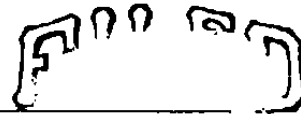


MISSOURI CIRCUIT COURT  
TWENTY-SECOND JUDICIAL CIRCUIT  
(St. Louis City)

STATE OF MISSOURI



vs

APR 24 2000

EVERETT BOYD

CASE NO. 991-3613

DIVISION 6

MARIANO V. PAVAZZA  
CLERK OF COURT

BY \_\_\_\_\_ DEPUTY

**COURT ORDER**

On March 3, 2000, this Court conducted a Frye Hearing at the State's request concerning the use of PCR-STR technology in DNA examinations.

**STATEMENT OF FACTS:**

On March 20, 2000, the State called Anne Mary Bowcock, a professor of genetics and pediatrics at the Washington University Medical Center. Professor Bowcock gave a brief history of STR from the late 1980's to the present (Tr. P. 9, ln 11 to p. 13, ln 14)

Dr. Bowcock explained that the machine now used is known as as ABI, a type of DNA sequencing machine. The machine uses a laser to detect the alleles on the basis of the dye that is used, thus it will give you a color that corresponds to the primer. The machine they use is called an ABI 377 which has a computer attached which is used for the analysis. The system used by her lab can be used in areas other than research " for forensics, for evolutionary studies ..... for paternity testing (Tr. P. 20 lns. 2-4). She stated that the STR technology was absolutely accepted in the scientific community, that is fact it was almost commonplace today. She further testified that the STR's used in forensics poses fewer problems then those used in research, because the forensic markers that are used are selected to avoid as much as possible the problems of stutter.

On cross Dr. Bowcock stated " I've looked at a number of forensic gels and the application is the same regardless of whether you're doing forensics or disease mapping (Tr. P. 25, lns. 12-15).

The State next called Daniela Gerhard a molecular and human geneticist working at Washington Univeersity School of Medicine in the Department of Genetics. Dr. Gerhard, who used a series of slides in her testimony was in agreement with Dr. Bowcock.

In explaining the 377 and the 310 machines, she stated that both are linked to computers that assist the machines in performing their test. That one can do the estimation of allele sizes directly in base pairs. The electrophoresis is faster, thus you can do more samples on more loci, that there is a reduction in error, because everything is automatically placed in a file by the computer.

The last witness called by the State was Mary Beth Karr, a criminalist with the St. Louis Metropolitan Police Department, who specifically worked in the DNA Section of the lab. She testified as to her education and training, including the use of STR technology (Tr. P. 72, ln. 23 - p. 74, lns. 1 - 6).

She testifies that the lab now uses an ABI 310, which is a capillary format where the DNA goes thru the capillary resulting in the collection of DNA evidence. Ms. Karr used a series of to demonstrate how the 310 is used. She testifies that in terms of forensics PCR has helped in conviction and exoneration. With the current system the process is speeded up, that which once took six months using RFLP can now be done in four to six weeks.

The St. Louis Metropolitan Police Department Lab is one of forty plus forensic labs using the 13 core loci of 1998.

The defendant called no witnesses during the hearing, however, counsel for the defendant requested leave to present a expert witness at a later date. The expert the defense intended to call using the same system as the witnesses called by the State, thus said request is hereby denied.

#### CONCLUSIONS OF LAW :

The Courts will go a long way in admitting expert testimony, deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs. *FRYE V UNITED STATES*, (D.C. Cir. 1923), 293 F. 1013.

Missouri courts have already taken up the issues of RFLP and PCR technologies. In *STATE V. CHARLES HUTCHING*, 927 SW2d 411, (Mo. App., E.C. 1996), the Court held that a Frye hearing was not necessary in order to admit RFLP evidence that the defendant did not have a right to challenge such evidence. In *STATE V. DAVIS*, 814 S.W.2d 593 (Mo. Sup. Ct. 1991). Ct. 1991). Cert. Denied, 60 U.S. 3479, 112 S. Ct. 911, 116 L. Ed. 812. In that case the Court held that the RFLP method of DNA analysis is generally accepted in the scientific community.

STR technology is nothing more than the use of fluorescent chemicals during the polymerase chain reaction. A laser generated fluorescent signal from the STR alleles passes information to a computer where the collected data is analyzed to produce DNA profile information. The fluorescent chemicals do not change the results of the PCR process.

#### ORDER:

This Court finds that the State of Missouri has presented sufficient legal and scientific authorities to establish conclusively that the PCR- STR technology has gained general scientific acceptance in the scientific community, thus this evidence is admissible in the prosecution of the above - captioned case and all other cases in which PCR-STR technology has been used.

SO ORDERED:

  
EVELYN M. BAKER, Judge

cc: Joseph W. Warzycki, Assistant Circuit Attorney  
Steven Lewis, Assistant Public Defender