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Forensic Proteomics of Body Fluids: A paradigm shift from classical examinations to advanced technology

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ABSTRACT

Identification of body fluid is a key component in the forensic scientists' contrivance box and has been carried out both at the crime scene and in the laboratory for many years. Historically, methods relied on (bio) chemical-based tests, many of which lacked specificity. In this review based approach, current technologies for identifying body fluids are described including the use of RNA (mRNA and miRNA), epigenetics, spectroscopic techniques such as Raman spectroscopy and micro-spectrophotometry, biosensors, and immunochromatographic methods which are outlined alongside their strengths and weaknesses. The potential for new insights into the identification of cells from new technologies such as massively parallel sequencing is explored.

Keywords: Proteomics, Crime Scene, Body Fluids, DNA, Identification