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NO. 921,724

THE STATE OF TEXAS) (IN THE DISTRICT COURT
VS.) (OF TRAVIS COUNTY, TEXAS
BEN SALAZAR) (299TH JUDICIAL DISTRICT

* * * * *

STATEMENT OF FACTS

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APPEARANCES:

MS. RUTH-ELLEN GURA AND MS. CHRISTINE WHITE,
Assistant District Attorneys, P.O. Box 1748, Austin, Texas
78767

FOR THE STATE

MR. STEVE BRITAIN, Attorney at Law, 69 Wells
Fargo, Austin, Texas 78737; and,
MR. STEVE TURRO, Attorney at Law, 605-D West 10th
Street, Austin, Texas 78701

FOR THE DEFENDANT

* * * * *

BE IT REMEMBERED that on the 21st, 22nd and 23rd
days of April, A.D. 1992, the above-entitled and numbered
cause came on for jury trial in the 299th Judicial
District Court of Travis County, Texas, before the
Honorable Mace Thurman, Judge of said Court, presiding,
whereupon the following proceedings were had:

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TRAVIS COUNTY
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DISTRICT COURT
TRAVIS COUNTY
TEXAS~~

PROCEEDINGS

April 22, 1992

1
2
3
4 THE COURT: Good morning.

5 We're ready for the jury. I assume both sides are
6 ready?

7 MR. BRITTAIN: Yes, Your Honor.
8

9 (The following proceedings were had in the presence
10 of the jury.)
11

12 THE COURT: Good morning, ladies and
13 gentlemen of the jury.

14 If both sides are ready, if you'll call your next
15 witness, please.

16 MS. GURA: State calls Devane Clark.

17 THE COURT: If you'll stand and raise your
18 right-hand.

19
20 (Witness sworn.)
21

22 THE COURT: Now, you've been placed under the
23 Rule. By that is meant you are to stay outside of the
24 courtroom except, of course, when you're testifying. You
25 are not to discuss this case with any other person while

1 it's pending. One exception: You may discuss it with the
2 attorneys on either side, but if you do be sure another
3 witness is not present.

4 If you'll have a seat, please.

5
6 DEVANE CLARK,

7 having been duly sworn, was called as a witness and
8 testified as follows:

9 DIRECT EXAMINATION

10 QUESTIONS BY MS. GURA:

11 Q. Would you state your name for the record, please?

12 A. My name is Devane Clark.

13 Q. And what is your present occupation?

14 A. I am a chemist with the Texas Department of
15 Public Safety.

16 Q. How long have you been a chemist?

17 A. Since -- how long have I been a chemist or with
18 the Department?

19 Q. A chemist.

20 A. I've been a chemist since I graduated from the
21 University of Texas in December of 1980.

22 Q. And how long have you been with the Department of
23 Public Safety?

24 A. Since August of 1990.

25 Q. What did you do prior to that?

1 A. Prior to that I worked in the high technology
2 trades here in Austin and I ran my own company for about
3 five years.

4 Q. What is the nature of your work at the Department
5 of Public Safety?

6 A. I'm a forensic serologist with the Department of
7 Public Safety.

8 Q. What does that mean?

9 A. As a forensic serologist I study the chemistry of
10 blood and other body fluids related to criminal
11 litigation.

12 Q. Do you have specialized training in the field of
13 forensic serology?

14 A. Yes, I do.

15 Q. And can you tell the jury about that?

16 A. Yes. I received specialized training through the
17 Department of Public Safety Serology Program. This
18 training lasted approximately six months.

19 Q. In forensic serology what types of body fluids do
20 you examine and analyze?

21 A. Typically we analyze blood, semen, saliva,
22 vaginal fluids and body tissues.

23 Q. Can you explain to the jury, please, about blood
24 analysis?

25 A. Yes. Blood analysis, from a serologist's point

1 of view, when we are submitted evidence related to a
2 crime, we will analyze that blood. We will ask ourselves
3 a number of different questions.

4 First of all, typically we'll either receive whole
5 blood or blood stains. When we're looking at blood stains
6 we ask ourselves a number of questions. First, is the
7 substance blood. Second, is it human blood.

8 If it is human blood we attempt to determine the
9 blood group and genetic markers or enzymes that may be
10 present in that blood stain or sample.

11 Q. What about semen analysis? What are you doing in
12 that case?

13 A. For semen analysis, we're often asked to determine
14 the presence of semen on different articles, items of
15 clothing, vaginal swabs that have been taken as part of an
16 emergency room examination for sexual assault.

17 When we examine these items, first we attempt to
18 determine the presence of spermatozoa and then we also
19 characterize several different semen specific proteins
20 and -- or chemical enzymes which are nonspecific to semen
21 but can give us an indication of whether semen is present
22 or not on the sample.

23 Q. In looking at vaginal fluids, what are you
24 looking for?

25 A. Most of the time we're looking for either blood

1 group substance or the presence of semen mixed with the
2 vaginal fluids.

3 Q. Do you also analyze hair?

4 A. Yes. We do hair analysis at the Department.

5 Q. And what does that entail?

6 A. That entails visual and microscopic examination
7 of the hair and comparing it with known samples, usually
8 from a victim and a suspect.

9 Q. Did you have an occasion to examine evidence
10 submitted to you by the Austin Police Department involving
11 a victim by the name of [REDACTED]

12 A. Yes, I did.

13 Q. Do you recall when that was?

14 A. If I may refer to my notes?

15 We received evidence in this case on June the 6th
16 of 1991, June the 12th, 1991, and October the 18th of
17 1991.

18 MS. GURA: Your Honor, may I approach?

19 Q. (By Ms. Gura) I'm going to show you what has
20 been marked as State's Exhibit No. -- we'll start with
21 State's Exhibit numbers 15, 16 and 17 and ask if you
22 recognize these.

23 A. Yes. I recognize these items.

24 Q. What are they?

25 A. These are three blood tubes.

1 Q. And did you perform tests on the blood contained
2 in these blood tubes?

3 A. Yes, I did.

4 Q. And what type of tests did you perform?

5 A. The first test we did was we determined the blood
6 group of the blood and we also analyzed it for the enzyme
7 content.

8 Q. Okay. And is this -- are these tubes labeled as
9 belonging -- the blood belonging to a particular person?

10 A. Yes. These tubes are labeled with the name of
11 [REDACTED].

12 Q. So, basically what you were doing was analyzing
13 the blood of [REDACTED]; is that correct?

14 A. I analyzed the blood in these tubes with her name
15 on it. That's correct.

16 Q. As a result of that what did you find?

17 A. I determined that Ms. [REDACTED] was a blood
18 group A. She was a nonsecretor and her PGM enzyme type
19 was one minus, two plus.

20 Q. And in determining her secretor status did you
21 also have to look at her saliva?

22 A. Yes. We analyzed a sample of the victim's
23 saliva.

24 Q. I'm showing you what has been marked as State's
25 Exhibit No. 31 and ask if you recognize this.

1 A. Yes, I do.

2 Q. And can you tell the jury what it is?

3 A. This is a Vacutainer tube containing two swab
4 sticks marked with the name [REDACTED].

5 Q. And is it from State's Exhibit No. 31 that you
6 were able to determine whether or not she was a secretor
7 or nonsecretor?

8 A. Yes. That and with the results of the Lewis
9 enzyme testing on the whole blood samples.

10 Q. Now, can you tell the jury, please, what does it
11 mean to be a secretor or a nonsecretor?

12 A. Certainly. Secretor refers to the fact that some
13 individuals secrete their blood group substance into their
14 other body fluids, such as their saliva and their vaginal
15 fluids.

16 Approximately 30 percent of the population we can
17 determine their blood group by analyzing their saliva and
18 looking for what are called blood group substances. These
19 are substances that are found free in the blood and in the
20 other body fluids which indicate that person's particular
21 blood group.

22 Q. So, the victim in this case was a nonsecretor?

23 A. That is correct. By analysis of her saliva we
24 were able to determine that there was no blood group
25 substance present in her saliva, which indicates a

1 nonsecretor.

2 Q. You indicated she was a blood group A. What are
3 the different blood groups that people can possess?

4 A. People can be one of four basic common blood
5 groups. They can be of blood group A, blood group B,
6 blood group O or blood group AB. These are the four most
7 common blood groups.

8 Q. In this case you were able to determine that she
9 was an A?

10 A. That's correct.

11 Q. After you make a determination as to the A-B-O
12 grouping, what -- you indicated to the jury that one of
13 the next steps is to determine the enzymes. Can you tell
14 them, please, what that means?

15 A. Yes. Enzymes are biochemical catalysts that are
16 found in the body. They promote the chemical reactions
17 that go on inside your body. And one of the enzymes we
18 looked at, and in this particular case we analyzed for an
19 enzyme called PGM, which is an abbreviation for
20 phosphoglucomutase.

21 Q. And what are the combinations that you find in
22 analyzing for PGM?

23 A. There are ten basic combinations of the PGM
24 enzyme in any of one of four groupings; one minus, one
25 plus, two minus and two plus. Various combinations of

1 these, we refer to them as genetic markers, give any of
2 ten possible combinations for this enzyme.

3 Q. And you indicated that the victim in this case
4 was a one minus, two plus; is that correct?

5 A. That's correct.

6 Q. Would you mind coming over to the board and maybe
7 we can start a diagram based on what you've told the jury
8 thus far showing what the victim's blood group is and what
9 the enzymes are.

10 A. (Indicating.)

11 Q. Thank you. I'm now showing you what has been
12 marked as State's Exhibits No. 28 and 29 and ask you if
13 you can identify these for the jury, please.

14 A. Yes. I can identify these items.

15 Q. And what are they?

16 A. These are two blood tubes marked with the name

17

18 Q. And did you analyze the blood contained in these
19 tubes?

20 A. Yes, I did.

21 Q. As a result of that analysis, what did you
22 determine?

23 A. I determined that Mr. [REDACTED] was a group A
24 secretor and a PGM subtype of one minus, one plus.

25 Q. Did you also analyze State's Exhibit No. 30 in

1 regards to Mr. [REDACTED]? And State's Exhibit No. 27,
2 excuse me.

3 A. Yes, I did.

4 Q. And was State's Exhibit No. 30 -- can you tell
5 the jury what that is, just to remind them?

6 A. This is a saliva specimen from [REDACTED].

7 Q. And State's Exhibit No. 27?

8 A. This is a semen specimen from Mr. [REDACTED].

9 Q. And you used all of these items, did you not, in
10 determining the blood classification or blood analysis of
11 Mr. [REDACTED]?

12 A. Yes, I did.

13 Q. Would you mind coming to the board again and
14 showing the jury how Mr. [REDACTED], the husband, fits into
15 this category?

16 A. (Indicating.)

17 Q. I'm showing you now what has been marked as
18 State's Exhibit No. 34 and 35 and ask if you can tell the
19 jury what those are and if you recognize them.

20 A. Yes. I recognize these items. These are tubes
21 of blood marked with the name Ben Salazar.

22 Q. And did you use those tubes and analyze the blood
23 contained therein?

24 A. Yes, I did.

25 Q. Did you also analyze State's Exhibit No. 36?

1 A. Yes, I did. These are saliva swabs, also marked
2 with the name Ben Salazar.

3 Q. And State's Exhibit No. 33?

4 A. Yes. This is a semen sample, however this
5 particular exhibit is not marked with the name Ben
6 Salazar.

7 Q. But did you analyze it in regards to Mr. Salazar
8 when you were doing your analysis?

9 A. Yes. That was included with other evidence
10 submitted under suspect samples.

11 Q. As a result of your analysis of these exhibits,
12 can you tell the jury what your finding was concerning the
13 blood group of the suspect, Ben Salazar?

14 A. Yes. Mr. Salazar was determined to be a blood
15 group B secretor, PGM subtype one plus, two minus.

16 Q. Do you want to add that to our little diagram,
17 please?

18 A. (Indicating.)

19 Q. Did you also, as part of your examination -- I
20 mean, of your analysis, examine the vaginal swabs done on
21 [REDACTED] the night of the aggravated sexual
22 assault?

23 A. Yes, I did.

24 Q. And I'm showing you what has been marked as
25 State's Exhibit No. 21, 20, 19 and 18 and ask if those

1 exhibits were part of what you used to analyze the vaginal
2 fluids.

3 A. Yes. I analyzed these items.

4 Q. And all these are items that are marked with
5 [REDACTED] name; is that correct?

6 A. Yes. That is correct.

7 Q. Based on your analysis of the vaginal swabs and
8 vaginal fluids that was found in [REDACTED] on
9 that night, what did you find with the fluids that were
10 present in her vaginal cavity?

11 A. We determined that spermatozoa, which is the
12 cellular constituent of semen, was detected on the vaginal
13 swabs and vaginal slides from the victim and this
14 confirmed the presence of semen on these items.

15 Q. Did you also find that there was some blood in
16 the vaginal cavity?

17 A. Blood, no. But we did detect blood group
18 substances A, B and H on six of the vaginal swabs.

19 Q. Okay. Did you detect enzymes in those?

20 A. Yes. Two of the vaginal swabs were determined to
21 have the PGM markers one minus, one plus, two minus and
22 two plus.

23 Q. Can we show the jury that listed up here?

24 A. (Indicating.)

25 Q. Before you resume your seat, while you're up

1 here, can you explain to the jury what your findings on
2 the vaginal swabs meant to you, based on the blood
3 grouping and the enzymes that were found?

4 A. Yes. This indicated to me that the blood group
5 substance B was foreign to both the victim and the
6 husband, as was the PGM marker two minus.

7 Q. So, the A that was present could not have come
8 from the victim because she's a nonsecretor; is that
9 correct?

10 A. That's correct.

11 Q. So, the A that was present could come from the
12 husband who was a secretor; is that correct?

13 A. That is correct.

14 Q. And the B that was present could have come from
15 the defendant because he is a secretor and he would
16 secrete into the vaginal area; is that correct?

17 A. That is correct.

18 Q. And so the -- as to the PGM, the one minus can be
19 found with both the husband and the victim, correct?

20 A. That is correct.

21 Q. The one plus could have come from the husband, in
22 as much as he was a secretor; is that correct?

23 A. That is correct.

24 Q. Now, the two plus would be present because it's
25 her own --

1 A. That is correct.

2 Q. So, the two minus is the only one that's foreign
3 to either she or her husband?

4 A. Yes. That's correct.

5 Q. You may resume your seat.

6 Did you examine the sheets that were presented to
7 you in this case?

8 A. Yes, I did.

9 Q. And what types of tests did you run on those
10 sheets?

11 A. When we screen articles of clothing or bed sheets
12 that we suspect there may be semen stains present, we
13 typically, the first thing we look at, we use a device
14 called a illumilight or a laser and it's a high intensity
15 ultraviolet light that will cause seminal stains to
16 fluoresce. Once we see this fluorescence, that indicates
17 there may be semen present on that item.

18 The thing we typically do next is we test for an
19 enzyme called acid phosphatase, which is a spot test or
20 it's a presumptive test. We take a small cutting from the
21 stain and treat it with a chemical and if it turns purple
22 within sixty seconds, that's a good indication that semen
23 may be present in that stain. It's not conclusive
24 evidence of semen because acid phosphatase is also found
25 in other bodily fluids as well but not in as great of

1 concentrations as it is in semen.

2 In this particular case there were two stains on
3 the sheet that responded to the acid phosphatase spot
4 test. However subsequent testing of the sheets and the
5 stains did not indicate the presence of spermatozoa or
6 other semen specific proteins so we concluded that there
7 was no semen present on those sheets.

8 Q. Is that unusual to find when evidence of sheets
9 are presented to the DPS lab, that semen does not show up
10 on the sheets?

11 A. No. That's not unusual.

12 Q. Did you find any hair on the sheets?

13 A. Yes, I did. I recovered several hairs from both
14 the brown mattress sheet and a peach colored mattress
15 sheet.

16 MS. GURA: Your Honor, may I approach?

17 Q. (By Ms. Gura) I'm showing you what has been
18 marked as State's Exhibit No. 12 and 13 and ask you if you
19 can identify these.

20 A. Yes. These are the hairs that I recovered from
21 the brown bottom sheet and the pink top sheet.

22 Q. And did you retain care, custody and control of
23 those until such time as you turned them over to the
24 Austin Police Department?

25 A. Yes, I did.

1 Q. Did you alter them in any way other than to
2 analyze them and use them for analysis?

3 A. No, I did not.

4 MS. GURA: Offer State's Exhibits No. 12 and
5 13.

6 MR. BRITTAIN: No objection, Your Honor.

7 What numbers? I'm sorry.

8 MS. GURA: 12 and 13 admitted.

9 MR. BRITTAIN: Thank you.

10
11 (State's Exhibits No. 12 and 13 were admitted.)
12

13 Q. (By Ms. Gura) Did you, as part of your analysis,
14 compare the hair samples from Melinda Leyendecker, marked
15 State's Exhibit No. 22, with the hairs that you found on
16 the sheets, marked 12 and 13?

17 A. Yes, I did.

18 Q. And as a result of that comparison, what was your
19 determination?

20 A. My determination was that the hair recovered from
21 the victim's sheets were visually similar to the victim's
22 hair standards.

23 Q. Is that a normal way of analyzing hair, is to
24 first eliminate the victim herself or the owner of the
25 items?

1 A. Yes. That's correct.

2 Q. And when is it that you go the next step further
3 in analysis?

4 A. If the hair which is detected is obviously
5 different from the victim's hair standards.

6 Q. So, you found no hairs that were foreign to the
7 victim in your analysis; is that correct?

8 A. That is correct.

9 Q. Did you have any need therefore to analyze the
10 hair of the suspect, Ben Salazar?

11 A. I believe the suspect's hair was looked at
12 visually. Yes. In fact I did make that examination.

13 Q. And did you find that it was the same or
14 different from the hair that was found on the sheets?

15 A. It was considerably different.

16 Q. And would that be State's Exhibit No. 37 that you
17 used in your analysis of the defendant's hair?

18 A. Yes. That's correct.

19 Q. Mr. Clark, the blood group of B secretor, PGM one
20 plus, two minus, approximately what percentage of the
21 hispanic population is this blood group found in?

22 A. Let's see, I don't have that calculation directly
23 in front of me. I can make that calculation if you like.
24 What I did in this particular case was I looked at all
25 possible different combinations containing the B blood

1 group substance and the PGM marker two minus.

2 Q. Okay.

3 A. And I can give you that figure.

4 Q. So, in other words a larger group?

5 A. The larger group. Correct.

6 Q. The larger group of which the suspect's blood or
7 the defendant's blood is a subgroup.

8 A. Correct. You have to take all possible
9 combinations involving those factors.

10 Q. Okay. And what percentage of the population
11 exhibited in that group?

12 MR. BRITTAIN: I'm going to object to the
13 question and ask to take the witness on voir dire before
14 he answers.

15 THE COURT: Overrule the objection.

16 Q. (By Ms. Gura) You may answer.

17 A. Thank you. Approximately two percent of the
18 hispanic population would exhibit those characteristics.

19 Q. And when you talk about two percent of the
20 hispanic population, does that include both male and
21 female?

22 A. Yes, it does.

23 Q. And when you talk about two percent of the
24 hispanic population does that also include infants and
25 children?

1 A. Yes, it does.

2 Q. Does it also include people in their teens?

3 A. Yes. That would be inclusive of all genders and
4 age groups.

5 Q. So, from forty years old, fifty years old, sixty
6 years old, seventy years old, eighty years old; is that
7 correct?

8 A. Yes. That is correct.

9 Q. In your opinion is the defendant's blood
10 consistent with that of the donor of the fluids found in
11 the vaginal swabs?

12 A. Yes, it is.

13 Q. And can you give -- how many of the hispanic
14 population can you eliminate from being in this group?

15 A. We would exclude 98 percent of the hispanic
16 population.

17 MS. GURA: Your Honor, the State would ask to
18 mark the diagram and offer it.

19 MR. BRITTAIN: No objection.

20 THE COURT: Pardon me?

21 MS. GURA: Have you admitted it?

22 MR. BRITTAIN: No objection.

23 THE COURT: It will be admitted into
24 evidence.

25

1 (State's Exhibit No. 40 was admitted.)

2

3 MS. GURA: Pass the witness, Your Honor.

4

5

CROSS EXAMINATION

6

QUESTIONS BY MR. BRITTAIN:

7

Q. Mr. Clark, you indicated that your educational background included a degree from the University of Texas in chemistry; is that correct, sir?

10

A. Yes, sir. That's correct.

11

Q. Is that a Bachelor's Degree?

12

A. A Bachelor's Degree.

13

Q. I would hesitate or I would tend to guess that in your studies you had an opportunity to work with statistics in some of your undergraduate courses and in working in the area that you work in, you have some background in statistics, do you not?

18

A. Yes, sir. That's correct.

19

Q. And certainly either in the six months training that you had at DPS or your undergraduate work you had an opportunity to take courses or get instruction in what I'll call the statistical analysis or using tests to give opinions about things. Is that fair?

24

A. Yes, sir. That's correct.

25

Q. Tell the jury what reliability and validity is.

1 A. Reliability has to do with the number of times
2 you perform a test and how often the expected result comes
3 within what we'll call a confidence level of 95, 99
4 percent confidence level.

5 Q. All right. So, when we're talking about the
6 reliability of a particular kind of test we're saying that
7 if it's given so many times we would expect it to give the
8 same answer a certain number of times; is that correct?
9 It will give you -- it's reliable sort of within itself?

10 A. Correct.

11 Q. Okay. Validity, rather than give you like a
12 civics test, validity as I understand it is a different
13 factor and that is that the test is actually getting or
14 going to what you're looking for. Whether the test is
15 valid. To find what you're looking for. It's a different
16 kind of indices of how correct the test is; is that right?

17 A. Yes, sir. That's correct.

18 Q. And that's the difference between the two terms?

19 A. Right.

20 Q. Would you tell the jury, with the Lewis enzyme
21 testing process, what is the statistically accepted within
22 the scientific community, if you know it, reliability of
23 that test?

24 A. Gosh, I'm not sure I've ever seen any
25 reliabilities done on the Lewis typing test.

1 Q. How about validity? How valid is the test?

2 A. I don't believe I've ever seen that either.

3 Q. Okay. No test is perfect.

4 A. Correct.

5 Q. So, it wouldn't shock you, let's say, as an
6 expert in this area if I told you that the reliability of
7 the Lewis enzyme test is 90 percent?

8 A. No. I would think that would be --

9 Q. About right?

10 A. -- about right. Acceptable.

11 Q. And the validity, on the other hand, is about 93
12 percent or 99 percent. In other words, it really is going
13 for what it's seeking and it will be right about 95
14 percent of the time; is that correct?

15 A. That wouldn't surprise me.

16 Q. 90 percent of the time. Okay. So, in terms of
17 the test itself, if I can get out of the chair, the test
18 that is giving us all of this data, we'll call it the
19 Lewis test so I don't misspell enzyme. Is it L-e-w-i-s?

20 A. Yes, sir. That's correct.

21 Q. You think it's probably reliable about 90
22 percent?

23 A. Well, that was your figure. I have not seen the
24 statistics for the reliability.

25 Q. That wouldn't surprise you?

1 A. No. That wouldn't surprise me at all.

2 Q. All right. So, you've got a ten percent variance
3 there. That's with giving the test ten times it's going
4 to get the same result nine out of ten times and it will
5 be wrong one out of ten times, in my hypothetical.

6 Now, the validity of the test, let's say it's 95
7 percent. What that tells us is that five percent of the
8 time it's just flat wrong, right? It doesn't test for
9 what you're looking for, does it?

10 A. That would be correct. Given those numbers.

11 Q. Yes, sir. Now, you said there were ten
12 combinations of this enzyme?

13 A. Yes, sir. For the PGM enzyme.

14 Q. What would those be?

15 A. Well, let's see, may I refer to my notes?

16 Q. Yes, sir. Please.

17 A. I could figure them out but it would take a lot
18 longer than just reading them to you.

19 Q. Like permutations and combinations, I don't
20 remember that. I kind of remember it from junior high but
21 that's about it.

22 A. Okay. The ten PGM subtypes, phenotypes --

23 Q. Yes, sir?

24 A. -- are one plus, one plus; one plus, one minus;
25 one minus, one minus; two plus, one plus; two minus, one

1 plus; two plus, one minus; two minus, one minus; two plus,
2 two plus; two plus, two minus; and, two minus, two minus.

3 Q. Now, these numbers are -- they're not -- use
4 another term. I may be using it wrong, they're not
5 quantitative. They're just labels; is that fair?

6 A. Yeah. You could look at it that way. Sure.

7 Q. That could be A, B, C, D, E, F. It doesn't mean
8 anything about how many there are of something.

9 A. No. It doesn't have anything to do with
10 quantities. The quality of the description of the alleles
11 or genotypes that express these particular enzymes.

12 Q. All right. Let me circle one of these and ask
13 you if you can tell the jury how many -- what percentage
14 of what you call the hispanic male population -- we're
15 going to talk about that in a minute. How many of the
16 hispanic population have that?

17 A. Yes, sir. I can tell you that.

18 Q. All right. What percentage?

19 A. Two minus, one plus?

20 Q. Yes, sir.

21 A. The observed phenotypic frequency for that
22 particular genetic marker is 38 percent of the hispanic
23 population.

24 Q. Okay. How about two minus, one minus?

25 A. Approximately eighteen percent.

1 Q. How about two minus, two minus?

2 A. Approximately six percent.

3 I'm sorry. I'm giving you the wrong numbers. I'm
4 reading off the wrong line. I will go back. I was giving
5 you the observed numbers out of the total sample that was
6 taken in the study.

7 Q. Not the hispanic?

8 A. No. These are the hispanic numbers but that
9 would be 38 people out of 347, 18 people out of 347 and 6
10 people out of 347.

11 Q. All right. Let me write that down. We're
12 talking about 347 people. Okay.

13 A. In the sample group. Yes, sir.

14 Q. All right. Now, tell me where I'm wrong. I'll
15 do this over.

16 A. Let's go back to the beginning.

17 Q. Two minus, one plus.

18 A. Two minus one plus, the observed percentage is
19 eleven percent.

20 Q. Okay. We're a lot less. Two minus, one minus?

21 A. 5.2 percent.

22 Q. I'm going to -- I'll just say five percent.

23 Okay. 5.2. Whatever.

24 Two minus, two minus?

25 A. 1.7 percent. Sorry about that.

1 Q. That's all right. Now, if we -- would I be
2 mistaken to say if we add up all of the two minuses that
3 we've got here --

4
5 (Discussion off the record.)

6
7 Q. (By Mr. Brittain) Excuse me. That's why Steve
8 is here. Two plus, two minus, what's the percentage on
9 that?

10 A. 2.9 percent.

11 Q. Thank you, sir.

12 So, if we look at the two minuses we've got 11,
13 5.2, that's 16.2. I'm going to mess up now.

14 Let's say three, that's 19.2, 19.1 and we're up
15 here about 20.8 percent.

16 A. Your math is very good. That's the number I got,
17 too.

18 Q. It's not very good but I lucked out. 20.8
19 percent.

20 A. Yes, sir. That's correct.

21 Q. Now, 20.8 percent, plus or minus something,
22 right?

23 A. Right. You would expect some margin of error in
24 these tests, as you say.

25 Q. Tell me what it is.

1 A. Well, I couldn't tell you what it is. I've never
2 seen any validation or statistics on the PGM data.

3 Q. That's what it is on these 347 people, right?

4 A. I guess we can figure it out. If you know the
5 sample size you can determine -- and you know the bell
6 shaped curve, you can determine the one sigma level, which
7 is the confidence level, but I'm not familiar with what
8 that number would be.

9 Q. All right. This sample, that was 347?

10 A. Yes, sir.

11 Q. Okay. Have you got the demographics? Do you
12 know where these people were raised, whether they were one
13 hundred percent hispanic or were they hispanics that were
14 primarily from the central region, from Mexico, the
15 northern region, the anglo influence, the Spanish
16 influence? Do you have any idea where these people came
17 from?

18 A. Yes, sir. I do. The reference for this study is
19 the Blood Stain Analysis Manual, published by SERI, which
20 is the Serological Research Institute.

21 Q. All right.

22 A. And my data indicates that this sample size and
23 study is for Californian Mexican-Americans.

24 Q. Thank you, sir.

25 Okay. So, all of this, and we don't know what the

1 plus or minus is, has to do with 347 hispanics in
2 California. Now, let's take our 20.8 or 21 percent. Tell
3 me, if you would, how many -- I may not say this right.
4 How many of these all of these two minus groups, of that
5 21 percent, how would that be narrowed by saying two minus
6 in the A blood group? Does that question make sense, sort
7 of?

8 A. Yeah. Let me approach it -- I know what you're
9 saying. Let me take it at a little bit different angle.

10 Q. All right, sir.

11 A. The A blood group for hispanic Americans would be
12 30.9 percent of the population.

13 Q. A is what?

14 A. 30.9 percent.

15 Q. Okay. And are my statistics right, you just
16 multiply 21 percent times 30.9 and you get a statistic?

17 A. Yes, sir. That's correct.

18 Q. All right. How about B?

19 A. The B blood group, in hispanic Americans would be
20 10.8 percent and that's how I arrived at the number I
21 quoted earlier. It's ten percent of 20 percent.

22 Q. Ten percent of twenty percent? Okay.

23 All right. And that gives you your two percent
24 that you're using?

25 A. That's correct.

1 Q. How is that two percent weighted male/female?

2 A. That includes both male and female.

3 Q. How is it weighted male and female?

4 A. That I do not know. I imagine it would be
5 weighted just in terms of straight percentage of
6 male/female in the population.

7 Q. If we weren't imagining, the truth is we don't
8 know?

9 A. That is correct.

10 Q. We don't know young/old. We don't know about
11 age. We don't know if that percentage goes up or goes
12 down if it happens to be male at a certain age or female.
13 We don't know if it may be .000001 percent of that female
14 and the rest is male or .000001 is male and the rest
15 female, do we?

16 A. No, sir. Not absolutely.

17 Q. Or at all. Do you have any numbers on that?

18 A. No. I do not.

19 Q. Okay. Let's ignore this, (indicating), and this,
20 (indicating), and this, (indicating), and just -- and
21 let's just take your two percent. Let's say -- I'll give
22 you this hypothetical. Is that around 1990, and our
23 hypothetical community we'll call Austin, that there were
24 hypothetically 465,622 people and that 22.9 percent, or
25 100,868 were hispanic.

1 Do you understand my hypothetical?

2 Q. Would you run that by me again, please, sir?

3 A. Let's say in this hypothetical 1990 census, that
4 in our community we have 465,622 people. That we have
5 about 22.93 percent hispanic in this hypothetical
6 community of Austin and that, you just take my word for
7 23.93 or 95, if you got a calculator you can figure it,
8 it's 106,868 hispanics in that community.

9 What I would do to determine how many people, just
10 saying it's perfect, and that this is right, (indicating),
11 and that this figure relates to this somehow,
12 (indicating), how many people would I be talking about,
13 the two percent?

14 A. Oh, a little over 2,000.

15 Q. Now, if I extend my community to Bastrop, or my
16 hypothetical Austin community out to Bastrop or Hayes
17 County, where there are substantial hispanic populations,
18 or if I'm a little distressed about these census figures
19 because hispanics are not all that good about answering
20 the federal census, that would change that figure, would
21 it not?

22 A. Yes, sir. The more people you would include in
23 the group the larger that figure would become.

24 Q. What's the H?

25 A. H blood group substance is what's referred to as

1 precursor blood group substance. People who have blood
2 group O only show blood group H substance in their blood.

3 Q. Is there a correlation you can give me between
4 that type and two minus?

5 A. No, sir. Those are independent variables. Those
6 do not correlate.

7 Q. So, there -- you can't tell me how many two
8 minuses would be in the H blood group?

9 A. Oh, now, that I can tell you. I misunderstood
10 your question.

11 Q. Tell me that.

12 A. Okay. For hispanics?

13 Q. Yes, sir.

14 A. Approximately 56 percent of hispanics have blood
15 group O.

16 Q. With a two minus?

17 A. And, again, the 20.8 percent of those would have
18 the two minus marker.

19 Q. So, almost 30 percent. Tell the jury, if you
20 can, whether this two minus, (indicating), relates to the

21 A. Does it?

22 A. Well, I'm maybe not understanding your question
23 here.

24 Q. I'm saying what you've got is a sample that had
25 these blood groups and it had this PGM in it. Can you tie

1 that two minus to that A?

2 A. Yes. I can tell you how many hispanics with --

3 Q. No. No. I mean, in this sample can you say that
4 that two minus relates to that blood group A?

5 A. Again, I'm not understanding your question.
6 These are independent variables.

7 Q. I know that. That's why I want you to answer no.
8 But I'm asking the question.

9 Can you say that this two minus relates to the A?

10 A. No.

11 Q. Can you say that it relates to the B?

12 A. No.

13 Q. Can you say that it relates to the H?

14 A. No.

15 Q. If it does relate to the H, we've got almost a
16 third of the hispanic population that could have that
17 blood group, don't we?

18 A. No, sir. That's not correct.

19 Q. Well, tell me what is correct.

20 A. A person who is a blood group A will also show
21 blood group H blood group substance in their body fluids,
22 if they're a secretor. A person who is a blood group B
23 will also show blood group H.

24 Q. And a person who is a blood group O?

25 A. Will only show blood group H.

1 Q. Will only show H?

2 A. That is correct.

3 Q. But you cannot relate this two minus to these
4 categories, can you?

5 A. No, sir. Because they are independent variables.

6 Q. Have you seen any studies relating -- relative to
7 the blood types, enzyme groups or anything else between
8 the population -- hispanic population of California or any
9 other state?

10 A. Would you repeat the question, please?

11 Q. Have you seen any studies or can you relate to
12 the jury any correlation between these particular enzyme
13 studies that we're talking about, the PGM factor, any
14 differences or similarities between population groups?
15 I'm speaking specifically about hispanic population groups
16 in California as opposed to any other state?

17 A. No, sir. I can not.

18 MR. BRITTAIN: I'll pass the witness, Your
19 Honor.

20

21 REDIRECT EXAMINATION

22 QUESTIONS BY MS. GURA:

23 Q. Mr. Clark, what is scientifically accepted
24 variance on reliability?

25 A. Typically we like to look at things around what's

1 called the two sigma confidence level or the 95 percent
2 confidence level.

3 Q. And you have testified that you have never seen
4 anything done on the Lewis test; is that correct? In
5 terms of reliance?

6 A. That's correct. I've read the literature that's
7 published with the SERI that we use, but I don't believe
8 they include a statistical analysis on it.

9 Q. To your knowledge is there an analysis of the
10 reliability of it?

11 A. The way I look at it, these are generally
12 accepted techniques for this type of analysis.

13 Q. Does environment have any effect on what blood
14 group you are?

15 A. No.

16 Q. Where does your blood group come from? Where is
17 it determined?

18 A. Your blood group is genetically determined. If
19 you know what your mother's blood group and your father's
20 blood group is, then you can determine what your blood
21 group is.

22 Q. So, it wouldn't really make a difference whether
23 you were in California or Alaska or New Jersey?

24 A. No. It should not.

25 Q. How many times were tests run on these samples?

1 A. Which tests?

2 Q. In terms of grouping the blood and the enzymes.

3 A. Well, different samples were run at least once.

4 The blood was grouped at least twice.

5 Q. And was that by you?

6 A. Yes. That was by me and another serologist in
7 the lab, Donna Stanley.

8 Q. And were those tests that were run, did each time
9 they were run come back with the same results?

10 A. Yes, they did.

11 Q. Based on your analysis of the samples and the
12 vaginal swab that you received, what is your opinion as to
13 whether or not the suspect's semen is possible to have
14 been in the vaginal cavity of Melinda Leyendecker on that
15 date?

16 A. The results of my analysis is that semen was
17 detected on the vaginal swabs of the victim. That the B
18 blood group substance and the PGM marker two minus
19 detected on these swabs are foreign to both the victim and
20 the husband and therefore could have been contributed by
21 the semen donor. And the suspect can not be excluded as a
22 possible contributor of that semen.

23 Q. In fact, where does he fall in the possibility of
24 being the donor?

25 A. At the two percent level.

1 Before I forget it, I want to offer Defendant's 3
2 and Defendant's 2, the time chart.

3 MS. GURA: All right.

4 THE COURT: You want to offer Defendant's --

5 MR. BRITTAIN: Yes, sir.

6 THE COURT: -- Exhibit 3?

7 MR. BRITTAIN: 2 and 3.

8 THE COURT: 2 and 3.

9 MS. GURA: Your Honor, the State would object
10 to Defendant's Exhibit No. 3 in as much as the testimony
11 was that this is not evidence in terms of the numbers that
12 were placed up here. Especially the 90 percent and the 95
13 percent.

14 MR. BRITTAIN: Those are hypotheticals which
15 I'm allowed to use in cross examination.

16 THE COURT: Which is it, Defendant's Exhibit
17 3?

18 MR. BRITTAIN: Yes, it is.

19 THE COURT: It will be admitted into
20 evidence.

21
22 (Defendant's Exhibit No. 3 was admitted.)

23
24 MR. BRITTAIN: And 2 is the time chart.

25 THE COURT: 2 is what?

1 MR. BRITTAIN: The time chart where the
2 officer --

3 THE COURT: All right. Do you have any
4 objection?

5 MS. GURA: No, sir.

6 THE COURT: It will be admitted into
7 evidence.

8

9 (Defendant's Exhibit No. 2 was admitted.)

10

11 MR. BRITTAIN: At this time we call Ms.
12 Salazar to the stand.

13 THE COURT: Were you sworn?

14 MS. SALAZAR: Yes, sir.

15 MR. BRITTAIN: She's been under the Rule.

16 THE COURT: If you'll talk about the
17 microphone so the jury can hear.

18

19

20

21

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23

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