

**Mass spectrometry-based forensic “Omics” in direct identification of body fluid protein markers**

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Body fluids such as blood, seminal fluid, urine or saliva are very important in the investigation of crimes against the person such as murder and rape. Whereas DNA profiling is extremely reliable in establishing from whom the body fluid originated, tests to positively identify the type of fluid involved (e.g., whether it is semen or saliva or a mixture of them) are much less refined and can be ambiguous. Our recently submitted article describes a streamlined and simplified direct approach for the identification of body fluids using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-ToF-MS) that avoids pre-fractionation or isolation of proteins. Microliter quantities (or less) of neat fluids or their extracts or deposits of them *in situ* on tufts of fibers plucked from evidence (such as garments) can be analysed directly and quickly. Here we describe extensions of our direct approach in regards to the examination of other fluids, both human and non-human, and explore its combination with analysis of miRNA.

**Biography**

Sathisha Kamanna is pursuing 3<sup>rd</sup> year PhD at Flinders University, South Australia. His PhD project is “Mass Spectrometry-based proteomics applications in forensic body fluids analysis”. He has 7 years work experience in biological mass spectrometry and is involved in the forensic analysis of body fluids and identification of protein/miRNA biomarkers using mass spectrometry based analytical techniques. He has 8 international publications (author/co-author) in reputed journals.

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