation after all treatments evaluated

Abstract

Fingermarks can be exploited for both their ridge detail and touch DNA. One-step luminescent cyanoacrylate (CA) fuming techniques used for fingermark enhancement, such as PolyCyano UV (Foster+Freeman Ltd) and Lumicyano™ (Crime Science technology), claim to be compatible with DNA analysis as they reduce the need for post-staining to increase contrast of the developed fingermark. The aim of this study was to determine the impact that these one-step luminescent cyanoacrylates have on DNA analysis and how they compare to conventional CA techniques. Four donors each deposited five sets of natural fingermarks, to which, a known amount of washed saliva cells was dispensed onto half of each set of fingermarks. Each set was treated with either a conventional CA technique or a one-step luminescent CA technique prior to collection and processing of DNA, with one set left as a non-fumed control. It was found that DNA was still recoverable and detectable following each of the treatments.