



## **DNA TEST & ITS USE IN DETECTION OF CRIMES**

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**1.01. Scientific tests generally applied for investigation of crimes etc. :** Scientific tests which are generally applied for the detection of crimes and criminals and determination of paternity etc. are as under :

- (i) DNA (Deoxyribo Nucleic Acid)
- (ii) RNA (Ribo Nucleic Acid)
- (iii) Lie-Detector Test
- (iv) Polygraph Test
- (v) Brain-Mapping Test (P300)
- (vi) Narco Analysis Test (Also known as Truth Serum Test)
- (vii) Voice Analysis Test
- (viii) Finger Print Test
- (ix) Handwriting Test

**1.02. Accused not to be compelled to be witness against himself :** Article 20(3) of the Constitution mandates that no person accused of an offence shall be compelled to be a witness against himself.

**1.03. Article 20(3) of the constitution as bar against forced scientific tests like Narco-analysis & Polygraph etc. :** In view of the bar of the Constitution contained under Article 20(3), an accused person cannot be compelled to undergo scientific tests like Narco analysis, Polygraphy, Brainfinger Printing etc. as it amounts to self-incrimination of the accused. See : **Smt. Selvi Vs. State of Karnataka, AIR 2010 SC 1974 (Three-Judge Bench).**

**2.01. 'DNA' & its meaning ? :** 'DNA' stands for deoxyribonucleic acid, which is the biological blueprint of every life. DNA is made-up of a double

stranded structure consisting of a deoxyribose sugar and phosphate backbone, cross-lined with two types of nucleic acids referred to as adenine and guanine, purines and thymine and cytosine pyrimidines. The most important role of DNA profile is in identification, such as an individual and his blood relations such as mother, father, brother, and so on. Successful identification of skeleton remains can also be performed by DNA profiling. DNA usually can be obtained from any biological material such as blood, semen, saliva, hair, skin, bones etc. See : **Dharam Deo Yadav Vs State of UP, (2014) 5 SCC 509.**

- 2.02. **'DNA' what is ?** : DNA is a molecule that encodes the genetic information in all living organisms. DNA genotype can be obtained from any biological material such as bone, blood, semen, saliva, hair, skin, etc. Now, for several years, DNA profile has also shown a tremendous impact on forensic investigation. Generally, when DNA profile of a sample found at the scene of crime matches with the DNA profile of the suspect, it can generally be concluded that both the samples have the same biological origin. DNA profile is valid and reliable, but variance in a particular result depends on the quality control and quality procedure in the laboratory. See : **Anil @ Anthony Arikswamy Joseph Vs. State of Maharashtra, (2014) 4 SCC 69** (para 18).
- 2.03. **'DNA' & its sources ?** : DNA can be obtained from any biological material such as blood, semen, saliva, hair, skin, bones etc. See : **Dharam Deo Yadav Vs. State of UP, (2014) 5 SCC 509.**
- 2.04. **'DNA' & its sources ?** : DNA genotype can be obtained from any biological material such as bone, blood, semen, saliva, hair, skin, etc. See : **Anil @ Anthony Arikswamy Joseph Vs. State of Maharashtra, (2014) 4 SCC 69** (para 18).

- 2.05. 'DNA' Test not violative of Art. 20(3) of the constitution :** DNA profiling technique has been expressly included among the various forms of medical Examination in the amended explanation to Sections 53, 53-A and 54 of the CrPC DNA Profile is different from a DNA sample which can be obtained from bodily substances. The use of material samples such as finger prints for the purposes of comparison and identification does not amount to testimonial act or compulsion for the purpose of Article 20(3) of the constitution. Hence, the taking and retention of DNA Samples which are in the nature of physical evidence do not face constitutional hurdles in the Indian context. See : **Smt. Selvi Vs. State of Karnataka, AIR 2010 S.C. 1974 (Three-Judge Bench).**
- 2.06. Delayed 'DNA' test not to vitiate its findings :** Where the accused was charged with having caused the death of his girl friend by hitting her with car tools like jack and spanner and cutting her with shaving blades and throwing acid on her as she had refused to abort and was found pregnant at the time of her death, the DNA report had linked the accused as biological father of foetus taken out from the body of the deceased, the sample was taken from the foetus on the date of post-mortem itself and was preserved into ice, some delay had taken place in conducting the DNA test on the sample of foetus, Junior Scientific Officer from Central Forensic Laboratory had conceded as witness that mishandling of sample could lead to wrong results but had categorically deposed that in the case on hand, result reported by him was not based on wrong facts, it has been held by the Hon'ble Supreme Court that the burden was on the accused to prove that prosecution case was vitiated because of delay in conducting test on the sample taken from the foetus and that the sample was improperly preserved. In the absence of the said burden being discharged by the accused, his conviction for the offences u/s 302/34 and 316/34 of the IPC was held proper. See : **Sandeep Vs. State of UP, (2012) 6 SCC 107.**

- 2.07. **'DNA' test & effect of improper preservation of sample ?** : Where the accused was charged with having caused the death of his girl friend who was found pregnant at the time of her death, the DNA report had linked the accused as biological father of foetus taken out from the body of the deceased, the sample was taken from the foetus on the date of post-mortem itself and was preserved into ice, some delay had taken place in conducting the DNA test on the sample of foetus, Junior Scientific Officer from Central Forensic Laboratory had conceded as witness that mishandling of sample could lead to wrong results but had categorically deposed that in the case on hand, result reported by him was not based on wrong facts, it has been held by the Hon'ble Supreme Court that the burden was on the accused to prove that prosecution case was vitiated because of delay in conducting test on the sample taken from the foetus and that the sample was improperly preserved. In the absence of the said burden being discharged by the accused, his conviction for the offences u/s 302/34 and 316/34 of the IPC was held proper. See : **Sandeep Vs. State of UP, (2012) 6 SCC 107.**
- 2.08. **'DNA' reports may vary depending on the quality control & quality procedure in laboratory** : Variance in DNA report depends on the quality control & quality procedure in laboratory. See : **Anil Vs. State of Maharashtra, (2014) 4 SCC 69.**
- 2.09. **'DNA' & 'DNA' profile distinguished** : DNA profiling technique has been expressly included among various forms of medical examination in the amended Explanation to Sec. 53 CrPC. DNA Profile is different from DNA sample which can be obtained from bodily substances. A DNA profile is a record created on the basis of DNA samples made available to forensic experts. Creating and maintaining DNA profiles of offenders and suspects are useful practices since newly obtained DNA samples can be

readily matched with existing profiles that are already in the possession of law enforcement agencies. Matching of DNA samples is emerging as a vital tool for linking suspects to specific criminal acts. See : **Selvi Vs. State of Karnataka,(2010) 7 SCC 263(Three-Judge Bench).**

- 2.10. 'DNA' profiling report of a person accused of rape to be prepared by registered Medical Practitioner examining him :** Section 53A(2)(iv) CrPC as inserted w.e.f. 23.06.2006 casts a duty on the Registered Medical Practitioner examining an accused of offence of rape to prepare a report of his DNA profiling without delay.
- 2.11. 'DNA' profiling report of a victim of rape to be prepared by registered Medical Practitioner examining the person of the victim of rape :** Section 164A(2)(iii) CrPC as inserted w.e.f. 23.06.2006 casts a duty on the Registered Medical Practitioner examining the person of a victim of rape to prepare a report of her DNA profiling without delay.
- 2.12. 'DNA' & other scientific tests when can be ordered by courts? :** DNA Test is not to be directed as a matter of routine and only in deserving cases such direction can be given. See :
1. **Goutam Kundu vs. State of W.B., (1993) 3 SCC 418**
  2. **Banarsi Dass vs. Teeku Dutta (Mrs.), (2005) 4 SCC 449**
- 2.13. 'DNA' profiling test of the person of victim of rape (Sec. 164-A (2) (iii) CrPC w.e.f. 2006) :** (A) An investigating officer, u/s. 164-A(2)(iii) CrPC, can get a victim of rape not only medically examined by a registered medical practitioner but can also get the material taken from the person of the woman (victim of rape) through a registered medical practitioner for DNA profiling. But according to the provisions under sub-sections (4) & (7) to Sec. 164-A Cr.P.C. the woman (victim of rape) cannot be subjected to DNA test without her consent and in case of the woman being minor or otherwise incompetent to give consent then with the consent of some person competent to give consent on her behalf.
- 2.14. 'DNA' Test & precautions & procedure in conducting such tests :** While conducting DNA test precautions are required to be taken to ensure preparation

of high-molecular-weight, DNA complete digestion of the samples with appropriate enzymes, and perfect transfer and hybridization of the blot to obtain distinct bands with appropriate control. See : **Pantangi Balarama Venkata Ganesh vs. State of A.P., 2009 (5) Supreme 506.**

- 2.15. 'DNA' test report & its evidentiary value :** Referring to the U.S. Supreme Court decision rendered in the case of R. vs. Watters, (2000) All.E.R. (D) 1469, the Supreme Court of India has ruled that the DNA evidence may have a great significance where there is supporting evidence, dependent of course, on the strength of that evidence. In every case one has to put the DNA evidence in the context of the rest of the evidence and decide whether taken as a whole, it does amount to a prima facie case. See : **Ranjitsing Brahmajeetsing Sharma vs. State of Maharashtra, 2005 CrLJ 2533 (SC)(Three-Judge Bench).**
- 2.16. 'DNA' test report & its evidentiary value :** From matching of DNA profile of sample at the scene of crime with that of the accused, it can generally be concluded that both samples are of same biological origin. DNA profile is valid and reliable but variance in a particular result depends on the quality control and quality procedure in the laboratory. See : **Anil Vs. State of Maharashtra, (2014) 4 SCC 69.**
- 2.17. 'DNA' test report & its evidentiary value :** Where DNA report, being the solitary piece of evidence against an accused of offence of rape, had gone negative, it has been held that the DNA report conclusively excludes possibility of involvement of the accused in the commission of offence of rape. See : **2009 ACC (Summary) 22 (Gujarat)**
- 2.18. 'DNA' report to be accepted as accurate & exact :** In the case of rape with murder, it has been held by the Hon'ble Supreme Court that DNA report must be accepted as scientifically accurate & an exact science. Interpreting the provisions of Sec 53 & 53-A CrPC, it has also been held that court cannot substitute its own opinion for that of an expert specially

in case of complex subject like DNA profiling. See : **Santosh Kumar Singh Vs. State through CBI, (2010) 9 SCC 747**

**2.19. 'DNA' report in the face of other evidence** : Where in a murder trial the conviction of the accused was not based on expert evidence alone but on other evidence available on record as well, it has been held by the Supreme Court that the use of the word 'similar' and not 'identical' in his report by the DNA expert is not material. See : **Pantangi Balarama Venkata Ganesh vs. State of A.P., AIR 2009 SC 3129.**

**2.20. 'DNA' Test to decide paternity when can be ordered by court?** : As regards the scientific test of blood or DNA Test for determining the paternity or legitimacy of a child, the Supreme Court has laid down following guidelines for the purpose :

- (1) That courts in India cannot order blood test as a matter of course;
- (2) Wherever applications are made with such prayers in order to have roving inquiry, the prayer for blood test cannot be entertained.
- (3) There must be a strong prima facie case in that the husband must establish non-access in order to dispel the presumption arising u/s 112 of the Evidence Act.
- (4) The court must carefully examine as to what would be the consequence of ordering the blood test; whether it will have the effect of branding a child as a bastard and the mother as an unchaste woman.
- (5) No one can be compelled to give sample of blood for analysis. See :
  - (i) **Goutam Kundu vs. State of W.B., (1993) 3 SCC 418**
  - (ii). **Bhabani Prasad Jena Vs. Orissa State Commission for women, (2010) 8 SCC 633.**

**2.21. 'DNA' & 'RNA' Tests whether conclusive for determination of paternity etc.?** : Section 112 of the Evidence Act was enacted at a time when the modern scientific advancements like **Deoxyribo Nucleic Acid (DNA)** as well as **Ribo Nucleic Acid (RNA)** tests were not even in contemplation of the legislature. The result of a genuine DNA test is said to be scientifically accurate. But even that is not enough to escape from the conclusiveness of Sec. 112 of the Evidence

Act e.g. if a husband and wife were living together during the time of conception but the DNA test revealed that the child was not born to the husband, the conclusiveness in law would remain irrebuttable. This may look hard from the point of view of the husband who would be compelled to bear the fatherhood of a child of which he may be innocent. But even in such a case the law leans in favour of the innocent child from being bastardized if his mother and her spouse were living together during the time of conception. Hence the question regarding the degree of proof of non-access for rebutting the conclusiveness must be answered in the light of what is meant by access or non-access as delineated herein. It is for the parties to place evidence in support of their respective claims (regarding paternity) and establish their stands. The view that the documents produced by the party regarding succession certificate (paternity) are not sufficient or relevant for the purpose of adjudication of paternity and **DNA Test is conclusive, is erroneous**. See :

- (i) **Banarsi Dass vs. Teeku Dutta (Mrs.), (2005) 4 SCC 449**
- (ii) **Kamti Devi vs. Poshi Ram, (2001) 5 SCC 311**

**2.22. 'DNA' Test Report denying biological paternity to repel presumption u/s 112, Evidence Act** : In the case noted below, the DNA Test Report stated that the husband was not the biological father of the child. The husband's plea that he had no access to his wife when the child was begotten stood proved by the DNA Test Report. The child was born during the continuance of a valid marriage between the husband and the wife. Section 112 of the Evidence Act was enacted at a time when modern scientific advancement and DNA tests were not even in contemplation of the legislature. The result of DNA test is said to be scientifically accurate. Although Section 112 raises a presumption of conclusive proof on satisfaction of the conditions enumerated therein, but the same is rebuttable. The presumption may afford legitimate means of arriving at an affirmative legal conclusion. While the truth or fact is known, there is no need or room for any presumption. Where there is evidence to the contrary, the presumption is rebuttable and must yield to proof. The interest of justice is best served by ascertaining the truth and the court should be furnished with the best



available science and may not be left to bank upon presumptions, unless science has no answer to the facts in issue. When there is a conflict between a "conclusive proof" envisaged under law based on a presumption and a proof based on scientific advancement accepted by the world community to be correct, the latter must prevail over the former. See : **Nandlal Wasudeo Badwaik Vs. Lata Nandlal Badwaik & Another, (2014) 2 SCC 576 (para 17)**

- 2.23. 'DNA' test can be ordered by Court to repel or establish infidelity and presumption u/s 112 of the Evidence Act :** The Supreme Court in *Nandlal Wasudeo Badwaik, (2014) 2 SCC 576*, clearly opined that proof based on a DNA test would be sufficient to dislodge a presumption under Section 112 of the Evidence Act. Further, it is borne from the decisions rendered by the Supreme Court in *Bhabni Prasad Jena, (2010) 8 SCC 633* and *Nandlal Wasudeo Badwik* case, that depending on the facts and circumstances of the case, it would be permissible for a court to direct the holding a DNA examination to determine the veracity of the allegation(s) which constitute one of the grounds, on which the party concerned would either succeed or lose. However, it is not disputed that if the direction to hold such a test can be avoided, it should be so avoided. The reason is that the legitimacy of a child should not be put to peril. .... In the instant case, the respondent husband has made clear and categorical assertions in the petition filed by him under Section 13 of the Hindu Marriage Act, alleging infidelity. He has gone to the extent of naming the person who was the father of the male child born to the appellant wife. It is in the process of substantiating his allegation of infidelity that the respondent husband had made an application before the Family Court for conducting a DNA test which would establish whether or not he had fathered the male child born to the appellant wife. The respondent rightly feels that it is only possible for him to substantiate the allegations leveled by him (of the appellant wife's infidelity) through a DNA test. In the opinion of the Supreme Court, but for the DNA test, it would be impossible for the respondent husband to establish and confirm the assertions made in his pleadings. Hence, the direction issued by the High Court allowing the respondent's prayer for conducting a DNA test, was fully justified. DNA

testing is the most legitimate and scientifically perfect means, which the husband could use, to establish his assertion of infidelity. This should simultaneously be taken as the most authentic, rightful and correct means also with the wife, for her to rebut the assertions made by the respondent husband, and to establish that she had not been unfaithful, adulterous or disloyal. If the appellant wife is right, she shall be proved to be so. See : **Dipanwita Roy Vs. Ronobroto Roy, (2015) 1 SCC 365** (*paras 16 & 17*)

**2.24. 'DNA' report & directions therefor by Division Bench of the Hon'ble Allahabad High Court issued in its judgment & order dated 28.08.2014 passed in Capital Case No. 574/2013 Akhtar Vs. State of UP(Directing that 'DNA' report in the cases of rape & murder of minor girls must be obtained from the hair & clothes etc. of the victim of rape & accused)** : Following directions in the case of Akhtar Vs. State of UP have been issued by the Hon'ble High Court :

- (1) That in cases of rape and murder of minor girls, which are based on circumstantial evidence, as far as possible, material which is collected from the deceased or the accused for example hair or blood of the victim or the accused, which is found on the persons or clothes of the victim or the accused or or at the spot, seminal stains of the accused on the clothes or body of the victim, Seminal swabs which may be collected from the vaginal or other orifices of the victim and the blood and other materials extracted from the accused which constitutes the control sample should be sent for D.N.A. Analysis, for ensuring that forensic evidence for establishing the participation of the accused in the crime, is available.
- (2) We also direct the Director General Medical Health U.P., Principal Secretary Health, U.P., and D.G.P., U.P. to mandate sending the accused for medical examination in each case for ascertaining whether he has any injuries caused by the resisting victim, or when he attempts to cause harm to her as is provided under section 53 A of the Code of Criminal Procedure Code, which was introduced by Act 25 of 2005, (w.e.f. 23.6.2006). In particular if the rape

suspect is apprehended at an early date after the crime, it should be made compulsory to take both dry and wet swabs from the penis, urinary tract, skin of scrotum or other hidden or visible regions, after thorough examination for ascertaining the presence of vaginal epithelia or other female discharges which are also a good source for isolating the victim's DNA and necessary specialized trainings be imparted to the examining forensic medical practitioners for this purpose.

- (3) We direct the Principal Secretary (Health), U.P., Director General (Health and Medical Services) U.P. to prohibit conducting the finger insertion test on rape survivors, and to employ modern gadget based or other techniques for ascertaining whether the victim has been subjected to forcible or normal intercourse. These finger insertion tests in female orifices without the victim's consent have been held to be degrading, violative of her mental and physical integrity and dignity and right to privacy and are re-traumatizing for the rape victim. Relying on the International Covenant on Economic, Social, and Cultural Rights, 1966 and the United Nations Declaration of Basic Principles of Justice for Victims of Crime and Abuse of Power, 1985 it was further held in *Lillu v. State of Haryana*, (2013) 14 SCC 643 that no presumption of consent could be drawn ipso facto on the strength of an affirmative report based on the unwarranted two fingers test.
- (4) We find that there is absence of an adequately equipped D.N.A. Laboratory in U.P. which has advanced mitochondrial DNA analysis facilities, comparable to the CDFD, Hyderabad, (from where we were able to obtain positive results in this case, after unsuccessful DNA matching in an earlier case [*Criminal Capital Appeal (Jail) No. 2531 of 2010*], *Bhairo vs. State of U.P.*(decided on 6.9.11) where this Court had sent the sample of vaginal smear slides and swabs and appellant's underwear to the U.P. DNA laboratory, viz. Forensic Science Laboratory, Agra), and we direct that such a DNA centre comparable to the CDFD be established in the State of U.P. at the earliest so that Courts and

investigating agencies are not compelled to send DNA samples at high costs to the specialized facility of the CDFD at Hyderabad.

- (5) The Director General of Prosecution, U.P., the Director General of Police U.P. and Director General Medical Health should ensure that blind cases of rape and murder of minor girls or other complicated cases are thoroughly investigated by efficient Investigating Officers. Effective steps should be taken for forensic investigations by collecting and promptly sending for DNA analysis all possible incriminating material collected from the deceased, victim, accused, and at the scene of the crime etc. which may give information about the identity of the accused and his involvement in the crime, after taking precautions for preventing the contamination of the material. This is necessary to prevent Courts being rendered helpless because the prosecution and investigating agency are lax in producing witnesses or because witnesses have been won over or are reluctant to depose in Court. Steps should also be taken for preventing witnesses from turning hostile, by prosecuting such witnesses, and even by cancelling bails of accused where they have secured bails where it is apparent that efforts are being made to win over witnesses and by providing witnesses with protection where ever necessary so that they can give evidence in Court without fear or pressure. In case there is reason to think that the Investigating Officers or medical officers or others have colluded with the accused, strict action be initiated against the colluding officials as was recommended in the case of Dayal Singh vs. State of Uttaranchal (supra). It is necessary that policies and protocols be developed by the DGP, U.P., Principal Secretary Health, Director Medical Health U.P., Director of Prosecutions, U.P., for the aforesaid purposes.

- Note :** (1) Registry of the High Court was directed to forthwith forward the copies of the above judgment/directions to all the respondents to submit compliance report of the directions of the Hon'ble High Court within 4 weeks.
- (2) Registry was also directed to circulate copies of the above judgment/directions to all the District Judges for ensuring compliance of the above directions.

**2.24. पड़वा और पड़िया का डीएनए टेस्ट :** गोसाईगंज थाना क्षेत्र में एक भैंस चर्चा का विषय बन गयी है । तमाम उपाय के बाद अब भैंस के असली दावेदार की पहचान के लिए पंचायत में पड़वा और पड़िया का डीएनए परीक्षण कराये जाने का फैसला लिया गया है । सीओ मोहनलाल गंज राकेश नायक के मुताबिक बीते दिनों गोसाईगंज के मुल्लाखेड़ा निवासी माता प्रसाद की भैंस चोरी हो गयी थी । अगले दिन भैंस मिली थी जिसके बाद गांव के ही गुदरू ने भी भैंस को लेकर अपनी दावेदारी पेश कर दी थी । पूर्व में भैंस को लेकर यह निर्णय लिया गया था कि भैंस को छोड़ दिया जाएगा । दोनों में जिसके दरवाजे पर भैंस पहुंचेगी, उसको सौंप दी जाएगी । जब भैंस छोड़ी गयी तो दोनों में से किसी के दरवाजे पर नहीं गयी थी । इसके बाद निर्णय हुआ कि दोनों दावेदारों में से जो भैंस को दुह लेगा उसको भैंस सौंप दी जाएगी लेकिन यह तरीका भी फेल हो गया । सीओ के मुताबिक माता प्रसाद के पास एक भैंस का पड़वा है, जबकि गुदरू के पास एक पड़िया है । अब पंचायत में फैसला हुआ है कि पड़वा और पड़िया का डीएनए टेस्ट कराया जाएगा ताकि भैंस के असली दावेदार का पता लगाया जा सके । सीओ ने बताया कि शुरुआती दौर में डीएनए टेस्ट में खर्च की जिम्मेदारी भैंस के दोनों दावेदारों की होगी और उनसे एडवांस में रुपये जमा कराये जायेंगे । अन्त में जिस दावेदार की भैंस नहीं निकलेगी, उसके द्वारा जमा रकम से खर्च लिया जाएगा । **स्रोत : दैनिक जागरण, लखनऊ संस्करण 26 फरवरी, 2015, पृष्ठ 8.**

**DNA Test to determine buffalo's master :** To settle an ownership dispute, Lucknow police is going in for DNA sampling of a buffalo to match with two calves. The scientific approach may be foolproof but the method does not appear appropriate as DNA fingerprinting may cost far more than the buffalo in question. The incident relates to a controversy that began after two persons turned up last week to claim ownership of the buffalo that initially went missing but was later traced grazing outside the village. The matter landed up with the Mohanlalganj police. The cops first applied the 'desi methods' in which the bovine was left in the fields and villagers waited for it to walk back to the owner's house. But, it didn't. The police then asked the two contenders to milk

and feed the buffalo. Both passed the tests with equal ease. Interestingly, the two claimants, Ram Bachan and Awadh Ram, are residents of Gangaganj village under Gosainganj police station and their buffalos had gone missing the same day, on February 19. Though it was Ram Bachan who informed police about the theft, Awadh Ram did not. It was only after the buffalo was traced that the latter came into the picture and the controversy began. Now, the two men are claiming ownership of the buffalo, which will undergo the test. **Source : Times of India, Lucknow Edition, Dated 05.03.2015.**

**1(T-1).Opinion of an expert not to be relied on unless examined as witness in court :**

Unless the expert submitting his opinion is examined as witness in the court, no reliance can be placed on his opinion alone. See :

- (i) **State of Maharashtra vs. Damu, AIR 2000 SC 1691**
- (ii) **Keshav Dutt Vs. State of Haryana, (2010) 9 SCC 286**

**1(T-2).Pre-conditions for the admissibility of scientific evidence :** The admissibility

of the result of a scientific test will depend upon its authenticity. Whether the Brain Mapping Test is so developed that the report will have a probative value so as to enable a court to place reliance thereupon, is a matter which would require further consideration, if and when the materials in support thereof are placed before the court. Referring to the US Supreme Court decisions in the cases of Frye vs. United States, (293F1013 DCcir 1923) and Daubart vs. Merryll Dow Pharmaceuticals Inc., 113SCt. 2786 (1993), it has been ruled by the Supreme Court of India that the pre-conditions for the admissibility of the scientific evidence (u/s. 45 of the Evidence Act) are as under :

- (i) Whether the principle or technique has been or can be reliably tested?  
Whether it has been subject to peer review or publication?
- (ii) It is known for potential rate of error?  
Whether there are recognized standards that control the procedure of implementation of the technique?
- (iii) Whether it is generally accepted by the Community?

- (iv) Whether the technique has been introduced or conducted independently of the litigation? See : **Ranjitsing Brahmajetsing Sharma vs. State of Maharashtra, 2005 CrLJ 2533 (SC)(Three-Judge Bench)**

**1(U). Oral Evidence when to yield to electronic or forensic evidence ? :** Existence of serious discrepancy in oral evidence has to yield to conclusive scientific evidence like electronic records (Mobile call details) and other forensic evidence. See : **Gajraj Vs. State of NCT of Delhi , (2011) 10 SCC 675.**

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