

Court of Appeal of Louisiana,
Third Circuit.
STATE of Louisiana
v.
Richard J. SCHMIDT.
No. K97-249.
July 29, 1997.

Janet M. Perrodin, Asst. Dist. Atty., Michael Harson, Keith A. Stutes, Asst. Dist. Atty.,
for State.

William R. Campbell, Jr., New Orleans, Franklin White Dawkins, Lafayette, Michael S.
Fawer, Covington, for Richard J. Schmidt.

Before THIBODEAUX, PETERS and SULLIVAN, JJ.

PETERS, Judge.

The defendant, Richard J. Schmidt, is charged with the attempted second degree murder of Janice Trahan, in violation of La.R.S. 14:30.1 and La.R.S. 14:27, arising out of his alleged injection of a human immunodeficiency virus (HIV) into the victim. He has filed a pretrial supervisory writ application to this court, questioning the correctness of two rulings of the trial court concerning certain evidentiary issues which may arise in his upcoming trial. The two issues presented in this writ application are the admissibility of evidence of other crimes, wrongs, or acts of the defendant and the admissibility of a deoxyribonucleic acid (DNA)¹ analysis which purports to compare HIV found in the alleged victim with HIV found in another individual.

DISCUSSION OF THE RECORD

The writ application contains a partial transcript of testimony presented in two hearings at the trial court, and the defendant's brief contains certain allegations of fact not found in the transcript. For purposes of this writ, we assume those allegations to be true.

According to the writ application, the defendant is a Lafayette, Louisiana gastroenterologist. He and Ms. Trahan engaged in an extramarital affair beginning in 1984 and lasting for approximately ten years. During the affair, Ms. Trahan divorced her husband and obtained from Dr. Schmidt his promise that he would divorce his wife and marry her. However, the defendant never began divorce proceedings against his wife, and sometime in early 1994, Ms. Trahan concluded that the affair should come to an end. When she began dating other men, Dr. Schmidt responded by, among other things, separating from his wife. The separation occurred in May of 1994. However, on the defendant's birthday, July 18, 1994, Ms. Trahan tried to contact the defendant at his apartment. When she was not successful, she called his former home (where his wife was still residing). The call was placed at 5:00 a.m., and Dr. Schmidt answered the telephone. Being upset that the defendant had spent the previous night with his wife and concluding

that Dr. Schmidt had no real intention of leaving his wife, Ms. Trahan broke off the relationship for a second time.

The defendant and Ms. Trahan continued to communicate with each other. In fact, after July 18, 1994, the defendant continued to administer a series of vitamin B12 injections to Ms. Trahan that he had previously administered. The source of the current criminal charge before this court is one of these injections. Specifically, Dr. Schmidt is charged with having intentionally injected Ms. Trahan with HIV on August 4, 1994. HIV is the virus which causes acquired immune deficiency syndrome (AIDS), for which there is currently no cure and which has routinely proved itself to be a fatal disease.

According to the writ application, the defendant called Ms. Trahan on August 4, 1994, to inform her that he would come to her apartment later that day to administer a B12 injection. That evening, he appeared at her apartment and gave her an injection. According to Ms. Trahan, that injection was more painful than previous ones and thereafter her health began to deteriorate. On January 3, 1995, she learned that she was HIV-positive, and sometime thereafter, she learned that she also suffered from hepatitis C, the most serious form of hepatitis.

After learning she was infected with HIV and hepatitis C, Ms. Trahan contacted the Lafayette Parish District Attorney's office and accused the defendant of intentionally infecting her by means of the August 4, 1994 injection. The accusations were presented to a Lafayette Parish Grand Jury, which returned an indictment against Dr. Schmidt for attempted second degree murder. While the writ application does not contain a copy of the indictment or other clarifying pleadings, the defendant asserts in brief that the basis of the charge is the alleged injection of HIV and that the charge does not involve the hepatitis C condition. The state does not dispute this assertion.

OTHER ACTS EVIDENCE

During the course of the prosecution, the state gave the defendant notice that it intended to introduce evidence of a number of other acts of the defendant to prove motive, opportunity, intent, preparation, plan, knowledge, identity, and absence of mistake or accident pursuant to La.Code Evid. art. 404(B)(1). A pretrial hearing resulted in the trial court issuing individual rulings addressing the admissibility of each of the acts identified by the state. The defendant has brought this writ application, questioning the correctness of one of those rulings.

The law regarding evidence of other crimes, wrongs, or acts is found in La.Code Evid. art. 404(B)(1) and *State v. Prieur*, 277 So.2d 126 (La.1973). La.Code Evid. art. 404(B)(1) provides in part:

Except as provided in Article 412, evidence of other crimes, wrongs, or acts is not admissible to prove the character of a person in order to show that he acted in conformity therewith. It may, however, be admissible for other purposes, such as

proof of motive, opportunity, intent, preparation, plan, knowledge, identity, absence of mistake or accident....

The exception provided in La.Code Evid. art. 412 is not applicable to the facts of this case. In *Prieur*, 277 So.2d 126, 130, the supreme court set forth five requirements to be met before other acts evidence could be admitted, and the requirement at issue in this case is as follows:

Prerequisite to the admissibility of the evidence [of other acts or offenses] is a showing by the State that the evidence of other crimes is not merely repetitive and cumulative, is not a subterfuge for depicting the defendant's bad character or his propensity for bad behavior, and that it serves the actual purpose for which it is offered.

The ruling in question involves the state's assertion that on August 2, 1994, Dr. Schmidt caused blood to be drawn from LL,² one of his patients, without following proper office procedure and that the circumstances surrounding the event were similar to the circumstances under which he is alleged to have acquired the tainted HIV blood with which he allegedly infected Ms. Trahan. The state contends that this incident with LL is one of only two instances where blood was drawn at the defendant's office and proper records were not kept. The other instance is alleged to have occurred on August 4, 1994, the date that the state contends Dr. Schmidt obtained the blood tainted with HIV from DM, another one of his patients. The state contends that LL's blood sample is admissible under La.Code Evid. art. 404(B)(1) because of its close proximity in time to the DM blood sample, the fact that LL was also the defendant's patient, and the fact that LL was being treated for hepatitis C.

At the hearing, LL testified that she suffered from hepatitis C and that in 1994 she was in the care of Dr. Schmidt for that condition. According to LL, on August 2, 1994, she saw Dr. Schmidt in his office and he requested that she allow him to take a blood sample for his private research project involving hepatitis C. After being assured that she would not be charged a fee, she consented to his request and a sample was drawn in the office by Dr. Schmidt's nurse, Geraldine Sonnier. LL testified that this was the only time a sample of her blood was taken at Dr. Schmidt's office. Normally, she had blood drawn for testing at a local hospital to assure that the expense would be covered by her insurance.

The state also called Ms. Sonnier to testify about the blood-drawing procedure employed in Dr. Schmidt's office. According to Ms. Sonnier, it was standard office policy that no blood be drawn from a patient without Dr. Schmidt's orders. When blood was to be drawn, the patient was taken to a procedure room within the office. There the patient's name, the blood work required, and the blood work performed were entered into a spiral notebook which always remained in the procedure room. After the entry was made, the appropriate blood sample was taken and a computer-generated accession sticker was attached to the blood sample. A duplicate sticker was then placed in the spiral notebook next to the patient's name for identification purposes. The blood was then sent to a laboratory for analysis. When the results of the analysis were delivered to the doctor's

office, a yellow marker was used to mark through the patient's name in the spiral notebook to indicate the receipt of the test results. The test results were placed in the patient's medical records. According to Ms. Sonnier, this record would also contain a notation concerning the tests ordered and the fact that the test had been performed.

Ms. Sonnier also testified that on occasion her instructions would include the code words "extra lavender," which meant that she was to draw two samples of blood. An entry in the spiral notebook dated August 4, 1994, suggests that an extra-lavender instruction was given concerning the taking of a blood sample from DM, but the entry does not contain a corresponding accession sticker. The importance of the incident concerning LL's testimony becomes apparent because the spiral notebook contains a similar extra-lavender instruction for her on August 2, 1994, and also contains no corresponding accession sticker. Given the fact that it is DM's blood that allegedly is the source of the HIV which now infects Ms. Trahan and the fact that Ms. Trahan also suffers from hepatitis C, the state suggests that this violation of procedure is admissible under La.Code Evid. art. 404(B)(1).

The trial court found that the state had shown by clear and convincing evidence that the private drawing of LL's blood on August 2, 1994, could suggest to a trier of fact that, if the defendant had the opportunity to take blood in this improper manner, "maybe he had the opportunity to take someone else's blood that way. And it may have--it may have been in preparation for what he is accused of doing on August 4th." Additionally, the trial court concluded that the taking of LL's blood "can show a pattern of an opportunity or a system or a pattern of taking blood and not properly documenting it or taking blood under false pretenses."

We first note that the trial court applied the wrong burden of proof concerning the admissibility of other acts evidence. La.Code Evid. art. 1104 provides:

The burden of proof in a pretrial hearing held in accordance with *State v. Prieur*, 277 So.2d 126 (La.1973), shall be identical to the burden of proof required by Federal Rules of Evidence Article IV, Rule 404.

In *State v. Crawford*, 95-1352 (La.App. 3 Cir. 4/3/96); 672 So.2d 197, writ denied, 96-1126 (La. 10/4/96); 679 So.2d 1379, this circuit, relying on *Huddleston v. United States*, 485 U.S. 681, 108 S.Ct. 1496, 99 L.Ed.2d 771 (1988), held that the state's burden of proof of "other crimes" is the preponderance standard rather than the clear-and-convincing standard.³ Regardless of whether clear-and-convincing proof or a preponderance of proof is required, under the facts of this case, we find no error in the trial court's ruling.

However, we note that this is a preliminary finding and that at this time the evidence may be considered admissible but subject to later review at trial on the merits. The finding required for admissibility under La.Code Evid. art. 404(B) does not address the question of relevance versus prejudice required by La.Code Evid. art. 403. That is a question that can only be answered when the evidence is offered at trial.

DNA ANALYSIS

In order to develop the evidence needed for the prosecution of its case, the state consulted several experts about the feasibility of laboratory testing to compare the HIV taken from different individuals. In this case, the obvious purpose of such a comparison was to determine if DM's HIV was the source of Ms. Trahan's HIV. The state ultimately employed the laboratory of Dr. Richard A. Gibbs at the Baylor College of Medicine in Houston, Texas. Michael J. Metzker,⁴ who was then a doctoral candidate at the school, performed the requested comparison by use of a "phylogenetic" or "phylogenetic tree" analysis. Based on the results of this research, he and Dr. Gibbs issued a report concerning the investigation and their conclusions. In that report, Dr. Metzker and Dr. Gibbs concluded that the HIV found in Ms. Trahan was "closely related" to the HIV found in DM. Further, they concluded that the testing data supported their hypothesis that the direction of the transmission of the HIV was from DM to Ms. Trahan. At the hearing on the admissibility of the evidence, the state informed the court that it intended to use the testimony of Dr. Metzker and Dr. Gibbs to establish only that the two HIV samples were closely related and not to prove actual transmission. Therefore, it is only the conclusion that the samples are closely related that is before the court. Dr. Schmidt contends this conclusion is inadmissible.

The general rule concerning admissibility of expert testimony is found in La.Code Evid. art. 702, which provides:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

Prior to 1993, the general test for admissibility of expert scientific testimony involving new techniques was the "general acceptance" standard of *Frye v. United States*, 293 F. 1013, 1014 (D.C.Cir.1923). In other words, an expert opinion based on a new scientific procedure or technique was not admissible unless the procedure or technique had been generally accepted as reliable by recognized authorities in the field.

In 1993, the United States Supreme Court rendered its decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 587-89, 113 S.Ct. 2786, 2794, 125 L.Ed.2d 469 (1993), wherein it concluded that, with the adoption of the Federal Rules of Evidence, a rigid "general acceptance" requirement would be at odds with the "liberal thrust" of the Federal Rules and their "general approach of relaxing the traditional barriers to 'opinion' testimony." *Beech Aircraft Corp. v. Rainey*, 488 U.S. [153] at 169, 109 S.Ct. [439] at 450 [1988]....

In *Daubert*, the Supreme Court suggested that the trial court should consider four factors in determining whether expert scientific evidence is reliable: (1) whether the theory or technique can be, and has been, tested; (2) whether it has been subjected to peer review

and publication; (3) the known or potential rate of error of the theory or technique; and (4) whether the theory or technique is generally accepted in the scientific community. Thus, under the *Daubert* guidelines, general acceptance in the scientific community is only one of the factors to be considered. Under this evaluation procedure, the trial court assumes "gatekeeping responsibility" to ensure that scientific evidence admitted in a trial is both relevant and reliable. *Id.* Still, the focus of the trial court's inquiry is not without limits. The focus of the inquiry "must be solely on principles and methodology, not on the conclusions that they generate." *Id.* at 595, 113 S.Ct. at 2797.

Because La.Code Evid. art. 702 is identical to Rule 702 of the Federal Rules of Evidence, the Louisiana Supreme Court adopted the *Daubert* test as the test to be applied in Louisiana. See *State v. Foret*, 628 So.2d 1116 (La.1993). In doing so, the supreme court noted that Louisiana had not previously followed the *Frye* test but had followed *State v. Catanese*, 368 So.2d 975 (La.1979), which had established standards different from those of *Frye*.

The use of DNA evidence to establish the identity of a defendant as an offender or to eliminate a defendant as a suspect in a criminal case is now well settled in Louisiana. See *State v. Quatrevingt*, 93-1644 (La. 2/28/96); 670 So.2d 197, cert. denied, 519 U.S. 927, 117 S.Ct. 294, 136 L.Ed.2d 213 (1996). La.R.S. 15:441.1 applies to DNA test results and simply provides that DNA profiles and genetic markers are relevant to "establish the identity of the offender." However, La.R.S. 15:441.1 does not attach a legal presumption to a particular DNA test result but states only a general policy that the evidence is relevant. *State v. Spencer*, 95-208, 95-328 (La.App. 3 Cir. 10/4/95); 663 So.2d 271. The issue in this case concerning the comparison of viral DNA, rather than human DNA, is *res nova*.

This court has recognized the potential for extreme prejudice if unreliable DNA test results are presented at trial. See *State v. Charles*, 602 So.2d 15 (La.App. 3 Cir.), writ granted in part and denied in part, 607 So.2d 566 (La.1992). Therefore, a defendant is entitled to a pretrial hearing on the admissibility of the DNA test results if such a hearing is requested, and the state has the burden of proof. *Spencer*, 663 So.2d 271.

One of the questions presented in this writ application involves the degree to which the trial court must consider the expert scientific testimony at the pretrial hearing in order to satisfy its gatekeeping function. The defendant contends that the trial court must not only determine whether the overall methodology satisfies the *Daubert* tests but must also consider whether each step in the methodology was properly performed. He asserts that the supreme court's decision in *Quatrevingt* requires such an extended analysis.

At the hearing conducted in this case, the testimony of five experts was presented. Dr. Metzker, Dr. David M. Hillis, and Dr. Barbara Bowman testified for the state, and Dr. James Mullins and Dr. William R. Gallaher testified for the defendant. As previously noted, Dr. Metzker is currently a senior research biologist for Merck Research Laboratory in West Point, Pennsylvania. Each of the remaining expert witnesses has exceptional

qualifications within his or her field based on his or her education, experience, and background.

Dr. Hillis is currently a professor of biology at the University of Texas and was recognized by the trial court as an expert in molecular phylogenetic analysis. Dr. Bowman is an associate research scientist at Children's Hospital, Oakland Research Institute, Oakland, California. She received her Ph.D. degree in biochemistry from the University of California at Berkeley. Her field of expertise is molecular evolution and phylogenetic analysis of DNA sequences. Dr. Mullins received a Ph.D. degree in cell biology and biochemistry from the University of Minnesota. He is currently a professor of microbiology at the University of Washington in Seattle. He was recognized by the trial court as an expert in molecular epidemiology. Dr. Gallaher holds a Ph.D. degree in microbiology and molecular genetics from Harvard University, Cambridge, Massachusetts. He was recognized by the trial court as an expert virologist and currently serves as a professor of microbiology, immunology and parasitology at Louisiana State University Medical Center in New Orleans.

The purpose of any scientific investigation or analysis is to test a hypothesis. The hypothesis tested in the Metzker-Gibbs study was that the HIV found in DM was the same as that found in Ms. Trahan. The scientific method used was phylogenetic analysis or phylogenetic tree analysis, which, according to all the experts, is one of the common methods used in the analysis of HIV transmissions.

The defendant asserts two assignments of error addressing the admissibility of the Metzker-Gibbs conclusion that the two HIV samples were closely related. He contends that (1) the trial court erred in ruling that the state's HIV DNA evidence meets the appropriate standard of scientific reliability and (2) the trial court impermissibly limited the scope of the DNA hearing and the defendant's cross-examination of the state's witnesses and his introduction, through his own experts, of evidence contrary to the testimony of the state's witnesses regarding the appropriate methodology, or lack thereof, for determining transmission and/or relatedness of HIV between two individuals. While stating in his second assignment of error that the trial court limited evidence concerning appropriate methodology, the essence of the defendant's complaint goes to the protocol applied to the methodology.

Both Dr. Hillis and Dr. Metzker testified as to the procedure employed in the testing process in this case. Dr. Hillis explained the process as follows:

The first step was ... to obtain the tissue samples from the individuals. The next step would be to extract DNA from those tissue samples. The step after that would be to amplify using the polymerase chain reaction, the abbreviated PRC, specific sequences from the HIV genome from this DNA, from those DNA samples. After those had been amplified from the polymerase chain reaction--then they would be subjected to primary sequence analysis so that the actual base pairs from the DNA sequences, the specific target regions of HIV would be sequenced. After the sequences were obtained, the sequences from the particular target

individuals would be aligned; and then after the aligned sequences were obtained, they would be subjected to phylogenetic analysis, and then the phylogenetic analysis would be subjected to statistical testing.

Thus, one can see that the phylogenetic analysis, as it appears on the phylogenetic tree, is but one step in the overall process.

Because the methodology applied to the entire process is only as good as the methodology applied to each individual step, the trial court is required to evaluate each step separately and apply the *Daubert* criteria. As an example, if the method in which the blood samples were taken were not acceptable pursuant to *Daubert*, it would not matter that the methodology of the phylogenetic analysis were acceptable. The lack of acceptance of the first step would render the results of the entire process inadmissible.

The state's experts testified that the method used by Dr. Metzker in each step of his testing process was generally accepted in the scientific community, had been written about in published reviews, and had been subjected to peer review. Dr. Hillis testified that he had personally performed studies to test the accuracy of phylogenetic analysis results and had written articles concerning the subject. He did not agree with the defendant's argument that HIV DNA mutates or changes at such a rate that it makes any testing unreliable. In his opinion, phylogenetic analysis could accurately detect similarities in HIV strains if samples were taken and tested eight years in the future. Dr. Hillis testified that the purpose of phylogenetic analysis of DNA sequences "is to reconstruct the relationships among the DNA sequences to determine how the sequences are related to each other." In his opinion, phylogenetic analysis is the proper method to answer questions concerning relatedness of two HIV samples and is the method which other experts in the field would recommend. He also was of the opinion that Dr. Gibbs's laboratory at Baylor College of Medicine is held in high esteem by the scientific community and is well qualified to perform the testing. His review of Dr. Metzker's report and data associated therewith caused him to conclude that the HIV samples were closely related.

Dr. Bowman has performed extensive research using phylogenetic analysis sequencing to compare HIV DNA and has authored articles on phylogenetic analysis. She agreed with Dr. Hillis that phylogenetic analysis is the best method to answer the question of relatedness of two HIV samples. In her opinion, phylogenetic analysis is the most theoretically sound, the most widely used, and "[h]ighly, wide[ly] accepted." Dr. Bowman testified that the statistical testing referred to by Dr. Hillis as the last step in the overall process adequately addressed the question of error within the phylogenetic analysis process. According to Dr. Bowman, this statistical testing, commonly referred to as "bootstrapping," tests the strength of the phylogenetic analysis on a case-by-case basis. While acknowledging that HIV DNA mutates more quickly than human DNA, Dr. Bowman indicated that this mutation does not occur so quickly that it would have affected the results in this case. In fact, Dr. Bowman estimated that phylogenetic analysis could be used with accuracy to compare HIV DNA from samples taken fifteen years after transmission, and she related a case to the trial court with which she was personally

familiar wherein phylogenetic analysis was used to detect similarities in HIV taken from a mother and her child after eleven years.

The defendant does not repudiate the methodology associated with phylogenetic analysis. In fact, even Dr. Mullins admitted that the "collection of methodologies" used by Dr. Metzker were generally accepted in the scientific community. His complaint is that the Metzker-Gibbs analysis does not go far enough to insure reliability. According to Dr. Mullins, it is his expertise, molecular epidemiology, that utilizes the appropriate standard for investigating viral DNA. While molecular epidemiology entails the use of many of the same steps as phylogenetic analysis, it also includes acquisition of additional information for use in the final analysis.⁵ However, Dr. Mullins admitted that his expertise in phylogenetic analysis and bootstrapping was less than that of Dr. Hillis or Dr. Bowman.

Dr. Gallaher agreed with Dr. Mullins. He testified that, in his opinion, an epidemiological study is essential to evaluate the possible spread of infection from one source to another. However, he also acknowledged a lack of expertise in phylogenetic analysis. Additionally, he testified that phylogenetic analysis is appropriate and reliable to establish some degree of relationship between two HIV samples, although he did not consider it sufficient in this case.

Both Dr. Hillis and Dr. Bowman considered the Metzker-Gibbs method to be adequate given the task assigned. As pointed out by the state in its examination of Dr. Mullins, the epidemiological investigation is a factual investigation and not a scientific one. Thus, the findings would only go to the weight of the Metzker-Gibbs conclusion. The trial court concluded that the testimony of Dr. Mullins and Dr. Gallaher was "weakened" by their lack of expertise in phylogenetic analysis. Additionally, while being "impressed" with the concern of Dr. Mullins and Dr. Gallaher that additional investigation was needed, the trial court considered that concern in light of the state's expressed intention to offer the testimony of Dr. Metzker and Dr. Gibbs strictly to establish that the two HIV samples are "closely related," and not to prove that they are identical or that Ms. Trahan received the virus from DM. In other words, it is simply another piece of circumstantial evidence tending to prove that the defendant obtained HIV from one of his patients and injected it into Ms. Trahan.

We conclude that the trial court did not err in finding that the methodology used by Dr. Metzker in his investigation satisfied the *Daubert* standards. However, the defendant further argues that the trial court erred in not considering errors in the protocol applied to each step of the Metzker-Gibbs process and in not allowing him to present evidence relative to such errors.

After reviewing the Metzker-Gibbs report, Dr. Mullins and Dr. Gallaher issued reports criticizing the testing procedures and laboratory practices used in the Gibbs laboratory. These criticisms all address the step-by-step procedure or protocol by which each scientific method in the overall testing process was performed. While the methodology must be acceptable under the *Daubert* standards, the methodology of each step must be

performed in a proper manner for the test results to be valid. The standards or protocols for these individual steps, if improperly applied, can taint the evidence. The defendant suggests that as a part of the gatekeeping function, the trial court must not only consider whether the methodology of each step is acceptable under *Daubert*, but must also examine the steps of each protocol to determine if they were properly followed. The trial court declined to concern itself with the protocol issue and prohibited much of the testimony addressing such alleged defects. It was the trial court's determination that to do so would invade the province of the jury.

According to Dr. Mullins, the following protocols of molecular epidemiology were not incorporated into Dr. Metzker's study: separation of reagents and separate use of prepared reagents; recordation of storage of aliquot and specimen; sufficiently detailed statements of the protocols used so that they could be reproduced or understood by any individual with ordinary skills within the field; and consideration of contamination, either by ruling out or detecting the source of the contamination. Dr. Gallaher agreed with Dr. Mullins that many of the protocols were not properly documented and that therefore the results could not be properly tested. He also asserted that experimental and investigative bias were potentially present because of the manner in which the experiments were performed and the overall process was handled. In his opinion, the potential for this bias made the results unreliable.

The Metzker-Gibbs study included comparison of the test results with other HIV samples collected in the Lafayette, Louisiana and Houston, Texas areas. The purpose of the comparison was to determine if the similarities found in the HIV of DM and Ms. Trahan were present in the random samples. No such similarities were detected. The defendant attacks the adequacy of the local controls used by Dr. Metzker in gathering and comparing these samples. The purpose of the local control group from the Lafayette area was to eliminate the possibility that the similarities between the HIV DNA of Ms. Trahan and DM were due to a common biostrain of HIV unique to the Lafayette area. As Dr. Metzker explained, after he had done the preliminary comparison of the HIV from Ms. Trahan and DM and found similarities between the DNA sequences, he then compared the DNA sequences of these two samples with a database of DNA sequences from HIV sources from the Houston, Texas area and found no similarity. Dr. Metzker then requested at least thirty random samples of blood from the HIV-positive population in the Lafayette area. The defendant complains that the local control samples should have been derived from individuals who had the same sexual preferences as Ms. Trahan and who were infected at the same time. Dr. Metzker said that he was unaware of any DNA sequence variation depending upon the specific risk group for HIV infection.

In arguing that the trial court should have allowed additional evidence concerning these alleged protocol violations, the defendant relies on the supreme court's decision in *Quatrevingt*, 670 So.2d 197. In that case, DNA evidence had been presented to establish that the defendant had murdered a twenty-two-year-old, mentally-handicapped woman in her New Orleans apartment. One of the steps in the DNA analysis involved a methodology employed by the testing agency to correct for band shifting during the testing process. The evidence revealed that no scientifically recognized and accepted

protocol existed to apply the methodology. The supreme court found that the trial court erred in admitting the DNA evidence.

We find *Quatrevingt* to be distinguishable from this case. In *Quatrevingt*, the supreme court found the methodology to be unreliable because there was no accepted protocol to apply to it. In this case, there exist accepted protocols for each methodology applied in the testing process. Whether these protocols were properly applied is a question for the trier of fact and not a gatekeeping function of the trial court. Thus, we find no error in the trial court's refusal to expand the pretrial hearing for testimony concerning violations of established protocols.

The defendant concludes his attack upon the ruling of the trial court by arguing that the prejudicial impact of the evidence being offered outweighs its probative value. The weighing of these factors as set forth in La.Code Evid. art. 403 is the final step in the *Daubert/Foret/Quatrevingt* analysis. Dr. Gallaher opined that the Metzker-Gibbs study can only prove "relatedness" in the abstract. Therefore, the defendant argues that offering the Metzker-Gibbs study as evidence of "relatedness" in the abstract, based upon the protocol employed by Dr. Metzker, would be prejudicial because the jury would conclude it to be direct transmission. The defendant asserts that the ability of an audience to understand the nuance between relatedness and direct transmission would depend upon the sophistication of the audience.

We note that the use of expert opinions or conclusions based on scientific tests to establish any key component of the state's case against an accused can be highly prejudicial. This prejudicial effect may arise not only in the context of scientifically unreliable testing, but also because of the potentially persuasive value of the very evidence itself. This prejudicial effect may be avoided if the trial court carefully weighs and controls this expert testimony. *Foret*, 628 So.2d 1116. We find that in this case, the trial court has carefully weighed the probative value against any prejudice, and we find no error in the trial court's rulings.

DISPOSITION

For the foregoing reasons, we deny the writ application and remand this case to the trial court for further proceedings.

WRIT DENIED.

THIBODEAUX, J., dissents and will assign reasons.

¹ Deoxyribonucleic acid is the genetic material of all living things.

² While we recognize that the alleged sources of the HIV and the hepatitis C have been identified in the record, we will refer to them in this opinion by initials only.

³ It is our understanding of *Huddleston* that the Supreme Court indicated that the proof required is less than even a preponderance of the evidence.

⁴ At the time of the hearing on the admissibility of the test results, Metzker had received his doctoral degree and was employed as a senior research biologist for Merck and Company, Merck Research Laboratory, Department of Human Genetics, in West Point, Pennsylvania.

⁵ An epidemiological investigation includes interviewing the individuals who submitted samples in the study to determine who their sexual partners were; what their lifestyle was; what, if any, potential risks for HIV transmission were present in the workplace; and what other risk factors, such as intravenous drug use or blood transfusions, were present.