
ANALYSIS AND USE OF DNA EVIDENCE BY INDIAN COURTS IN CRIMINAL MATTERS

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ABSTRACT

Scientific evidence, particularly DNA profiling, has become an indispensable tool in modern legal proceedings for both criminal investigations and civil disputes. By utilizing advanced biochemical techniques to extract and analyze unique genetic compositions, DNA testing offers high scientific precision to accurately identify the guilty and exonerate the wrongfully convicted. Within the Indian criminal justice system, the integration and increasing judicial reliance on DNA evidence mark a significant milestone in forensic adjudicatory practices. Indian courts have continually validated its strong evidentiary value, provided the biological samples are collected, preserved, and analyzed according to established scientific protocols. The paper studies the analyse and approach of Indian courts regarding admission and use of that DNA evidence and in light of principles of criminal law, justice and the right to a fair trial. It examines the cautions adopted by Indian courts while scrutinizing DNA expert testimony and extent for which corroboration by other evidentiary materials is needed for ensuring a holistic, balanced, and fair pursuit of justice.

INTRODUCTION

Scientific evidence encompasses in its domain science, such as physics, chemistry and biology. Opinions are gathered from persons with scientific, technical or other specialized knowledge, whose skill, experience, training or education may assist the Court to understand the evidence or determine the fact in issue.¹ One of such science is analysis of DNA. DNA profiling holds a very crucial place in investigation and adjudication of criminal matters where the offence against body or evidence relating to biological samples are analysed.

DNA which stands for Deoxyribonucleic Acid serves as the fundamental genetic material found in every cell of the human body, with the exception of red blood cells. It is responsible for encoding genetic information in humans. DNA is characterized as a complex molecule featuring a double helix configuration, akin to a twisted ladder. The structure of DNA plays a crucial role in shaping human traits, behaviours, and physical attributes. In forensic science, DNA profiles, which are intricate numerical representations of an individual's genetic composition, are utilized for various purposes.

The procedure of DNA profiling commences with the extraction of DNA from samples to be analysed. Thereafter specific enzymes are utilized to cleave the DNA into shorter segments. These resulting fragments are then organized by size through a technique known as electrophoresis. This method entails placing the fragments within a gel and applying an electric current to propel them along a designated path through the gel. Fragments with lower molecular weights migrate further than their heavier counterparts. The resulting pattern is subsequently transferred from the gel to a membrane. Radioactive DNA probes, sourced from different locations, are introduced to bind with the sequences of particular interest within the sample DNA. Following the removal of any excess DNA probe, an X-ray film is positioned over the membrane to capture the banding pattern, resulting in an autoradiograph that can be photographed. In similar way the two different DNA profiles can be analyzed for comparison. The two DNA profiles can then be determined to either correspond or not.

DNA testing has ability to acquit the wrongly convicted and also to identify the guilty. It can potentially improve criminal justice system as well as investigation practices.² Further its use is relevant in certain civil matters like adultery and disputed paternity. Biological research and

¹ In Reference vs Vinod @ Rahul Chouhatha, Criminal Reference No. 01 of 2018 [High court of Madhya Pradesh]

² District Attorney's Office for the Third Judicial District et al. v. William G. Osborne

its advancements in recent time have standardized the results of forensic science and significantly aided in improvement of certain aspects of justice system. Indian courts have shown substantial reliance on DNA evidence in recent time.

Objectives of research:

1. To evaluate the admissibility and evidentiary weight of DNA profiling within Indian jurisprudence, specifically assessing its scientific validity and procedural efficacy in advancing accurate criminal adjudications.
2. To analyze the judicial limitations and corroborative safeguards imposed upon DNA evidence by Indian courts.

INDIAN LAW AND SCIENTIFIC EXPERT EVIDENCE

If matters concern sciences courts usually apply for the assistance of experts and consider their opinion as a thing worthy of approbation. The judgment of Lord Mansfield in *'Folkes'* recognised that when question relies on explanation of scientific phenomenon, the evidence of those who understand matter of such science is relevant and reliable as compared to any other person.³ In case where matter of skill or science is required for proper adjudication, it is proper for court to take assistance of those, particularly acquainted with it either from their professions or pursuit.⁴

Bhartiya Sakshya Adhiniyam⁵ provides for relevancy of the expert opinion under section 39.⁶ It reads as follows:

“(1) When the Court has to form an opinion upon a point of foreign law or of science or art, or any other field, or as to identity of handwriting or finger impressions, the opinions upon that point of persons specially skilled in such foreign law, science or art, or any other field, or in questions as to identity of handwriting or finger impressions are relevant facts and such persons are called experts.

³ *Folkes v. Chadd*, (1782) 3 Doug KB 157, <https://vlex.co.uk/vid/folkes-v-chadd-802866853>

⁴ *Ibid.*

⁵ Act no. 47/2023

⁶ Analogous provision- Section 45 of Indian Evidence Act, 1872.

(2) When in a proceeding, the court has to form an opinion on any matter relating to any information transmitted or stored in any computer resource or any other electronic or digital form, the opinion of the Examiner of Electronic Evidence referred to in section 79A of the Information Technology Act, 2000, is a relevant fact. For the purposes of this sub-section, an Examiner of Electronic Evidence shall be an expert."

As per the provision an expert is someone who possesses special skills. The domains of accepting opinion of an expert extend widely to multiple subject matters.

Reasons for acknowledging the expert evidence

Irrefutably, the evidence of an expert is admissible in terms of Section 45 of 'the Indian Evidence Act, 1872'⁷ (as was then enforced).⁸ It is recognised that "Courts must and do accept this kind of knowledge from scientific men because by not doing so would be to ignore the accepted methods of professional work and to insist on finical and impossible standards."⁹ The value of expert witnesses lies in that specialized knowledge that they apply in forming such opinions and thereby draw inferences on facts before them.¹⁰ On the basis of such knowledge, experts provide a perspective that relies upon an experience which is not possessed by the judge.¹¹ This often involves expert witnesses to rely on the reported procedure, methodologies and data of other scientists and by perusing their reports in relevant books and journals.¹²

Role of expert

An expert should only speak on questions of fact and not on questions of law, only consider strength of a piece of evidence supporting a certain hypothesis and not the probability of use of that hypothesis is given case, and confine within his area of expertise.¹³

Justice Cresswell¹⁴ summarised roles which an expert must exercise by stating that an expert

⁷ Now section 39(1) Bharetiya Sakshy Adhiniyam

⁸ Pantangi Balarama Venkata Ganesh v. State of Andhra Pradesh

⁹ A Treatise on the System of Evidence in Trials at Common Law § 665 at 762-763, pg 763 (1904)

¹⁰ Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 597 (1993)

¹¹ Kumho Tire Co. v. Carmichael, 526 U.S. 137, 149 (1999)

¹² John Henry Wigmore, A Treatise on the System of Evidence in Trials at Common Law § 665 at 762-763 (1904)

¹³ Lena Wahlberg, Christian Dahlman, Faculty of Law, Lund University, The Swedish Foundation for Humanities and Social Sciences (grant M14:0139:11), and Torsten Söderbergs stiftelse (grant R6/18), <https://ssrn.com/abstract=3758820>

¹⁴ Ikarian Referee case

opinion must not be bias and influenced from the facts and situations revolving around the case. An independent opinion and not an advocacy is required from the part of expert witness. Statement of facts or grounds of opinion should also involve the statement of those facts which exist in his examination of questioned matter in his consideration are contrary to his conclusion arrived. Any subject or question which is beyond his expertise should be clearly stated before the court.¹⁵ Additionally it was elaborated that, details of academic and experience which is relevant to adjudge the qualification as an expert should be stated by the person giving opinion. Statement about question on which opinion was sought, facts, contents of the material provided for examination should be clearly stated. Details about procedure and methodology should be stated or proved in courts. In case where assistance is required the relevant literature should be provided.¹⁶

DNA PROFILING AND EXPERT EVIDENCE IN CRIMINAL CASES: LEGISLATIVE FRAMEWORK IN INDIA

Application of DNA Profiling in criminal cases in India

Court encounter use of DNA evidence in various aspects and the result of a genuine DNA test is said to be scientifically accurate.¹⁷ Prosecution must necessarily sought for DNA test under section 53A¹⁸ Cr.P.C. for offence under Section 366¹⁹ and 376(2)(g)²⁰ of the Indian Penal Code to prove its case against the accused.²¹ DNA profiling can be used to match blood found on the alleged weapon and victim to determine whether or not the said weapon had been used for injuring the victim.²² Under Section 164A²³ of Cr.P.C., proper description of sample taken from the person of the woman for the purpose of DNA profiling is required.²⁴ DNA evidence forms an important aspect of identification in offences against body. When a perpetrator leaves biological evidence, such as blood or semen, at a crime scene, it may be feasible to isolate adequate DNA fragments from that evidence to facilitate a comparison with DNA obtained

¹⁵ National Justice Cia Naviera SA v. Prudential Assurance Co Ltd, The Ikarian Reefer, [1993] 2 Lloyd's Rep 68 at 81.

¹⁶ R. v. Bowman, (2006) EWCA 417

¹⁷ Kamti Devi (Smt.) and another v. Poshi Ram,

¹⁸ Now section 52 Bhartiya Nagrik Suraksha Sanhita , 2023.

¹⁹ Now section 86 Bhartiya Nyay Sanhita, 2023

²⁰ Now section 64 Bhartiya Nyay Sanhita, 2023

²¹ Krishan Kumar Malik vs State Of Haryana AIR 2011 SC 2877

²² State Of Gujarat vs Kishanbhai, 2014 AIR SCW 557

²³ Now section 184 Bhartiya Nagrik Suraksha Sanhita , 2023.

²⁴ Mukesh & Anr vs State For Net Of Delhi & Ors AIR 2017 SC 2161

from a blood sample provided by the suspect.²⁵ In cases where the mutilated parts of body are found from different places DNA evidence prove to be highly relevant for the purpose of identification.²⁶ Match of the DNA in semen spots on the private part and cloths of victim with that of the accused is an important evidence in sexual offences.²⁷ The stains or remains of other bodily secretions on articles recovered from the site of offence are subjected to DNA test and match of such DNA with accused persons may prove beneficial for prosecution and has been relied upon by courts in many cases.²⁸

Legislative framework

At present, India does not possess explicit legislation outlining the eligibility criteria for use of DNA profiling or forensic analysis in evidence. Although the Bhartiya Nagrik Suraksha Sanhita, 2023²⁹ and the Bhartiya Sakshya Adhiniyam, 2023³⁰ carries certain provisions upon medical and technological matters. Hence, the authority to permit or deny the use of DNA testing rests entirely with the judiciary.

Although the DNA Technology (Use and Application) Regulation Bill, 2019, was introduced in India to regulate the use of DNA technology for establishing the identity of individuals in various matters, primarily criminal investigations, but also extending to civil cases like paternity disputes and identifying missing persons. The bill aimed to create a standardized framework for DNA testing, ensuring reliability and preventing misuse of sensitive genetic information.³¹ A key provision of the bill was the establishment of a **DNA Regulatory Board**. This board was envisioned as the central authority responsible for accrediting DNA laboratories, laying down guidelines for DNA sample collection and analysis, and overseeing the functioning of DNA data banks³². The bill also proposed the creation of **National and Regional DNA Data Banks** to store DNA profiles obtained from crime scenes, suspects, offenders, missing persons, and unidentified deceased individuals. These data banks were intended to facilitate faster and more accurate identification in criminal investigations and other relevant cases.³³ The bill outlined the circumstances under which DNA samples could be

²⁵ Regina v. Alan James Doheny & Gary Adams

²⁶ Inspector of Police, Tamil Nadu v. John David, 2011 AIR SCW 2764

²⁷ Rajkumar vs State Of M.P 2014 AIR SCW 1795

²⁸ Mohammed Ajmal Mohammad Amir Kasab alias Abu Mughaid v. State of Maharashtra, AIR 2012 SC 3565

²⁹ Earlier the Code of Criminal Procedure, 1973

³⁰ Earlier Indian Evidence Act, 1872

³¹ <https://prsindia.org/billtrack/the-dna-technology-use-and-application-regulation-bill-2019>

³² <https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1559099>

³³ [https://chennai.vit.ac.in/files/The%20DNA%20Technology%20\(Use%20&%20Application\).pdf](https://chennai.vit.ac.in/files/The%20DNA%20Technology%20(Use%20&%20Application).pdf)

collected, emphasizing the need for **consent** in most cases, except for individuals accused of offenses punishable by more than seven years of imprisonment or death. It also specified procedures for the **removal of DNA profiles** from the data banks under certain conditions, such as the filing of a police report for suspects or a court order for undertrials.³⁴ But the bill failed for several cause.

Later, Criminal Procedure (Identification) Act, 2022³⁵ was introduced. It was enforce on August 4, 2022, and replaced the Identification of Prisoners Act, 1920³⁶. This new legislation expands the scope of data that can be collected from individuals for criminal investigations.³⁷

Under the Act, "measurements"³⁸ can include fingerprints, palm prints, footprints, photographs, iris and retina scans, physical and biological samples (and their analysis), and behavioral attributes like signatures and handwriting.³⁹ These measurements can be taken from convicts⁴⁰, individuals arrested for any offense or those detained under preventive detention laws⁴¹. Magistrates also have the power to order any person to provide measurements to aid an investigation.⁴² The National Crime Records Bureau (NCRB) is designated as the central agency to collect, store, preserve, process, share, disseminate, and destroy these records, which can be retained in digital or electronic form for up to 75 years.⁴³ Refusal to provide measurements is considered an offense under Section 186⁴⁴ of the Indian Penal Code.⁴⁵

Provisions under BNSS relating to examination of accused for analysing biological samples

Law provides that examinations which are necessary in circumstances of particular case includes examination of blood, semen, swabs in case of sexual offences, blood stains, hair samples, sputum and sweat, and finger nail clippings of an accused, may be performed by using modern scientific techniques including DNA profiling by medical practitioner at the request of

³⁴ [https://chennai.vit.ac.in/files/The%20DNA%20Technology%20\(Use%20&%20Application\).pdf](https://chennai.vit.ac.in/files/The%20DNA%20Technology%20(Use%20&%20Application).pdf)

³⁵ Act No. 11 OF 2022

³⁶ Act No. 33 of 1920

³⁷ <https://scr.b.mppolice.gov.in/crpi>

³⁸ Section 2(1) (b)

³⁹ Available on https://www.mha.gov.in/sites/default/files/2022-11/CriminalPro_14112022%5B1%5D.pdf

⁴⁰ Section 3 (a), Criminal Procedure (Identification) Act, 2022

⁴¹ Section 3 (c), Criminal Procedure (Identification) Act, 2022

⁴² Section 5, Criminal Procedure (Identification) Act, 2022

⁴³ Section 4 (1), 4(2), Criminal Procedure (Identification) Act, 2022

⁴⁴ Now section 211 Bhartiya Nyay Sanhita, 2023

⁴⁵ Section 6, Criminal Procedure (Identification) Act, 2022

police officer.⁴⁶ Section 51 substantially provides that-

“When a person is arrested on a charge of committing an offence of such a nature and alleged to have been committed under such circumstances that there are reasonable grounds for believing that an examination of his person will afford evidence as to the commission of an offence, it shall be lawful for a registered medical practitioner, acting at the request of any police officer, and for any person acting in good faith in his aid and under his direction, to make such an examination of the person arrested as is reasonably necessary in order to ascertain the facts which may afford such evidence, and to use such force as is reasonably necessary for that purpose.”⁴⁷

In case of person accused of commission or attempt to commission of rape, the Sanhita provides for examination of person of such accused when there are reasonable grounds for believing that such an examination will afford evidence relating to the commission of such offence.⁴⁸ The registered medical practitioner who conducts such examination shall prepare a report without delay.⁴⁹ The report shall mention the description of material taken from the accused for DNA profiling⁵⁰ and a precise statement for the reasons for each conclusion arrived shall be mentioned.⁵¹

Provisions under BNSS relating to examination of victim for analysing biological samples

During the stage of investigation of an offence of committing or attempt to commit rape is, it is proposed to get the person of the victim woman, examined by a medical expert, consent of such woman or of a person competent to give such consent on her behalf shall be obtained and such woman shall be sent to such registered medical practitioner within twenty-four hours from the time of receiving the information of such offence.⁵² Such consent shall be specifically recorded in the report of the medical examiner.⁵³ Such examination shall be conducted by a registered medical practitioner employed in a hospital run by the Government or a local

⁴⁶ Section 51, explanation a, Bhartiya Nagrik Suraksha Sanhita, 2023

⁴⁷ Section 51, Bhartiya Nagrik suraksha sanhita 2023

⁴⁸ Section 52 (1), Bhartiya Nagrik suraksha sanhita 2023

⁴⁹ Section 52 (2), Bhartiya Nagrik suraksha sanhita 2023

⁵⁰ Section 52 (2) (iv), Bhartiya Nagrik suraksha sanhita 2023

⁵¹ Section 52 (3) (iv), Bhartiya Nagrik suraksha sanhita 2023

⁵² Section 184 (1), Bhartiya Nagrik suraksha sanhita 2023

⁵³ Section 184 (4), Bhartiya Nagrik suraksha sanhita 2023

authority and in the absence of such a practitioner, by any other registered medical practitioner.⁵⁴ Such medical practitioner shall, without delay examine person of such victim and prepare a report of examination.⁵⁵ Such examination shall mention the description of material taken from the person of the woman for DNA profiling.⁵⁶ Such report shall precisely state the reasons for each conclusion arrived by the examiner.⁵⁷ This report is forwarded within a period of seven days to the investigating officer who forwards it to the Magistrate referred to in section 193 as part of the documents.⁵⁸ The section clarifies that if any examination is conducted without the consent of the woman or of any person competent to give such consent on her behalf then it is not construed as a lawful examination.⁵⁹

VALUE OF DNA EVIDENCE AND ITS ANALYSIS BY THE COURT

Evidence of experts being opinion evidence are not conclusive.⁶⁰ Opinions are given on the basis of facts stated to the person who is giving opinion and many finding truth of the facts stated to him cannot be traced but despite of this uncertainty their opinions still remain an admissible piece of evidence.⁶¹

“There is a requirement to take precautions so as to ensure high molecular weight DNA, optimum digestion of the sample with appropriate enzymes, and perfect transfer and hybridization of the blot to obtain distinct bands with appropriate control”.⁶² Where the evidence establishes that DNA profile generated from the blood-stained clothes of the accused and other articles are found at the place of occurrence is consistent with the DNA profile of the victim, the court is in all position to consider it as a strong piece of evidence against the accused where no other legally tenable evidence create any substantial doubt over the report.⁶³

Court must take into consideration the methodology, regularity and purity of procedure as adopted by the person who analysed the biological sample.⁶⁴ Court must be cautious as there

⁵⁴ Section 184 (1), Bhartiya Nagrik suraksha sanhita 2023

⁵⁵ Section 184 (2), Bhartiya Nagrik suraksha sanhita 2023

⁵⁶ Section 184 (2) (iii), Bhartiya Nagrik suraksha sanhita 2023

⁵⁷ Section 184 (3), Bhartiya Nagrik suraksha sanhita 2023

⁵⁸ Section 184 (6), Bhartiya Nagrik suraksha sanhita 2023

⁵⁹ Section 184 (7), Bhartiya Nagrik suraksha sanhita 2023

⁶⁰ Ishwari Prasad Mishra vs Mohammad Isa, 1963 AIR 1728

⁶¹ Beckwith v. Sydebotham, 1 Camp. 116, 170 Eng. Rep. 897 (K. B. 1807)

⁶² Pantangi Balarama Venkata Ganesh v. State of Andhra Pradesh

⁶³ Mukesh & Anr vs State For Nct Of Delhi & Ors AIR 2017 SC 2161

⁶⁴ <https://royalsociety.org/-/media/about-us/programmes/science-and-law/royal-society-forensic-dna-analysis-primer-for-courts.pdf>

is a possibility of human error and even assuming that a expert uses a proper methodology, results may be difficult to interpret.⁶⁵ Court must not be unduly impressed and persuaded by results of DNA analysis.⁶⁶ Court must understand that there is a lack of retest of DNA results in most cases so due consideration must be made to admit the DNA evidence.⁶⁷

The probative value of a DNA profile hinges crucially on a series assumptions and court must analyse the evidence of DNA profiling and opinion of related expert on the following aspects also. *First*, the source genetic material from which DNA profile could be generated (which is to be used as an evidence) must have remained at the scene of offence, or from any person and no irreparable degradation or prominent contamination should have occurred; *second*, there was no material irregularity in collection of sample; *third*, transportation of sample to the laboratory was ensured without contamination; *fourth*, properly calibrated and functioning equipment, machines and apparatus were used in accordance with appropriate scientific protocols for analysis of the sample at the laboratory; *fifth*, the result of tests were precisely observed and properly recorded; and *sixth*, sample did not get contaminated at any stage of laboratory testing procedures and there was complete assurance that it has not mixed with other genetic material or switched with other samples or wrongly labelled, etc.⁶⁸

Testimony of a medical witness and scientific expert

The deposition given by a civil surgeon or any other medical witness which is taken and attested by a Magistrate in the presence of the accused or which is taken on commission as per the provision of chapter XXV⁶⁹- Part B⁷⁰ of BNSS, may be given in evidence in any inquiry, trial or other proceeding under BNSS.⁷¹ Such evidence can be given even if deponent is not called as a witness. It further provides that court may in case it thinks fit, and shall, in case where an application to this affect is moved by the prosecution or the accused, summon and examine any

⁶⁵ William C. Thompson and Simon Ford, "DNA Typing: Promising Forensic Technique Needs Additional Validation, pp 63-64

⁶⁶ Stephen Petrovich, "DNA Typing: A Rush to Judgment," 24 Georgia Law Review (Spring 1990): 689-90

⁶⁷ U.S. Department of Justice Office of Justice Program- Bureau of Justice Statistics, Forensic DNA analysis issue, 1991 <https://bjs.ojp.gov/content/pub/pdf/fdnaa.pdf>

⁶⁸ Roberto Puch-Solis; Paul Roberts; Susan Pope; Colin Aitken, Assessing the probative value of DNA evidence, Guidance for Judges, Lawyers, Forensic Scientists and Expert Witnesses, available at <https://webhomes.maths.ed.ac.uk/~cgga/Guide-2-WEB.pdf>

⁶⁹ Evidences in inquiry and trial.

⁷⁰ Commission for examination of witnesses

⁷¹ Section 326 (1), Bhartiya Nagrik suraksha sanhita 2023

such deponent with regards to the subject-matter of his deposition.⁷²

A report made under the hand of a Government scientific expert including the Director, Deputy Director or Assistant Director of a Central Forensic Science Laboratory or a State Forensic Science Laboratory⁷³ and the Serologist to the Government⁷⁴, upon any matter or thing duly submitted to him for examination or analysis may be used as evidence in any inquiry, trial or other proceeding under this Sanhita.⁷⁵ Court may summon and examine any such expert as to the subject-matter of his report.⁷⁶ In case such expert is unable to attend personally and there is no express direction of the court for his personal appearance, he may depute any responsible officer working with him to attend the Court if such deputed officer is conversant with the facts of the case and is capable of satisfactorily deposing in Court on his behalf.⁷⁷

In case where such public servant, expert or officer is either transferred, retired, or died,⁷⁸ or cannot be found or is incapable of giving deposition;⁷⁹ or securing his presence is likely to cause delay in holding the inquiry, trial or other proceeding,⁸⁰ the Court shall secure presence of his successor to office, who is holding that post at the time of such deposition to give deposition on such report.⁸¹ An expert shall not be called to appear before the Court unless the report is disputed by any of the parties to the trial.⁸²

Analysing the testimony of expert witness

The acknowledgement to the fact that the judge is not an expert and that the testimony given by an expert has to be assessed by his limited knowledge of the facts and science plays a crucial role in unbiased adjudication and assessment of the testimony of an expert witness.⁸³ The court must first of all apply the legal tests on the basis of the testimony of the expert witness to

⁷² Section 326 (2), Bhartiya Nagrik suraksha sanhita 2023

⁷³ Section 329 (4) (e), Bhartiya Nagrik suraksha sanhita 2023

⁷⁴ Section 329 (4) (f), Bhartiya Nagrik suraksha sanhita 2023

⁷⁵ Section 329 (1), Bhartiya Nagrik suraksha sanhita 2023

⁷⁶ Section 329 (2), Bhartiya Nagrik suraksha sanhita 2023

⁷⁷ Section 329 (3), Bhartiya Nagrik suraksha sanhita 2023

⁷⁸ Section 336 (1), Bhartiya Nagrik suraksha sanhita 2023

⁷⁹ Section 336 (ii), Bhartiya Nagrik suraksha sanhita 2023

⁸⁰ Section 336 (iii), Bhartiya Nagrik suraksha sanhita 2023

⁸¹ Section 336, Bhartiya Nagrik suraksha sanhita 2023

⁸² Section 330 proviso, Bhartiya Nagrik suraksha sanhita 2023

⁸³ Milroy CM. A Brief History of the Expert Witness. Acad Forensic Pathol. 2017 Dec;7(4):516-526. doi: 10.23907/2017.044. Epub 2017 Dec 1. PMID: 31240003; PMCID: PMC6474433 <https://pmc.ncbi.nlm.nih.gov/articles/PMC6474433/>

ascertain his competency to testify or give a report.⁸⁴ A well informed advocate may put such questions in cross examinations to the expert which can shatter his opinion given before the court.⁸⁵ The trial judge has a critical “gatekeeping” role in assuring that legal requirements for admitting testimony of expert are satisfied.”⁸⁶ Further it must be taken care by the judge that “(1) the expert has reached an independent opinion using his own knowledge and expertise; (2) the methods and data on which the expert’s opinion is based are of the sort considered reliable in his field; and (3) the expert’s opinion is connected and relevant to the case.”⁸⁷

The trial judge should assess the reliability of the doctrine, principles and methodologies which an expert employs while performing his examination of the DNA material, and then assessment of the facts and data should be understood in the manner that its sufficiency in support the opinion appears prominent.⁸⁸ Not the general reasonableness but “the reasonableness of using such an approach to draw a conclusion regarding the particular matter to which the expert testimony was directly relevant” in the case should be assessed.⁸⁹

Court must refrain from playing the role of an expert itself but it should satisfy and draw its own conclusion with help of relevant means on the point that whether the opinion rendered by an expert may be relied and acted upon.⁹⁰ While probing and examining into opinion, other relevant evidence must be also considered, and in appropriate cases, corroboration may be sought.⁹¹ Where court is convinced for the reasons of the expert opinion and concludes that there is no other reliable evidence on record which exerts a doubt upon that opinion, the uncorroborated testimony of such expert may be acted upon.⁹²

The expert should be asked relevant questions so as to prove/ disprove the accuracy of methodology and procedure, and the trial court must be justified in accepting or rejecting the expert report.⁹³ Unless very strong and relatable contradictions occurs the court should not distrust the reports of medical expert on production of textbooks as reference of book may not

⁸⁴ R v Atkins [2010] 1 Cr App R 8

⁸⁵ <https://webhomes.maths.ed.ac.uk/~cgga/Guide-2-WEB.pdf>

⁸⁶ Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 597 (1993)

⁸⁷ Jason Smith v. State of Arizona, available at https://www.supremecourt.gov/DocketPDF/22/22-899/290163/20231120160246446_22-899npacUnitedStates.pdf [last visited 4/05/2025]

⁸⁸ Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 597 (1993)

⁸⁹ Kumho Tire, 526 U.S. at 153-154

⁹⁰ Fakhruddin v. State of Madhya Pradesh

⁹¹ Murari Lal S/O Ram Singh vs State Of Madhya Pradesh SC 1980 AIR 531

⁹² Murari Lal S/O Ram Singh vs State Of Madhya Pradesh SC 1980 AIR 531

⁹³ Santosh Kumar Singh vs State Th. CBI, CRIMINAL APPEAL NO. 87 OF 2007

be related to the facts and circumstances of such case in hand.⁹⁴

In case where the witness neither has expertise in the discipline of DNA test/serology nor he was present at the time of analysis and there arise a reasonable doubt about samples of DNA given for profile, the DNA evidence may fail to inspire confidence of trial court judge in admitting the report as correct.⁹⁵

“A positive result of the DNA test would constitute clinching evidence against the accused if, however, the result of the test is in the negative i.e., favouring the accused or if DNA pro- filing had not been done in a given case, the weight of the other materials and evidence on record will still have to be considered.”⁹⁶ Even in relevant cases omission to conduct DNA test will not completely demolish the case if other evidence are sufficient and cogent to prove the guilt.⁹⁷

Where a prima facie examination of the DNA evidence reveals discrepancies of such a nature which raise doubts regarding the integrity of the samples, and the accuracy and reliability of the DNA examination this may involve, contamination of samples, doubts on identity of samples, such delay in recovery of sample which render it of no use, material irregularity in procedure and deviation from necessary scientific criteria, the trial Court fails shall summon and consider deposition of the scientific experts after due cross examination, before relying upon the DNA report or else it will lead to the failure of justice.⁹⁸

CONCLUSION

The integration of DNA profiling into the Indian criminal justice system marks a significant milestone in the evolution and adjudicatory use of forensic science in the country. As an advanced and scientifically robust method with a high degree of accuracy, DNA profiling has played a transformative role in criminal investigations. Indian courts are increasingly relying on DNA evidence to substantiate convictions in heinous crimes. Landmark judgments as discussed above have validated the evidentiary value of DNA and reinforced its admissibility, provided that it is collected, preserved, and analyzed in accordance with established scientific principles. DNA profiling holds enormous promise for enhancing the accuracy and fairness of

⁹⁴ Bhagwan Das vs The State Of Rajasthan, AIR 1957 SC 589

⁹⁵ Rajiv Singh vs The State Of Bihar And Anr, CRIMINAL APPEAL NO. 1708 OF 2015

⁹⁶ Sunil Vs. State of Madhya Pradesh, (2017) 4 SCC 393

⁹⁷ Veerendra vs State Of Madhya Pradesh, CRIMINAL APPEAL NOS.5 & 6 OF 2018.

⁹⁸ Irfan @ Bhayu Mevati vs The State Of Madhya Pradesh, CRIMINAL APPEAL NO(S). 1667-1668 OF 2021

criminal justice in India. Its scientific precision can be a vital tool in reducing wrongful convictions and ensuring justice for victims.

The weight given to DNA evidence shall also be read in the context of other evidentiary materials. Courts should ensure that DNA evidence should not operate in isolation but must be corroborated by other forms of evidence which are capable of substantially contradicting the report so as to ensure a holistic and fair adjudication. This balanced approach ensures that scientific evidence does not override fundamental principles of criminal justice, such as the presumption of innocence and the right to a fair trial. DNA expert testimony represents a powerful aid to the Indian judiciary in pursuit of truth and justice.

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