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Application of Biosensors in Forensic Analysis

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Abstract : Biosensors in forensic analysis are ideal biological tools that can be used for rapid and sensitive initial screening and testing to detect of suspicious components like biological and chemical agent in crime scenes. The wide use of different biomolecules such as proteins, nucleic acids, microorganisms, antibodies and enzymes makes it possible. These biosensors have great advantages such as rapidity, little sample manipulation and high sensitivity, also Because of their stability, specificity and low cost they have become a very important tool to Forensic analysis and detection of crime. In crime scenes different substances such as rape samples, Semen, saliva fingerprints and blood samples, act as a detecting elements for biosensors. On the other hand, successful fluid recovery via biosensor has the propensity to yield a highly valuable source of genetic material, which is important in finding the suspect. Although current biological fluid testing techniques are impaired for identification of body fluids. But these methods have disadvantages. For example if they are to be used simultaneously, Often give false positive result. These limitations can negatively result the output of a case through missed or misinterpreted evidence. The use of biosensor enable criminal researchers the highly sensitive and non-destructive detection of biological fluid through interaction with several fluid-endogenous and other biological and chemical contamination at the crime scene. For this reason, using of the biosensors for detecting the biological fluid found at the crime scenes which play an important role in identifying the suspect and solving the criminal.

Keywords : biosensors, forensic analysis, biological fluid, crime detection
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