

## DNA FINGERPRINTING: EVIDENTIARY VALUE AND DIFFICULTY IN RELIABILITY

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### Abstract:

DNA is associate abbreviation of Deoxyribonucleic Acid. It's associate organic substance that is found in each living cell and provides a private a private genetic blueprint. It is extracted from blood, saliva, semen, hair, bones and different organs of the body. Deoxyribonucleic acid technique currently enjoys legitimacy everywhere the planet. The technique helps the identification of criminals on scientific lines but the technique needs tutelage and caution. Deoxyribonucleic acid is basically created from amino acids and it's matched with therefore known as bases which give the key to crucial the genetic blueprint. Worldwide it's established that the results of deoxyribonucleic acid take a look at, if conducted in conformity with fashionable and latest protocol on the topic is scientifically correct. Each and every cell within the material body incorporates a sample of deoxyribonucleic acid. Presently, there's no concrete law, specific law to control the acceptableness of forensic technique but the courts of law derives the validity of forensic technique from numerous provisions of CRPC and evidence Act. There's

no specific provision both in Indian evidence Act, 1872 and Code of Criminal Procedure, 1973 to manage science, technology and forensic science problems and due to lack of getting any such provision, investigating officers got to face difficulty in grouping evidences that involves fashionable mechanism to prove the defendant person guilty. This paper examines the importance of DNA fingerprinting and also the misconception surrounding it because of its exclusion in Indian evidence and also in the Criminal Procedure Code.

**Keywords:** Deoxyribonucleic acid (DNA), Indian Evidence Act, Criminal Procedure Code, DNA test, evidentiary value.

### **Introduction:**

Genetic revolution has caused tremendous changes in our life. With the completion of human order project, DNA is quite useful in distinctive specific diseases with varied degree of accuracy and specificity. At the same time these measure equally useful when making a decision numerous civil and criminal cases. Deoxyribonucleic acid technology, as a contemporary tool of forensic science is that the by-product of recent biological science. Current gold standards of evidence provided by forensic science is deoxyribonucleic acid testing. DNA fingerprinting technology could be a new technique of distinctive someone on the idea of genes as no persons have identical sub-genetic structure. Deoxyribonucleic acid could be a valuable tool utilized by forensic scientists that may fully prove the innocent captive and convict the guilty. Forensic deoxyribonucleic acid technology that once and for all eliminates a suspect is therefore radical and credible that it persuasively meets the very-high thresholds of evidence needed by a court to free a factually innocent person. The deoxyribonucleic acid evidence within the type of secretion, blood, skin tissues, hair and humour is commonly recovered from crime scenes and is crucial tool for investigation of violent crimes because the justice delivery system is innovatively adopting the deoxyribonucleic acid tests, there's associate imperative would like for a detailed check into the varied aspects about deoxyribonucleic acid fingerprinting tests. The sampling procedure is of a lot of concern; owing to the result of contamination, value of difficult and backlog of the laboratories. The adoption of this method has raised numerous constitutional problems. The decisiveness of those tests has raised the question of post conviction discussion. The foremost involved issue with the DNA fingerprinting take a look at is expounded to the

acceptableness of those tests as evidence within the justice delivery system and typically results in misconception in delivering justice because of the shortage of specific provisions Evidence Act and also the Criminal Procedure Code. The main aim of this paper is to find the evidentiary value of DNA under the Indian Evidence Act and the errors in grouping fingerprints that results in the miscarriage of justice.

**Hypothesis:**

DNA fingerprinting isn't completely reliable and also the fault surrounding it makes it untrustworthy.

**Materials and Methods:**

The present analysis paper is analytical, descriptive and supported non-empirical study. Qualitative knowledge was generated to check the analysis hypothesis. The study was conducted on secondary sources like books, journals, e-sources, theories and relevant provision with determined case laws.

**What is DNA?**

DNA was 1st ascertained by a German chemist named Frederich Miescher in 1869. Except for a few years, researchers didn't understand the importance of this molecule. It absolutely was not till 1953 that James Dewey Watson, biochemist, biochemist and Rosalind Franklin found out the structure of deoxyribonucleic acid, a spiral, that they accomplished might carry biological data. Franklin wasn't enclosed within any award, though her work was integral to the analysis. "The test for the admissibility of scientific technique enunciated in Fyre v. United States has been the most frequently invoked one in American case law." [1](cogitasocietatis n.d.) "DNA is the abbreviation of Deoxyribonucleic Acid. It's a basic genetic material in all human body cells. It's present in white corpuscles and not in red corpuscles and the admissibility of the DNA evidence before the court always depends on its accurate and proper collection." [2](Singh 2017) This could be an advanced molecule that contains all of the knowledge necessary to create associated maintain an organism. All living things have deoxyribonucleic acid inside their cells. In fact, nearly each cell in a very multicellular organism possesses the total set of deoxyribonucleic acid needed for that organism. Deoxyribonucleic acid is basically created from amino alkanoic acid and it's matched with the therefore known as bases to urge the genetic blueprint. Thus, deoxyribonucleic acid could be a double stranded long molecule and feels like a

twisted ladder or spiral. Every 2 strands could be a long sequence of nucleotides or individual units fabricated from a phosphate molecule, a sugar molecule known as saccharine. There square measure four varieties of nitrogen-containing regions known as bases. The order of those four bases forms the ordination, that square measure our directions forever. Each length of deoxyribonucleic acid that codes for a particular super molecule is termed a factor. For example, one factor codes for the super molecule endocrine, the secretion that helps management levels of sugar within the blood. Humans have around millions genes, though estimates vary. The outstanding deoxyribonucleic acid is believed to be concerned in control transcription and translation. “The first murder case solved by DNA profiling was prosecuted in English midlands in the mid 1980s in the case where a 15 year old girl was raped and murdered and the accused was convicted.”[3]

#### **Procedure for Collecting Deoxyribonucleic Evidence:**

As technology advances, forensic scientist’s square measure able to analyze smaller and smaller biological samples to develop a deoxyribonucleic acid profile. As an example, if someone touched associate object or weapon, skin cells might are left behind. This low-level deoxyribonucleic acid is usually mentioned as “touch DNA”. It will even be collected from a victim’s skin or bruises wherever they were handled roughly. Low-level deoxyribonucleic acid samples is also useful once examining evidence wherever it might be tough to retrieve fingerprints—such as rough-textured surfaces on gun handles or automobile dashboards. However, not all jurisdictions have the potential to method this evidence.

To compare the victim’s or suspect’s deoxyribonucleic acid profile to the recovered crime-scene deoxyribonucleic acid, the laboratory can got to have their familiar biological samples obtainable for a side-by-side comparison. These familiar samples square measure known as reference samples. In some jurisdictions, a deoxyribonucleic acid sample is habitually taken from associate arrestee throughout the method of booking and procedure. However, this is often associate evolving space of law and states vary in their laws governing the gathering of deoxyribonucleic acid from arrestees. “Forensic investigators will analyze the biological samples to get a DNA profile of the individual(s) that the samples came from. There are also databases of DNA profiles that investigators can use to identify suspects by comparing the database information to the DNA profile obtained from the biological evidence.”[4](Anon n.d.)

The storage of biological evidence for deoxyribonucleic acid testing includes the following. Biological evidence ought to be allowed to air dry before packaging however ideally, it ought to be adorned up in a very clean dry area, away from direct daylight, Biological evidence ought to be packaged in paper baggage and paper breaths, and permits the item of evidence to remain dry. Plastic baggage doesn't breath, and might cause wetness and mildew to grow on the evidence, that successively will have a negative result on deoxyribonucleic acid testing. Biological evidence ought to be keeping underneath laboratory conditions as obtainable resources allow - or in a very cool, dry climate, freed from wetness. Place liquid things in assortment tubes and refrigerate.

It is necessary that biological evidence be properly collected and preserved because it will simply degrade once exposed to heat or wetness. Storing evidence in cool environments is preferred; but, analysis has shown that temperature conditions square measure appropriate for storing dried stains as long because the wetness is controlled. Liquid samples ought to be transported in cold or insulated containers.

**Evidentiary value of DNA and comparison of investigation procedure before and after the amendment of the Act:**

“The position of India is that there is no specific law on subject of DNA in evidence act, but DNA testing has got legal validity in 1989.”[5] “The introduction of the deoxyribonucleic acid technology is being gave the impression to create serious challenge to some legal and practical rights of a private corresponding to Right to privacy, Right against Self-incrimination.”[6](Anon n.d.) And this is often the foremost necessary reason why courts typically square measure reluctant in accepting the evidence supported deoxyribonucleic acid technology. Right to Privacy has been enclosed underneath Right to Life and private liberty or Article 21 of the Indian Constitution. Article 20(3) provides Right against Self- accusation that protects associate defendant person in criminal cases from providing evidences against him or evidence which may build him guilty. It's not however been enclosed within the evidence Act. “The Indian Evidence (Amendment) Bill, 2003 has been proposed on the recommendation of the 185th Law Commission Report. The bill provides for DNA tests in paternity dispute, but it is not suffice. It's thus, left to the discretion of the judges whether or not the deoxyribonucleic acid tests underneath Section 45 of the Indian evidence Act is to be accepted or not.”[7](Anon n.d.) Section 45 talks regarding opinion of experts and also the deoxyribonucleic acid evidence square

measure enclosed underneath this class owing to the absence of specific provision. There is no precise definition for expert. "The only definition of an expert available in the Act is that he is a person especially skilled in the subject on which he testifies, though the section does not refer to any particular attainment, standard of study or experience, which would qualify a person to give evidence as an expert." [8]

Deoxyribonucleic acid analysis has become a standard type of evidence in criminal trials. It's conjointly utilized in civil legal proceeding, notably in cases involving the determination of Paternity of Identity. "The rules of discovery determine the circumstances under which a defendant can compel the production of such records. Because many complex technical, scientific, and statistical issues affect the use of DNA evidence, there will be cases in which defendants will contend that without comprehensive and detailed information, they are unable to prepare for trial adequately." [9] (National Research Council (US) Committee on DNA Forensic Science: An Update 1996)

"The most concerned issue with the DNA fingerprinting test is related to admissibility of this test as evidence in the justice delivering system." [10] (National Research Council (US) Committee on DNA Forensic Science: An Update 1996; Anon n.d.) The acceptableness of the deoxyribonucleic acid evidence before the court perpetually depends on its correct and correct assortment, preservation and documentation which may satisfy the court that the evidence that has been place ahead it's reliable. There's no specific legislation that is gift in India that may give specific pointers to the work agencies and also the court, and also the procedure to be adopted within the cases involving deoxyribonucleic acid as its evidence. Moreover, some provisions permit examination of person defendant of rape by caregiver and also the scrutiny of the rape victim severally. "The fact is that the Indian system for criminal forensic investigations and policing today is riddled with inefficiencies, archaic rules and practices, lack of professionalism and even integrity, and an absence of a top-down approach for plan formulation and implementation which is most necessary in the present situation." [11] (Anon n.d.) Judges don't deny the scientific accuracy and decisiveness of deoxyribonucleic acid testing, however in some cases they are doing not admit these evidences on the bottom of legal or constitutional prohibition and typically the general public policy would like of this evidence is most vital within the criminal cases, civil cases, and within the maintenance continuing within the criminal courts. However it's been command by the Supreme Court on many occasions that Right to Life

and private Liberty isn't associate absolute Right. "While low adoption rate can be attributed to poor infrastructure and lack of policy push, the root of the problem is knowledge gaps and misconceptions about DNA forensics across all levels of our society." [12] (Line 2017)

There is associate imperative got to incorporate some provisions within the Indian evidence Act, 1872, and also the Code of Criminal Procedure, 1973, to manage science and technology problems because of lack of such provision, investigating officers face bother in grouping the samples. One of the problems in DNA testing is that "a partial match creates the chance that the missing portion may yield a result that would exclude the suspect." [13] (Anon n.d.)

#### **Comparison:**

Before the 2005 modification act of the Criminal Procedure Code, the misconception close the gathering of deoxyribonucleic acid was a lot of higher. This is often chiefly as a result of the work officers weren't given a correct pointers and assortment procedure relating to the deoxyribonucleic acid evidence. Since then it became tough for the judiciary to pronounce judgements supported the deoxyribonucleic acid evidence alone. Back then, it absolutely was largely thought-about as confirmatory evidence.

After the Crpc modification Act, 2005, The CrPC (Amendment) Act, 2005, has brought 2 new sections that authorise the investigating officer to gather deoxyribonucleic acid sample from the body of the defendant and also the victim with the assistance of caregiver. This amendment Act helps to remove the fallacy around the collection of DNA evidence. Thus, Section 53 of the Code of Criminal Procedure, 1973, authorises a officer to collect DNA evidence for the aim of the investigation. Yet, the fallacy surrounding the collection of DNA evidence is not fully removed.

Thus, "there is an urgent need to incorporate some provisions in the Indian Evidence Act, 1872, and the Code of Criminal Procedure, 1973, to manage science and technology issues." [14] (Anon 2017)

#### **Case laws:**

State of U.P through C.B.I v. Amarmani Tripathi [15], during this case, Amarmani Tripathi was alleged for murder of Madhumita Shukla however he argued that there has not been any relation along with her however when deoxyribonucleic acid testing it absolutely was proved that there was a bootleg relation between them and also the kid in Madhumits's female internal

reproductive organ was of Amarmani. The court relied upon deoxyribonucleic acid take a look at associated accepted it as an evidence.

“The constitutionality in taking fingerprints was challenged in the case of State of Bombay vs. Kathi Kalu Oghad that involves Article 20(3) of the Constitution. From the decision of this case it appears that there will be no constitutional restriction on the collection of samples for DNA analysis.”[16](Anon n.d.)

Arushi Murder Case[17]: there's a noted case named Arushi Murder case that has been a problem for media and also the work agency is taking facilitate of deoxyribonucleic acid take a look at for locating out the reality. There was a significant blunder created by the work agency in grouping the evidence

In Raju Namdev Patil case,[18] A case was lodged underneath Sec. 302,307 associated 320 of IPC however because of shortage of evidence the deoxyribonucleic acid take a look at of defendant was conducted and it absolutely was matched with the blood samples that were found at the place of incidence and ultimately the court accepted it as an evidence.

In Sharda v. Dharmpal[19] the Supreme Court took a really positive read relating to importance in addition as acceptableness of deoxyribonucleic acid evidence in marital status cases. The Supreme Court unconditionally ascertained that; a marital status court has the facility to order someone to bear medical take a look at. Passing of such associate order by the court wouldn't be in violation of the correct to private liberty underneath Article twenty one of the Indian Constitution.

M.V. Mahesh v. State of state[20], the Court clean-handed the defendant, one amongst the grounds being that the requisite quantity of deoxyribonucleic acid of high mass wasn't gift therefore on build the take a look at results sufficiently conclusive and correct. The Court any went on to mention that the deoxyribonucleic acid take a look at wasn't a fool evidence one and conjointly commented on the actual fact that there have been no national standards set or established for deoxyribonucleic acid testing in India.

### **Recommendation**

The researcher suggests the following to improve the effectiveness of DNA evidence,

- The procedures in forensic laboratory shall be regulated.
- A commission shall be formed to control the procedure relating to the gathering of deoxyribonucleic acid evidence and observance its effectiveness.



- A particular legislation shall be created because the absence of statutory recognition makes the deoxyribonucleic acid evidence unreliable based on the recommendation of the commission.
- Proper training shall be given to investigating authority regarding the collection of DNA evidences.

### **Conclusion**

DNA fingerprinting is rising as recognizable evidence for establishing guilt or innocence. It is recently used in many cases as it helps us to find the accused without any delay. But its acceptance is quite questionable due to the unavailability of specific provision incorporated in both the Indian Evidence Act and the Criminal procedure Code. The acceptableness of the deoxyribonucleic acid evidence before the court perpetually depends on its correct and correct assortment, preservation and documentation which may satisfy the court that the evidence that has been place ahead it's reliable. There's no specific legislation in India that may give specific pointers to the investigating officers and also the court, and also the procedure to be adopted within the cases involving deoxyribonucleic acid as its evidence. Moreover, some provisions permit examination of person defendant of rape by caregiver and also the scrutiny of the rape victim severally. However the acceptableness of those evidences has remained in a very state of doubt because the opinion of the Supreme Court and high courts in numerous choices remained conflicting. Judges don't deny the scientific accuracy and decisiveness of deoxyribonucleic acid testing, however in some cases, they are doing not admit this evidence on the bottom of legal or constitutional prohibition and, sometimes, the general public policy. By implementation of the suggestions given above, the evidentiary value of DNA will be improved. Thus, a specific provision is necessary to solve the issues surrounding the applicability of DNA and reliability of DNA as conclusive evidence.

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