

DNA Theft, DNA Fabrication: Serious Challenges in Ethical Practice of DNA



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Abstract

The advances in the genetic science and acceptance of DNA as universal genetic material revolutionized the scientific echelon. The advancement in DNA technology also revolutionized the judiciary globally. Before adoption of any scientific advancement, it must be insured that all the chances of being misuse of technology against the public have been minimized. DNA profile is a conclusive tool to establish the personal identity. In the judiciary across the world, DNA evidence is considered as admissible evidence. It is an extensive tool to find someone's guilt or to prove innocence, as well as, it forms the basis for appeal. In the practicing of the DNA, there are many serious ethical issues that must be put in consideration while accepting DNA evidence. Falsely implanting the DNA at scene of occurrence and stealing someone's DNA are the major issues. DNA data base can be also abused for the DNA forgery. Therefore, the validity and the acceptability of evidence must be established to prevent false prosecution of innocent. This article involves the communication over these emerging issues.

Keywords: Genetics; DNA; Personal Identity; DNA Theft; Scene of Occurrence; DNA Database

Introduction

The discovery of DNA introduced new possibilities in the genetic science. This is the universal genetic material; everyone possesses unique DNA profile as it can be conclusive in determining the identity of an individual. This fact made it widely acceptable in judiciary throughout the globe [1,2]. Since the discovery of DNA, many technological advances introduced to make it more competent and effective. DNA profiling was started with RFLP technique and at present, 1 ng of DNA is used for profiling and highly polymorphic STR [3]. markers are being used. This uniqueness of this DNA evidence made this as "golden standard" for the forensic investigation [4]. With the introduction of DNA profiling in the court, since 1985, it provided scientific proof in various civil as well as criminal cases. With the passage of time it has undergone technological advancements and has become more specific. Apart from, there are many serious ethical challenges in practicing of DNA and these issues put emphasis on validation of DNA before accepting it as evidence. Unfortunately, these issues are not so far disused by any solicitor, scholar, scientists and the members of law making authority [5].

Challenges

Intentional external insertion of DNA in the scene of occurrence is followed by "DNA theft, forge or fabricated DNA". This is an extremely serious ethical issue and must be put in consideration while implying for the law [5,6]. Few researchers have thrown light on this issue still it is found not to be discussed

among the legal scholars, DNA forensic experts etc. DNA profiling facilitates the personal identification with absolute certainty by any biological evidence present at crime scene. This is a common belief that such evidences present at crime scene have been originated from the genuine source. Few researchers demonstrated breach of this common belief. In the literature, some approaches have been reported that common methods can generate a particular DNA profile from biological evidences as well as there are some recent technological advances that can be also are used for the same. This is a point to be noted that no technique till date can identify the artificial origin of sample in such type of cases [6]. Frumkin et al. [7] demonstrated an ease to develop a synthesized DNA *in vitro* by using simple PCR technology.

For, this natural DNA sample was collected, genotyped and then compared with artificially generated profile. Both the profiles were compared and were indistinguishable. In this classic work, it is revealed that DNA sample can be forged, artificially synthesized and falsely implied on the crime scene. This DNA fabrication puts a question on the reliability of the DNA evidence. Currently; DNA theft is not so far difficult. As the evolution in the scientific disciplines, it is very easy to get specimen without letting that man know. Technological advances enabled the extraction of DNA even from the fingerprints. Frumkin et al. [7] obtained the DNA from the objects of daily

use such as cigarette butt and tried to differentiate between genuine and synthesized one samples. This approach [6,7]. Also threw light on the illicit use of DNA database because for the development of the artificial DNA, sample is not always required. Just a profile obtained from the database can make it possible and thus even emphasis the ethical issues of DNA database too. Additionally, it was found that DNA fabrication does not require a personal computer with internet; it can be ordered online [6]. In various countries, DNA theft is not an offence and deemed not to be discussed. But ignoring its future perspective is meaningless. Since falsification in forensics has been reported and discussed as ethical problem, similarly the possibilities of DNA fabrication in future cannot be ignored, while few cases have been reported from the western countries [5]. United Kingdom has legislated DNA fabrication as crime [5,8].

Need of validation in legislative perspective

Applying the scientific advances to the law requires the assurance that the probability of the misuse has been reduced [1]. DNA evidence is the best to prove innocence or guilt of a accused. Therefore, it must be beyond reasonable doubt [4]. This issue of DNA fabrication, DNA theft glorifies the chances of misuse of the technology as well of DNA Databank. In India there is no specific legislation for the practice of the DNA profiling. Recently, a draft of Human DNA Profiling Bill 2017 has been submitted by law commission of India. This bill emphasizes on the need of national database [9]. Therefore, the issue of the security of information and the prevention of abuse must be outlined. In Indian legislative perspective, the concepts like DNA fabrication and DNA theft etc. seems to be untouched. A national data base was developed by the U.K. for the first time [8]. In the databank system, there are many ethical considerations [10]. Those have been reported by Wallace [11]. And Corner [12].

Conclusion

Current scenario is seeking the classic and specific guideline for the ethical practice of the DNA profiling. A specified guideline decreases the chances of the falsification and improves the authenticity of the evidence as well as, new technological

advances are required to bring at new maxims for the public welfare and the betterment of the criminal justice system. As discussed above, artificial and natural DNA is indistinguishable; therefore it must be taken into consideration. The DNA evidence is considered as most authentic evidence in the court of law across the globe. At the first site, scientific technology attempted the forgery of the DNA therefore it is too necessary to take consideration of these issues among the legal and scientific fraternity. This is the demand of current scenario for the credibility of the DNA evidence to be maintained.

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