STATE OF WISCONSIN : CIRCUIT COURT : MANITOWOC COUNTY
BRANCH 1

STATE OF WISCONSIN,

PLAINTIFF,

vs.

STEVEN A. AVERY,

DEFENDANT.

JURY TRIAL
TRIAL - DAY 16
Case No. 05 CF 381

DATE: MARCH 5, 2007

BEFORE: Hon. Patrick L. Willis
Circuit Court Judge

APPEARANCES: KENNETH R. KRATZ
Special Prosecutor
On behalf of the State of Wisconsin.

THOMAS J. FALLON
Special Prosecutor
On behalf of the State of Wisconsin.

NORMAN A. GAHN
Special Prosecutor
On behalf of the State of Wisconsin.

DEAN A. STRANG
Attorney at Law
On behalf of the Defendant.

JEROME F. BUTING
Attorney at Law
On behalf of the Defendant.

STEVEN A. AVERY
Defendant
Appeared in person.

TRANSCRIPT OF PROCEEDINGS

Reported by Diane Tesheneck, RPR

Official Court Reporter

I N D E X

EXHIBITS	MARKED	OFFERED	ADMITTED
433	163		
438	52		
444	167		
433-437		232	232
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THE COURT: At this time the Court calls State of Wisconsin vs. Steven Avery Case No. 05 CF 381. We're here this morning on a motion hearing as part of the continuation of the trial in this matter. Will the parties state their appearances for the record, please.

ATTORNEY FALLON: Good morning, your Honor. May it please the Court, the State appears by Assistant Attorney General Tom Fallon, Assistant District Attorney Norm Gahn, and District Attorney Ken Kratz as Special Prosecutors for the State of Wisconsin.

ATTORNEY STRANG: Good morning, Steven Avery is in person, Jerome Buting and Dean Strang on his behalf.

THE COURT: In terms of the agenda today, it's the Court's understanding we're going to begin by hearing the State's motion to admit EDTA test results. Both parties agree that the State will make its offer of proof on the record today. The Court will then hear oral argument and make a determination as to whether or not the State's proffered evidence is admissible.

Should the Court determine that the evidence is admissible, the Court will then hear

the defendant's motion for sequential independent testing and funding. And there's also a motion that was filed, or made orally by the defense during trial, in which the defense renewed its fair testing motion. And the Court will hear oral argument on that at the end of the day today, time permitting. Counsel, is that your understanding of our agenda?

ATTORNEY GAHN: Yes, your Honor.

THE COURT: All right. The State may call its witness.

ATTORNEY GAHN: State would call Dr. Marc LeBeau.

THE CLERK: Please raise your right hand.

DR. MARC LEBEAU, called as a witness herein, having been first duly sworn, was examined and testified as follows:

THE CLERK: Please be seated. Please state your name and spell your last name for the record.

THE WITNESS: My name is Marc, M-a-r-c, LeBeau, L-e-B-e-a-u.

DIRECT EXAMINATION

BY ATTORNEY GAHN:

Q. What is your occupation?

A. I'm the unit chief of the Chemistry Unit at the

FBI Laboratory.

Q. And where is your laboratory located?

A. It's located in Quantico, Virginia.

Q. And how long have you been employed at that laboratory?

A. Since 1994.

Q. And how long have you been the unit chief of the Chemistry Unit?

A. Since September of 2000.

Q. And what are your duties within the FBI Laboratory?

A. I manage the day-to-day operation of the unit overseeing not only the cases that come into our unit for analysis, but also review the results of the scientists that work under me to ensure that all of the requirements are in place before the reports are released to our contributors.

Q. And what is your educational background, please.

A. I have a bachelor's degree in chemistry and criminal justice from Central Missouri State University in Warrensburg, Missouri. I have a master's degree in forensic science from the University of New Haven, in West Haven Connecticut. And I have a doctorate in toxicology from the University of Maryland in

Baltimore.

Q. And, Doctor, would you please describe any experience and special training that you have in your field?

A. Well, when I started with the FBI Laboratory, I was thoroughly trained in the relevant areas of forensic chemistry and forensic toxicology, as it pertains to the types of examinations that we are typically asked to perform in our laboratory.

I worked for four years before I started with the FBI Laboratory. I worked as a laboratory supervisor at a medical examiner's office in St. Louis, Missouri. Before that I was a chemistry instructor for the University of New Haven. I worked as a laboratory intern for a private toxicology laboratory and I have also worked as a laboratory technician for Monsanto Chemical Company in St. Louis, Missouri.

Q. Do you belong to any professional or scientific organizations in your field?

A. Yes, I do.

Q. And what are they, please?

A. I'm an active member of the Society of Forensic Toxicologists in which I serve on the Board of Directors in that organization and also chair one

of their professional committees. Likewise, I'm a member of the International Association of Forensic Toxicologists and, again, I'm on two committees in that organization. I'm also an active member of the American Academy of Forensic Scientists.

Q. Do you attend conferences within your field?

A. Yes, I do.

Q. And are you ever asked to present or speak at the conferences in your field?

A. Yes, I am, quite frequently.

Q. Could you describe some of those for his Honor?

A. I'm asked quite often to be a speaker in a number of workshops for these different organizations and I'm also often invited to lecture in areas of forensic toxicology, specifically with drug facilitated crimes. I often get invitations for that.

Q. Would you explain a little bit of what you mean by drug facilitated crime.

A. Yes, these are crimes in which, as the name implies, the crime itself is helped out by the fact that an individual has slipped a drug and that drug usually incapacitates an individual so that the crime can occur.

Q. Is the FBI Laboratory accredited?
A. Yes, it is.
Q. What does that mean to be accredited?
A. It's that an outside expert body will come into your laboratory and inspect its practices to ensure that it's following the standards that have been set up by that outside body.
Q. And do you undergo proficiency testing at the FBI?
A. Yes, we do.
Q. And do you yourself undergo proficiency testing?
A. Yes, I do.
Q. And have you passed all your proficiency tests?
A. Yes, I have.
Q. Have you ever testified as an expert before?
A. Yes, I have.
Q. And how many times?
A. I don't keep track of the numbers, but it's roughly 40 or 50 times I have testified.
Q. Have you ever been rejected as an expert in your field?
A. No, I have not.
Q. Have you authored or coauthored any peer review journals or articles?
A. Yes, I have.

Q. And could you explain some of those to the Court?
A. I have authored or coauthored approximately 20 scientific articles for chapters in books. These have ranged in various areas of forensic chemistry and forensic toxicology.
Q. Have any of these articles dealt with the use of a technique called LC/MS/MS?
A. Yes, they have.
Q. And could you describe for the Court some of the articles that you have coauthored or perhaps if there are any textbooks that you have been involved in?
A. Yes, I have authored an article that analyzes for a drug called Rohypnol using LC/MS/MS techniques. I have coauthored an article that talks about a drug called Mivacurium, also using LC/MS/MS techniques.

ATTORNEY BUTING: Could you -- Could you just spell, when you get to names of drugs like that, could you spell them, please.

A. Yes, Rohypnol is R-o-h-y-p-n-o-l. Mivacurium, M-i-v-a-c-u-r-i-u-m. And then, additionally, I coauthored an article on another drug that's called Doxacurium, D-o-x-a-c-u-r-i-u-m. And, again, that's using LC/MS/MS techniques.

I recently was an invited guest reviewer for a textbook on the topic of LC/MS and LC/MS/MS techniques. And then I have also coedited a book on drug facilitated sexual assault that involved, within the chapters, the topic of LC/MS and LC/MS/MS techniques.

Q. And when you talk about the LC/MS/MS techniques, is that the technique that you used in the analysis in this case?

A. Yes, it is.

Q. Would you describe how your lab became involved in this case?

A. Well, I received a phone call from the District Attorney's Office asking if we had a method that would allow us to determine if EDTA was present in a bloodstain or not. Through the course of the conversation, we were asked if we would be willing to work this case for the State. And we agreed to do the work on this case.

Q. And were you informed of the nature of this case, basically that there were accusations of planting, by law enforcement officers, of evidence?

A. Yes, I was.

Q. And why would the FBI be concerned about a case

that involves allegations of planting evidence by law enforcement officials?

A. Well, one of the many type of cases that the FBI investigates are corruption by public officials. So it's one of the areas we consider to be a very serious accusation for two reasons.

If there's a crooked public official out there, we want to make sure they get off the streets. And, likewise, if an innocent public official is being wrongly accused of something, we want to at least try to set the record straight to ensure the public's trust in that organization or that individual.

Q. Before we go any further, Doctor, I have marked that Exhibit as 433; is that correct?

A. Yes.

Q. Could you please describe what that exhibit is.

A. This is a copy of my curriculum vitae describing my experiences, my education, etcetera.

Q. And does that basically summarize what you testified today about your qualifications?

A. Yes, it does.

Q. Now, you were sent samples to test in this case; is that correct?

A. Yes, I was.

Q. And could you tell the Court what it was that was sent to you?
A. We received a number of different items. They were swabs, collected from a vehicle, a RAV -- Toyota RAV4, as well as control swabs, and a tube of blood from Steven Avery.
Q. And what type of instrument did you use in testing these items?
A. We used the LC/MS/MS instrument.
Q. And could you describe for the jury just exactly what this instrument is and what it tests for?
A. Well, the LC/MS/MS instrument is actually three different instruments that are linked together. The LC stands for liquid chromatograph. And what this does is it allows us to take a mixture of chemicals and separate them into individual components so that they are presented to the mass spec portion, the MS portion, individually.

So a good example of this would be if you had a sack full of marbles, if you will, and you had small marbles, medium size marbles and large marbles. And if you even complicate it more and suggest that the large marbles were both red -- some were red and some were blue.

If you would pass the marbles,

simplifying it, through this instrument, it would separate them out so that initially the small marbles would come out, and then maybe a minute later the medium size marbles, and then a minute later maybe the large blue marbles, and then 30 seconds after that, the red large marbles. So it allows those to be separated and then introduced to the next instrument, which is your mass spectrometer.

The mass spectrometer is an instrument that gives you detailed information about the weight of the chemical that it's analyzing, as well as it applies energy to fragment that chemical into many pieces that presents a very consistent fragmentation pattern, that forms what we call a chemical fingerprint, if you will.

It allows us to, then, search against data bases for what chemicals give you that particular fingerprint, and make the unequivocal identification of the actual chemical. By linking two mass spectrometers together, you are able to do very complex and sophisticated experiments that improves the specificity and selectivity of the analytical procedure.

Q. And is this instrument something that is used in

the field of analytical chemistry?
A. Yes, it is.
Q. Would you explain to his Honor exactly what the field of analytical chemistry is.
A. Analytical chemistry is simply a subset of the overall field of chemistry. And it involves analyzing matter for specific chemical characteristics.

The most simple form of analytical chemistry that we consider is, you are doing one of two things, you are either given a material and asked to figure out what that material is, try to identify it, or at least characterize it chemically; or you might be given a second -- a separate material and asked to identify the presence of a specific chemical in that material. Both of those are different forms of analytical chemistry.
Q. This LC/MS/MS instrument, basically, is this designed to identify chemicals?
A. That's exactly right. It's an instrument that is designed to identify the presence of chemicals.
Q. And does it make any difference what the chemical is that you test for in this machine?
A. Generally, no, as long as the instrument is able

to detect that chemical, it can do the identification.

Q. How long has this LC/MS/MS technology been around?

A. It's been around for decades.

Q. And who would use this type of technology?

A. Well, mainly chemists; although, it's starting to get more and more into the biology area, but primarily chemists are the ones employing it. These could be chemists in not just forensic applications, but also in food science; in agriculture and the petroleum industry; in athletic steroid testing; in medicine, when they are looking at proteins and things like that, trying to map out proteins. Those are just some of the examples of where it is used.

Q. Are there publications available within the scientific community about the LC/MS/MS technique?

A. Yes, there are.

Q. Could you describe for his Honor some of those -- or how many publications there are.

A. There are quite a few. I did a search of what's called the National Library of Medicines Data Base. And in the last 20 years there were over a

thousand specific articles in just their data base. These are published journal articles that dealt with the topic of LC/MS/MS and then there are many, many more that deal just with the simpler LC/MS technique.

Q. Are there any text books on this technology?

A. Yes, there are.

Q. Do any particular ones come to mind for you?

A. Well, as I indicated earlier, I was asked to review one of those textbooks. It's called applications of LC/MS in toxicology. It's a textbook that was published by a scientist from Italy; his name is Aldo Polettini.

Q. And do you take advantage by reading publications and textbooks just to keep up to date in your field?

A. Yes, I do.

Q. And, again, I would like you to explain to the -- and I think you touched on this for the Judge but, again, any articles that you have coauthored or peer reviewed, publications or textbooks in this area.

A. Yes, there are many that I have coauthored or primary authored.

Q. Could you give the Judge an idea of how many and

what it means to peer review, and some of your coauthor experience?

A. As far as numbers that I have authored or coauthored, I believe there's about four or five different articles. As far as peer review, which peer review is simply where a scientist sends a manuscript of their research into a professional journal and the editor of that journal then reviews what -- what they are writing about and then goes out to the field to find experts in that particular area, and asks those experts to critique the work that was done by that scientist that submitted the manuscript.

They usually have a number of suggestions that they send back to the editor who passes them on to the original author. And then they respond to those critiques and ultimately a decision is made whether or not it's worthy of being published in that particular scientific publication.

I'm often asked to be a peer reviewer for a number of the professional journals in my field of study. Usually I have one on my desk at every moment, essentially, to peer review.

Q. Have any of these dealt with the LC/MS/MS

technology?

A. Yes, quite a few have.

Q. And I think you spoke about the availability of publications and the use of this technology, but is it widely used throughout the scientific community, this technology?

A. It is very widely used throughout the analytical chemistry community.

Q. And what other fields -- and I know you touched on this, but I would ask you to amplify a bit on what other fields, besides analytical chemistry, would find use for this LC/MS/MS technology?

A. Well, as I indicated, in environmental chemistry, an area where they have used this technique to test water, soil, or perhaps agriculture products.

It's also used in food chemistry to analyze different foods for contaminants, for example, or to verify that certain things that are supposed to be in that are there at a particular level.

It is used in the pharmaceutical industry when they are looking for new drugs; drug discovery trials, when they are trying to identify new metabolites from drugs.

Again, with proteinomics, which is studying proteins, it is probably the most widely used instrument for that.

And it's used to test athletes for the use of steroids.

It is used to look for residues of explosives after a suspected bomb has gone off.

Pretty much any organic chemical can be analyzed using this technique.

Q. And has the LC/MS/MS technology been subject to any validation studies by the FBI?

A. Yes, it is has.

Q. Could you describe those for his Honor.

A. Well, whenever we have a new technique that's introduced into the laboratory, a new instrument into the laboratory, we basically verify that it performs at the same level that the manufacturer claims it performs at. And then we do a number of studies in which we shoot standards that we're used to seeing, chemicals we're used to seeing on other instruments, to ensure that it gives the appropriate response.

Then we employ, when it's time to actually use that particular instrument for a procedure that we're going to apply to

evidentiary material for a case, we go through a validation study that verifies things such as detection limit. It may verify interferences to that instrument, any matrix affects from the material that we're going to analyze, and a number of other parameters, depending on what type of method we're developing.

Q. Basically, what did the validation studies demonstrate?

A. The validation study simply demonstrates the method's fitness, or the instrument's fitness to be used in the laboratory. It identifies the limitations, if you will, to that particular procedure, so, you, as a scientist can understand where it may not perform at the level that you had hoped it to, or in contrast, it kind of supports that it works in the way that you expected it to work, so.

Q. And has this LC/MS/MS technique been subject to validation studies by other colleagues in your field?

ATTORNEY BUTING: Objection, clarify as to what technique he's referring to, LC/MS --

ATTORNEY GAHN: MS. The LC/MS/MS.

ATTORNEY BUTING: -- generally, you're

talking about, as an instrument?

ATTORNEY GAHN: Yes.

ATTORNEY BUTING: Okay.

Q. (By Attorney Gahn)~ Has the LC/MS/MS technique been subject to validation studies by other colleagues, within the scientific community?

A. Absolutely. Part of validation, in a way, is the fact that it's published. And as I indicated, in the last 20 years there are well over a thousand different articles published by scientists throughout the world, that have used the LC/MS/MS technique.

Q. And do you believe that this technique is a reliable and accurate technique and accepted within the scientific community?

A. Absolutely, it is, yes.

Q. And does the FBI maintain quality assurance measures and procedures to ensure that the testing results are reliable?

A. Yes, we do.

Q. Could you describe some of those for his Honor.

A. We use a number of controls to verify that the instrument is working properly, as well as that any procedures that we use on that particular instrument are performing as they are expected to

perform. For example, before we use the instrument each day, we inject into it a -- what we call a test mix, which is simply a standard of either a group of analytes that we're used to looking at, or in cases in which we're looking for a targeted analyte, looking for a specific chemical, we will shoot just a standard of that chemical daily, to ensure that we're getting a consistent response, day after day on that instrument.

When we're actually running evidentiary material, we introduce negative controls which are simply closely matched to the evidence, the same type of material that we put through the procedure. We know those are supposed to be negative before we start and we make sure they are negative when we finish, in order to accept those results.

Likewise, we run positive controls. These are samples that we know are to be positive, before we start the examination, and we ensure that they are positive when they are finished in order to accept the data that came out of that run.

Q. And you have used the term analyte a few times,

could you please describe for the Court, what you mean by analyte?

A. The analyte is simply the chemical that we're looking for.

Q. And did you use the LC/MS/MS technique to test for the presence of EDTA in the samples that were sent to you in this case?

A. Yes, I did.

Q. What is EDTA?

A. EDTA stands for ethylenediaminetetraacetic acid. And what it is, is it's a chemical. It's a chemical that is known as a chelating agent, which simply means it takes metals out of the environment that it's in and, basically, attaches to those metals so they can't be used as they normally would in their free form.

Q. Could you give an example for his honor about this chelating of this chemical?

A. Well, one place that we see EDTA used is in poisoning cases where, for example, if someone is suspected of having lead poisoning, they will give EDTA into the body to bind up the lead so it can't be absorbed into the body to minimize the toxic effects of that poison.

Q. Where is EDTA found?

A. Well, it's -- it's pretty much found everywhere these days. And I say that because it's the most abundant manmade chemical that's present in the environment. We have a really big problem with it in -- particularly in soil, and in waste water and streams and such, because it's been used so much in so many projects over the past few decades that it's become a real environmental concern.

Q. Why does it pose a problem?

A. Because of the stability, it doesn't go away very easily once it's, you know, as itself. But, then, in particular, when you bind it with a metal, it becomes very persistent.

Q. What is EDTA used for?

A. It's used in a number of products, commercial products such as shampoos, detergents, where it's trying to take the metals out of the water that make your water hard. It will help remove those metals so you get a better cleaning action with those detergent or shampoos.

It is found in the paper industry, to help in the bleaching process, to make the paper whiter. It's found in agriculture products such as some fertilizers. You see it in foods as

preservatives. And, then, of course, we use it in laboratory settings.

Q. Is its chemical composition known?

A. It is, yes.

Q. And have there been scientific techniques or methods available within the scientific community to analyze or test for the presence of EDTA in substances?

A. Yes, there have been.

Q. Could you describe some of those for his Honor.

A. Again, they are in all those different areas, so there are methods that are related to food chemistry that talk about EDTA and the analysis of it in foods, same with water and in soil, in commercial products such as shampoos and detergents; so there are quite a few.

Again, if you do a search on -- in data bases of published articles for methods for EDTA, there are -- I'm trying to -- I believe there are over 20 that deal with just LC/MS techniques. There are over a hundred that have been used that are published methods that are out there in the literature for a variety of techniques.

Q. Now you used the LC/MS/MS technique to test for the presence of EDTA, correct?

A. That's correct.
Q. Are there other techniques available which could also test for the presence of EDTA?
A. Yes, there are.
Q. And would you please describe some of them.
A. Well, the LC/MS/MS is a very advanced instrument. There are simpler forms of the same technique that could be used. For example, the LC is what is known as an HPLC, a high pressure liquid chromatograph. That instrument, attached to a simpler detector than a mass spectrometer, which is called a diode, d-i-o-d-e, array detector, could be used.

Then, you could also use a technique that's called capillary electrophoresis. There are techniques for using gas chromatography. There are techniques for doing what is called nuclear magnetic resonance spectroscopy and --

COURT REPORTER: Excuse me, could you repeat that one more time?

THE WITNESS: Nuclear resonance, r-e-s-o-n-a-n-c-e -- I'm sorry, I misspoke. Nuclear magnetic resonance spectroscopy.

COURT REPORTER: Thank you.

A. And, then, you can take any of those -- nearly

any of those instruments and link them to a mass spectrometer to get the information about the identity of that chemical. It doesn't require, essentially, the LC/MS/MS to do this particular analysis. But, I mean, we did employ it because I think it provides specificity and selectivity that is important in a legal proceeding like this.

Q. Who would have these types of instruments that you described?

A. Any -- Any chemistry laboratory, analytical chemistry laboratory, is going to have at least one of those instruments I talked about.

Q. Have other scientists tested substances for the presence of EDTA?

A. Yes, they have.

Q. And have they published their techniques and findings in peer review articles?

A. Yes, they have.

Q. Could you describe a few of those for his honor.

A. Well, again, we get into the different areas. There are publications in the environment. Environmental studies that have been done looking at the analysis of water, soil. There's agriculture products that have been analyzed by

EDTA.

The commercial products that have been analyzed for EDTA using a variety of different instrumental techniques, the whole gamut: HPLC, GC, capillary electrophoresis and, then, any of those techniques linked with a mass spectrometer.

Q. And did you say that these findings and techniques have been published in peer review articles?

A. That's exactly right.

Q. And, again, please describe for his Honor, what is a peer reviewed article?

A. A peer reviewed article is one --

ATTORNEY BUTING: Asked and answered.

THE COURT: Sustained, I have got that.

Q. (By Attorney Gahn)~ Could someone replicate those testing processes?

A. Yes, they can.

Q. And can the instruments that test for EDTA, shall we say in agriculture or soil, also be used to test for EDTA in biological substances like blood?

A. Yes, absolutely.

Q. What is a blood collection tube?

A. Well, a blood collection tube is the actual

vessel, that when you get blood drawn from you, that's what usually a nurse or a medical professional will put the blood into. It's a small, usually glass tube that is under vacuum. And that vacuum helps draw the blood out of your vein into the tube.

Q. Are there different kinds of blood collection tubes?

A. Yes, there are.

Q. Now, Dr. LeBeau, you prepared a short PowerPoint demonstration; do you believe that would be helpful for the Judge?

A. Yes, it would be.

Q. And would you please describe the different kinds of blood collection tubes available?

A. Well, there are a number of different tubes that are available. And they may or may not have preservatives and anticoagulants in them. We can tell what's in a tube simply by looking at the color of the cap on top of that tube.

The red-stoppered tube, for example, has nothing in it. So when blood goes into it, it's simply blood with nothing added to it. A yellow-stoppered tube has citric acid or citrate in it. Gray-stoppered tubes have potassium

fluoride as well as usually potassium oxalate. And, then, we also have the lavender or purple-topped tube that has EDTA in it.

Blood is put into those tubes. They are mixed up so that any preservative in them is equally distributed throughout the blood. And the reason that we have these preservatives and anticoagulants present in the tubes is that, because of this, this is what's called the clotting pathway.

We know that when we cut our hands or something that the blood will clot to stop the bleeding, most of the time. And that's, in part, largely due to the presence of calcium throughout this cascade that leads to the actual clotting. What the anticoagulants tend to do in the tube of blood is tie up that calcium to prevent it from participating in this clotting pathway.

So, again, if we go back to the red-stoppered tube that does not have any anticoagulant or preservative in it, what happens after some time of that blood sitting around in the tube, with calcium that's present from our natural diet and just normal metabolic pathways in our body, is the calcium helps make those red

blood cells clump together, or clot. And that, of course, makes it very difficult to use that blood sample in a laboratory setting for doing laboratory testing.

So that's why we have tubes like the lavender-top or purple-topped tube containing EDTA. The EDTA structure is listed down on the bottom portion of the screen and simply what EDTA does, as I mentioned earlier, is it binds metals. Takes metals that are present in that blood sample, such as calcium, to stop the clotting, and iron, which is normally present in our diet, and, again, through metabolic processes binds them up so that those metals are no longer available to work as they normally would. And by binding it up, it -- it stops the blood from clotting.

Here we have the EDTA in the red blood cells. Again, the iron is floating freely throughout the blood, initially, as is the calcium. And once those are mixed up, the EDTA grabs on to those metals, calcium and iron, and binds them and forms a metal complex or a chelate, as I mentioned earlier.

But you will notice that there is -- in

that tube, there is still EDTA present, what we call the free acid form of EDTA. That's because they put much, much more EDTA in those tubes than what's actually needed for a standard specimen, for it to work as an anticoagulant and preservative. So you will have excess EDTA present.

Q. And I believe you testified that you received bloodstains from Teresa Halbach's RAV4 to test?

A. That's correct.

Q. And you also received a tube of blood from Steven Avery?

A. Yes.

Q. And was that a purple-topped tube?

A. It was a purple-topped tube, yes.

Q. And that's the type of tube that you just described?

A. That's right.

Q. And did you subject those samples to your LC/MS/MS technology?

A. Yes, we did.

Q. And did you test those samples for the presence of EDTA?

A. Yes, we did.

Q. Would you describe the steps that you took to

validate the method that you used in this testing process.

A. Well, initially, we -- we had to develop the method or we had to ensure that the method would work on the instruments that we were employing for this particular technique. Once that was done, we performed four different validation experiments.

One is what we call our detection limit study. It's simply to determine how low of a concentration, of EDTA, we can detect using our method. We did this two ways. The first way was by taking a solution of EDTA in water and making dilutions of it until we reached a point that we could no longer detect EDTA in that aqueous solution.

Then we took a sample of blood not related to this case, but this blood sample had EDTA in it. It was a standard purple-topped tube that had been filled to the standard level, shaken up. And then we took drops, measured amounts of blood, out of that tube. And, again, we measured to the point that we could no longer detect EDTA.

And as it turns out, with this

particular technique, the smallest volume of blood that we can measure out is one microliter, one microliter is one 1 millionth of a litre. At that one microliter drop, we were still able to find presence of EDTA, using this technique.

Q. And that would be EDTA in a purple-topped tube?

A. That's exactly right. So that was the one step of the validation we performed, which is our detection limit study. We also looked for interferences in normal blood samples that would interfere with this particular analysis, to cause confusion when it came time to interpreting the results. And we did this by analyzing 10 different blood samples, that were collected in tubes that contained other preservatives than EDTA; for example a yellow-stoppered tube, or a gray-stoppered tube, or perhaps a red-stoppered tube.

These are blood samples that were just ran -- from random individuals. And, again, we analyzed that, following this procedure and determined that none of those samples, those other blood samples, had interferences in them that would confuse the results.

Another part of that study was to ensure

that our internal standard, which is simply a control that we put into every sample that we're going to analyze, to ensure that that didn't cause any interferences with our ability to detect EDTA in the samples.

The third step was what we called a matrix suppression study. And this is something that is very well known with the use of the LC/MS technique, especially when you use what's called electrospray ionization mode, which we did in this case. And simply what that means is that there are -- it's a well-known phenomenon that there are other analytes present in a sample, that can suppress the signal of the analyte that you are interested in.

So what could potentially happen is, it makes it look like there's less there than what is actually there. We evaluated that to ensure that we weren't getting any significant matric -- matrix affect. And at the very worse we got was a 33 percent suppression in matrix -- caused by the matrix, which is fairly insignificant.

And then the final study that we did was -- I can't think what the final study was, I'm drawing a blank. Can I refer to my notes?

Q. Sure, please.
A. Oh, yes, also a very important study is the carryover study, which was essentially to determine whether or not, if you analyze a sample of EDTA, does it show up in the next sample that's analyzed. So we evaluated that as well. We did not see any significant carryover effect using this particular technique. And those are the steps that we used in the method validation.
Q. And these steps that you used in the method validation, are these the steps that you normally use in the FBI Laboratory to perform method validation?
A. Yes, exactly, they are.
Q. Would you describe for his Honor, the analysis that you and others under your supervision performed on the specimens, actually in this case.
A. Well, the analysis, your Honor, is simply that we focused our instrument to look for two of the -- two of the products that are on the screen. We looked specifically for the presence of EDTA that was bound to the iron in the blood. And we chose iron over calcium because it is naturally present at about a 10 to 30 times higher amount than is

calcium.

And, then, we also looked for the presence of the free acid form of the actual EDTA. Again, that is because there's so much there in an EDTA tube, that's what you should expect to see the most of, unless it's a case of like a poisoning or something, a metal poisoning.

Q. Did you develop a protocol or standing operating procedure for the analysis you performed in this case?

A. Yes, we did.

Q. And what is a protocol or a standing operating procedure -- standard operating procedure?

A. A standard operating procedure is simply the steps that you take in order to complete the analysis. And it's done to ensure that you -- that it's done consistently time after time. It includes the information, the background information, and all the materials that you need to perform the analysis, much like a recipe in a cookbook. It tells you what you need and, then, the stepwise procedure to actually carry it out.

But it also includes important things like references you relied upon in developing the procedure and includes the limitations of the

method or the results of the validation study.
Q. I'm going to ask if Officer Fassbender would, please, bring you an exhibit, which has been marked Exhibit 434, and ask you to identify it. Thank you.
A. All right. Exhibit 434 is the standard operating procedure that we developed for the analysis of EDTA in dried bloodstains, specifically for this case.
Q. And, again, during this analysis, what were you looking for?
A. Looking for the presence of EDTA in both the free acid form and in the form that's complexed to the iron in the bloodstain.
Q. And did you follow this protocol or standard operating procedure that you developed?
A. Yes. Yes, we did.
Q. Is it unusual for the FBI Chemistry Unit Lab to receive requests to analyze some substance for a chemical and that you have to develop a protocol for?
A. Not at all. Many of the cases that we receive in our unit, in particular, would normally be worked by a state laboratory. But, for a number of reasons, they are sent to our laboratory;

primarily because, either it would be very taxing on that state laboratory to take people off of their normal casework in order to develop a method, validate the method, and then put it into use; or they may -- in other cases, they may not have the expertise or the personnel in order to do that.

So many of our requests that come in are to analyze for unique or new drugs, or to apply a new technique to a particular analyte. And so we're very, very familiar and it's a normal course of business for us to have to develop a method, validate it, and then apply it to a case.

Q. Was there anything in the literature that helped you develop this standard operating procedure that you used in this case?

A. Yes, there certainly was.

Q. I'm going to have handed to you two exhibits which have been marked Exhibits 436 and 437. I ask you to look at those and I ask you, do you recognize those?

A. Yes, Exhibit 436 is a manuscript out of the *Journal of Analytical Toxicology* published in November/December of 1997, that's entitled *The Analysis of EDTA and Dried Bloodstains by*

Electrospray LC/MS/MS and Ion Chromatography. And this is one of the -- this is the primary article that we relied upon in order to develop the method in our particular -- in this particular case.

The second article, Exhibit 437, is from a journal that's entitled *Analytical Chemistry*. And the title of the article is *Determining EDTA in Blood*. And, again, we relied upon this article to help us along the way as we were developing and analyzing specimens in this case.

Q. Do you consider those articles or publications to be peer reviewed articles?

A. Absolutely.

Q. And could someone take those articles and develop a testing procedure for EDTA in blood?

A. Yes, they could.

Q. And if someone wanted to, could they make improvements to the methods addressed in those two articles?

A. Yes, they can.

Q. Could you again just state, what was the date of the second article, Exhibit 437?

A. Yes, that is August of 1997.

THE COURT: For my benefit, these are the

first two listed items under Item 16, references on the -- looks like page eight of the attachment to your submission?

ATTORNEY GAHN: That is correct, your Honor.

Q. (By Attorney Gahn)~ And were the instruments used in those articles similar to the instruments that you used in your testing in this case?

A. Yes, they are similar, but not exactly the same.

Q. Could independent researchers, university research facilities, or other forensic labs, adopt those procedures and develop a protocol for testing of EDTA in blood?

A. Yes, they could.

Q. Did you make any improvements to those articles?

A. We did.

Q. Please describe for his Honor the improvements that you made to the existing protocols.

A. All right. Probably the most significant improvement I think we undertook when we developed our method is, we introduced what's called an internal standard as I alluded to earlier. This is simply, for each sample we're adding a positive control to that actual sample.

It's a chemically modified version of

the same analyte that we're looking for. It's simply made a little bit heavier than the normal analyte. And it allows us to get a very accurate assessment as to if the actual sample itself worked, not just the batch run of samples, but it allows you to assess each individual sample as to whether or not it should pass or fail your quality assurance protocols and quality control protocols you have set up.

We introduced that, which neither of these papers did. We also -- We looked for the presence of the free acid form of EDTA in one of the techniques that -- that the first reference, Exhibit 436, did not look for. So we added an additional test, if you will, to our protocol, that allowed us to kind of take a three prong approach to looking for EDTA in these samples.

And we used -- Furthermore, we used a different LC/MS/MS instrument than what was used in this -- the 1997 article in the *Journal of Analytical Toxicology*. The instrument we used is newer than the one they used in this particular procedure. And improvements have been made that I believe helped us eliminate one of the concerns that they reported in this particular paper, and

that is of carryover of the samples from one sampling to the next.

Q. What is a scientific hypothesis?

A. Well, it's -- it's -- it's an idea that a scientist has that, then, they are going to apply research, if you will, to either show that their idea is accurate or if it's inaccurate.

Q. Did you develop a scientific hypothesis for this case before you did your testing?

A. Well, we did, yes.

Q. And what was that?

A. Again, if I can go to this presentation, the idea was, what we were asked to do is determine if someone took a purple-stoppered tube of blood that has EDTA in it, takes the cap off that tube, and then pours a drop, or many drops out, onto the surface, if someone comes along at a later date, swabs up that dried bloodstain, are we able to, then, find, on that swab, from that stain, the presence of EDTA and EDTA linked with iron.

That's the scientific hypothesis, is that we should be able the find the presence of free acid EDTA, as well as the EDTA that's bound to iron, off of that stain that's on the swab, that's collected from a bloodstain.

Q. And were you able to do that in this case?
A. We were able to perform that analysis, yes.
Q. And what was your conclusion?
A. Well, we -- we did not find any EDTA, or EDTA bound to iron, on the swabs that we received in this case.
Q. Were controls run with each analysis that you ran with the bloodstains submitted to you?
A. Yes, they were.
Q. Explain what controls are.
A. Again, we ran negative controls, these were blood samples that were not put into an EDTA tube and then they were -- samples of the blood were applied to swabs. Those swabs were carried through the whole extraction procedure. They were to be negative from the start and at the end of the analysis they were indeed negative.

We ran positive control samples. We did this two ways. We ran a positive control sample of blood from a lab volunteer who, again, their blood sample was put into a purple-stoppered tube that contains EDTA. That blood sample we expected to be positive at the end of the run and it was indeed positive.

But, additionally, we took the blood

sample that was provided to us from Steven Avery. We put that on a swab and ran that through as a positive control. It should have had EDTA in it because it was in a purple-topped tube, and it did, indeed, have EDTA in it, served as a positive control.

And, then, as I alluded to, the internal standard that we introduce into every sample, that is another control that allows us to assess that that actual sample worked as expected. So that was a third type of control we used.

THE COURT: I would like to stop because I'm not following something. I thought in the exhibit up on the PowerPoint, you said that you took some blood out of a purple-topped tube, spilled some of it out, tested it with the swab, and did not find EDTA or EDTA --

THE WITNESS: I'm sorry, your Honor, if I could just go back. I was asked about the scientific hypothesis that we had for this particular case. And the hypothesis being that, if someone, anyone, were to take a tube of blood that contains EDTA and put it somewhere, put some of that blood somewhere, and then someone else comes along and samples that blood, that EDTA blood should

transfer onto that swab.

THE COURT: It should.

THE WITNESS: Should, yes.

THE COURT: Okay.

THE WITNESS: And the idea is, the whole premise behind our protocol that we developed was that we should be able to find EDTA and EDTA bound to iron on that swab. And our validation showed that we can do that. We absolutely can do that.

Then I was asked about the results in this particular case. And the results in this particular case, with the swabs we received, we did not detect EDTA and EDTA with iron linked to it. So this is specifically for the results on our -- on the case at hand today.

THE COURT: When you say the swabs you received, what swabs are we talking about?

ATTORNEY GAHN: He was sent three swabs, the three that Sherry -- three of the ones that Sherry Culhane testified to, A-8, the swabbing from the ignition, by the dashboard by the ignition.

(Court reporter asked him to repeat.)

ATTORNEY GAHN: A-8.

ATTORNEY BUTING: You want to let him testify as to what he tested?

Q. (By Attorney Gahn)~ Would you tell him?

THE COURT: I think if this line of questioning was designed to elicit that, I didn't get it, so I think you better go back and do it again.

ATTORNEY GAHN: All right.

Q. (By Attorney Gahn)~ What did you receive to test in this case?

A. Okay. We received three swabs, ones that were collect from the RAV4: One swab was reported to have been collected from near the ignition switch in the car, another swab was off of a door pan -- door panel area, and the third was off of a CD case.

Q. And those were sent to you and you subjected those to the LC/MS testing; is that correct?

A. That's correct.

Q. And what were you looking for in those swabs?

A. We were looking for the presence of EDTA in the free -- the free acid form of EDTA, as well as EDTA that's bound or complexed with iron.

Q. And were you also sent a tube of blood from Steven Avery that came from the Manitowoc County Clerk of Court's Office?

A. Yes, I was.

Q. And what -- Did you test that tube of blood?
A. Yes, we did.
Q. And what did you test it for.
A. Presence of EDTA and EDTA bound to iron.
Q. Did you find EDTA in the tube of blood of Steven Avery?
A. Yes, we did.
Q. Did you find EDTA in any of the three bloodstained swabs from Teresa Halbach's RAV4?
A. No, we did not.
Q. Now, would you just relate to his Honor, how that testing process fit in with your original hypothesis in this case that you developed.
A. Well, the idea was, as part of the validation of the method, is that you can actually still find the presence of EDTA, even if it's collected onto a swab and then sent into the laboratory, essentially.
Q. So you were either going to find EDTA, or not EDTA, in the swabs from Teresa Halbach's car?
A. Exactly.
Q. And you did not find?
A. We did not.
Q. Would you tell his Honor about your experience -- No, I take that -- Strike that. Are their

articles about the degradation of EDTA?

A. Yes, there are. There are numerous articles. There's even chapters in books talking about the degradation, or conversely, the stability of EDTA.

Q. And tell the Judge about your experience with the stability of EDTA and any tests you may have run in conjunction with this case?

A. Well, specifically, in this article that we relied upon, *The Journal of Analytical Toxicology*, they talk about it in relation to old bloodstains. They -- They looked at bloodstains that were two years old and were still able to identify EDTA after two years of storage at room temperature.

Likewise, we performed a similar analysis in our lab in which we looked at bloodstains that had been put onto cards, spot cards, EDTA blood that had been placed on the spot cards in May of 2004 and stored at room temperature up until they were analyzed, just last week. And we were able to identify the presence of EDTA in every single one of those.

Q. I'm going to have handed to you an exhibit which has been marked as Exhibit, I believe, 435. And

could you explain to the Court what that exhibit is.

A. This is a copy of the laboratory I -- laboratory report that I issued for this case.

Q. And I would like you to explain to the Court a little bit about the detection level, how low could you go in detecting EDTA in this case?

A. Well, I can explain it two ways. One way is talking about concentration of EDTA. And as I explained earlier, we were able to do decreasingly lower and lower concentrations of EDTA in a water solution.

At that -- Using that technique, we could identify 13 micrograms per milliliter of EDTA. And that's -- it's a number. It doesn't necessarily mean a whole lot unless you are a scientist. But likewise, what we did is we took a tube of EDTA blood and we did spots of that blood, to the lowest volume that we can accurately measure out which is one microliter. And even that one microliter drop of EDTA blood, which is the equivalent of about 1/20 of a drop of blood, even that little amount, we were able to find the presence of EDTA in.

Q. Based upon your training and experience, and

based upon your test results using the LC/MS/MS technique, and based upon all of the data and compilations that you reviewed, and basically the entire case file that you have; do you have an opinion, to a reasonable degree of scientific certainty, whether the bloodstains from Teresa Halbach's RAV4, that you tested, came from the vial of blood from Steven Avery, which was in the Manitowoc County Clerk of Court's Office?

A. I do have an opinion on it.

Q. What is that opinion?

A. My opinion is that the bloodstains did not come from that tube of blood.

Q. Thank you.

ATTORNEY GAHN: That's all I have.

ATTORNEY BUTING: Do you want to take a break now or do you want to start.

THE COURT: Let's take a 10 minute break and then we'll come back to your cross.

ATTORNEY BUTING: Okay.

(Recess taken.)

THE COURT: And, Mr. Buting, at this time you may begin your cross-examination.

ATTORNEY BUTING: Thank you, your Honor.

CROSS-EXAMINATION

BY ATTORNEY BUTING:

Q. Good morning, Mr. LeBeau.

A. Good morning.

Q. Let's talk a little bit about your background. Do you have the CV in front of you?

A. Yes, I do.

Q. As I look at it, it -- if you turn to page -- Do you have anything in here that shows research interest? Do you have a heading that says that, or am I wrong? Do you have a heading like that, a sub-heading that says research interests?

A. I don't notice one.

Q. Well, let's go ahead and mark this.

(Exhibit 438 marked for identification.)

Q. I'm going to show you Exhibit 438, can you look through that an identify it for us.

A. Yes, this is a declaration that I made in another case involving EDTA.

Q. Okay. And that's a case called ***State of California vs. Cooper***?

A. That's correct.

Q. We'll talk about that in more detail later, but attached to this declaration, you had also a CV I believe. And this was filed in -- declaration is dated April 28th of 2004?

A. 2004, that's correct.
Q. Okay. And I recognize that CVs can change from time to time, right?
A. That's right.
Q. And the one that you filed here today, it being 2007, is going to be somewhat different than the one you filed in 2004, right?
A. That's correct, yes.
Q. But in this particular one, you did have a section called research, areas of research, right? Highlight it for you there.
A. Yes, I did.
Q. Okay. And at least as of 2004, you described your -- you listed six areas of research interest, okay? Would you agree with me?
A. Yes, I do.
Q. The first one, which you dated as 1987 and '88 only, was Trace Elemental Analysis of Hair, right?
A. That's correct.
Q. 1989, Statistical Analysis of Suicide Deaths, right?
A. Yes.
Q. 1991, Nebulizer Administration of Cef -- can you pronounce that for me?

A. Ceftriaxone.
Q. That's C-e-f-t-r-i-a-x-o-n-e to follow, right?
A. That's correct.
Q. Some antibiotics for chickens or something?
A. Yes.
Q. Okay. And then, 1991 to 1994, you put Postmortem Redistribution of Drugs?
A. Yes.
Q. And then, at least as of 2004, the only one -- research interest that you put as still present was 1998 to the present, Detection of Drug Facilitated Rape, right?
A. That's correct.
Q. And 1999 to present, GHB and Drug Facilitated Sexual Assault?
A. That's correct.
Q. More or less the same.
A. One's a broader topic than the other, but, yes.
Q. Okay. And would it be true to say that if you were to add this section to your CV right now, updating it to 2007, these would probably say 1998 to present, still?
A. No. No, the research section of that old CV from three years ago, were different topics of research that I had engaged during my course of

study at different universities. So, for example, the last two items, Detection of Drug Facilitated Sexual Assault and GHB in Drug Facilitated Sexual Assault, those were my dissertation topic for my doctorate.

The topic about Trace Elements and Hair, that was an undergraduate research project I did at the Central Missouri State University in Warrensburg, Missouri, was part of a senior level project. The Ceftriaxone in Foul was a graduate research project I was employed upon at my job when I was working at the St. Louis County Medical Examiner's Office. It was a side project that my supervisor asked me to work on with him. And --

Q. So let me just stop you for a second, then. So what you are saying is those research areas we just described are only research that you did while you were engaged in some educational pursuit?

A. In an academic -- towards an academic degree, that's what those specific research projects listed in that old CV.

Q. So in 2004, when you list the Detection of GHB Drug Facilitated Rape as a research area, you

said, 1988 to present, you were still working on your Ph.D at that time?

A. Yes, I was.

Q. Okay. And you have since completed it?

A. Yes, I have.

Q. So, you no longer are involved in any research at all?

A. I'm not involved in any research in an academia type setting. Certainly, we do research to a small scale with cases as we're asked to be involved with them.

Q. Sure. But --

A. Not long term research like you would expect towards a degree.

Q. And when we're talking about academic research, we're talking about publications, peer review, things of that sort, right?

A. Well, that's one part of doing research in academia, that's correct.

Q. Doesn't help much if you are in a laboratory doing some experiment on your own and devising something, if you don't publish it and tell other people what it is, right?

A. Well, I mean, you can't publish everything you do, that's certainly true. But we do publish

methods, for example, that we developed that are unique and not already out in the scientific literature. We will publish --

Q. Okay.

A. -- and put it through the peer review process.

Q. Okay. We'll get into that in a minute. But, as I look at your presentations, the talks that you give, from 1998 to now, looking at the new CV, the huge, huge majority of those presentations are on this topic of GHB and drug induced rape things, situations, right?

A. That's correct.

Q. In fact, you are speaking in just a couple of weeks at a Women's Sexual Violence Seminar, aren't you?

A. I may be, I don't know my schedule that far out, actually.

Q. You don't know that you are speaking on March 23rd?

A. I could very well be.

Q. You haven't written a paper on it yet?

A. I may have. I do quite a bit of training on that particular topic.

Q. So, do I understand, though, that you don't even know that you are giving a talk in -- March 23rd

now?
A. No. What you understand is, I don't know my calendar three weeks out.
Q. Okay. And when I say the great majority of your talks are on that one topic, would you agree probably over 90 percent of the talks that you have given since 1998 are focused on that one issue?
A. It's a topic that I am well recognized in this country for being an expert and so I am invited to do a --
Q. Sure.
A. -- whole lot of training on that particular topic.
Q. And that has been -- As far as peer review of any of your research, that's been it; that's where you have gotten the recognition and the most peer review is on your work on the detection of GHB in sexual assault cases?
A. No, I would disagree with that. It's certainly an area that I have done a considerable amount of publication on and personal research towards my doctorate, but there are numerous other publications that I have been involved with that fall outside the area of GHB in drug facilitated

crimes.
Q. Okay. Let's talk about your -- your experience with EDTA. You have never tested for EDTA before this case, have you?
A. Yes, I have.
Q. When?
A. Approximately 1998.
Q. And was that the O.J. Simpson case?
A. No, it wasn't.
Q. Were you working for the FBI?
A. Yes, I was.
Q. And were you using a protocol?
A. Yes, I was.
Q. And Mr. Gahn forwarded you a letter that I sent, requesting copies of information?
A. Yes.
Q. One of those was a request for any and all protocols that you have ever used testing EDTA?
A. Yes.
Q. You didn't provide that, did you?
A. No, we did not.
Q. All you provided was your current protocol, right?
A. That's correct. Because this is the protocol we used for this case.

Q. Well, how many times have you tested for EDTA before this case?
A. One other time.
Q. One other time. And it was a protocol that you no longer use; is that right?
A. I believe we still use a revised version of the protocol I used in the previous testing for EDTA, but it was not the same type of scenario. We weren't --
Q. No.
A. -- looking for EDTA in a bloodstain, which would, in my opinion, require a little bit different approach --
Q. It sure does.
A. -- to analysis.
Q. What were you testing for in that case?
A. EDTA.
Q. In what?
A. I'm sorry?
Q. In what?
A. In a buffer solution.
Q. In a buffer solution?
A. Yes.
Q. Why would you find EDTA in a buffer solution?
A. Well, as I indicated, it's used in laboratory

settings and it was a case involving allegations of a wrongdoing by a forensic lab employee purposely mixing up a buffer, contaminating it with EDTA, switching buffers. So, we were asked to investigate the buffers to see if they had indeed been switched --

Q. Okay.

A. -- and that's what it involved.

Q. And were they? Did you find evidence of it?

A. I don't recall, actually.

Q. Really. What lab was that?

A. I don't recall.

Q. Wasn't that right around the time when the FBI Lab itself was being challenged and audited for the very same sorts of concerns?

A. No, not at all. We were not audited for purposely mixing up buffers and to -- as a disgruntled employee trying to get back at the organization.

Q. I see.

A. Not at all.

Q. Well, you were audited by the Inspector General of the United States?

A. Yes, we were.

Q. And that was in 1999?

A. I don't recall the date, but it was in the late 90s, you're right.
Q. And it was part of an evaluation of the whole FBI Lab, not just your unit?
A. It was -- It was overall, the practices within our organization and in our laboratory.
Q. And how many different units do you have in the FBI Laboratory?
A. Today?
Q. Or back then.
A. It's going to be a different answer, so.
Q. Well, give me back then.
A. Approximately 25 units.
Q. Okay. How about today?
A. Probably around 30 units today.
Q. Okay. And of those 25 units, the Chemical Unit was one of the units that was audited by the Inspector General, isn't it?
A. Well, all the units were looked at and the practices of the FBI Laboratory were looked at. Our unit was one that the Inspector General came in and specifically was looking at allegations made by the individual that initiated the complaint. His allegations against one employee within our unit.

Q. And --
A. That's how we were looked at.
Q. And the allegation involving that employee concerned a test very similar to what you are doing today, or what you did in this case, that is, a test for EDTA in bloodstains, right?
A. Could you repeat that.
Q. The individual and the reason that your unit was audited by the Inspector General concerned an EDTA test and a bloodstain that was done by your lab, right?
A. That's not my understanding of why our unit was one that was looked at by the Inspector General. You would have to actually ask the Inspector General why they looked at our unit.
Q. Well, you are the unit chief?
A. I am now, yes.
Q. And you are responsible for quality control?
A. I am, yes.
Q. And if the Inspector General audits your lab and comes up with some recommendations or suggestions, you are going to know that, aren't you?
A. Well, when the Inspector General was looking at our unit, I was still an examiner, I was a

bench --

Q. Okay.

A. -- scientist. Since that, there was another unit chief and then I became unit chief. So there were -- there was a number of other managers prior to me.

Q. So you have never read the Inspector General's report auditing your unit?

A. I read the Inspector General's report in -- you know, it was a very large report. I read the executive summary of that report. And I read specific allegations against the individual in the Chemistry Unit --

Q. Right.

A. -- to see what their criticisms were towards him, as a educational lesson.

Q. And that individual -- Which exhibit is this, 437?

A. That is Exhibit 436.

Q. Exhibit 436, that individual is one of the authors of this exhibit, 436, correct?

A. That's correct.

Q. That is Mr. Roger Martz, right?

A. That's correct.

Q. And the audit and the allegations that were

investigated concern Mr. Martz's involvement in an EDTA test on a bloodstain, in a case; isn't that right?

A. One of the areas that the Inspector General did look at was how Mr. Martz testified in the O.J. Simpson case in regards to EDTA --

Q. Fine. Thank you.

A. -- the presence of blood, amongst a number of other things that were allegations made by Mr. Whitehurst (phonetic) against numerous employees in the FBI Laboratory.

Q. All right. The FBI Lab -- Exhibit 436, by the way, this article, that is supposedly a published peer review article?

A. It is not supposedly, it absolutely is a published and --

Q. Sure.

A. -- peer reviewed article.

Q. It is. Let's just get clear who wrote it. Okay. All of the authors are FBI Lab members, right?

A. They were at the time of this --

Q. Sure.

A. -- publication, yes.

Q. Okay. So this article was written by FBI people, correct?

A. Yes.
Q. And it was written after the O.J. Simpson case, right?
A. That's correct, it was.
Q. And in that case, the issue of a possible stain having EDTA in it came up in sort of the middle of the case, right?
A. It did, yes.
Q. And your lab developed a protocol kind of in the middle of that case, right?
A. Yes.
Q. And that was the first time your lab had ever tested for EDTA on a bloodstain, right?
A. I believe that's true, yes.
Q. And how many times after that did your lab ever test for EDTA in bloodstains?
A. Never.
Q. So until this case, the FBI has not tested for blood -- EDTA in bloodstains, again, since 1996, I think this was, right?
A. Yeah, I believe it was 1996 when the O.J. case was going on.
Q. So in -- So 10 years go by, even after the EDA -- FBI publishes this peer review article, 10 years go by before E -- the FBI, again, tests for EDTA,

which is this case, right?
A. That's correct.
Q. And you, in fact, have -- As we indicated in that declaration, Exhibit 438, you have come out on the side of the government against defendants who seek EDTA testing of bloodstains in their cases; isn't that right?
A. No, that's not right.
Q. Didn't -- In the Kevin Cooper case, didn't you object to the testing of the EDTA stain in that case?
A. No, I objected to the technique that was used in order to do the actual testing in regards to how an estimation of the size of the sample --
Q. Okay.
A. -- blood sample was obtained, as well as what appeared to me to be the lack of appropriate controls used by the scientist in this case.
Q. All right. Well, we'll talk about that a little bit more in a minute. Let me -- So, let's get it clear then, ever since the O.J. case, O.J. Simpson case, until this case, of Mr. Steven Avery, the FBI has never tested for EDTA in a bloodstain on any other case in this country?
A. The FBI Laboratory has not received a request to

test for EDTA in a bloodstain from O.J. -- the O.J. case until this case and it's been approximately 10 years; that's a correct statement.

Q. And Exhibit 437, maybe explains why. Do you have Exhibit 437 in there?

A. Yes, I do.

Q. Exhibit 437 points out that there was -- there was some problems in the EDTA test protocol that was used in the O.J. Simpson case, correct?

A. On what page are you referring to?

Q. Well, the bottom of the first page and top of the second, that paragraph, that says, What was wrong with the laboratory testing? Do you see that?

A. I do.

Q. What it says is, "What was wrong with the laboratory testing? First, it was not clear whether the method had ever been used before", right?

A. That's right.

Q. In fact, the method had never been used before that case, right?

A. That's correct. Not the method that we used in the O.J, case, it had never been used in that manner before.

Q. In that manner, correct, for EDTA stains, right, in blood?
A. That's correct.
Q. "Most likely", continuing the quote, "the method was developed quickly under a great deal of time pressure", okay?
A. Yes.
Q. And is that true?
A. Yes, that's true.
Q. And in retrospect, FBI chemists now believe that the EDTA detected may have been injection carryover in the LC/MS/MS instrumentation, right?
A. That's correct.
Q. And so that particular protocol that was developed and published and peer reviewed in -- that you have in front of you as 436, the peer reviews found flaws in this protocol, didn't they?
A. No. Absolutely not. That is, this journ -- this analytical chemistry paper, published in August of 1997, was not -- cannot be considered a peer review of the article that was published in November of 1997.
Q. Well are you --
A. This one is published prior to this one and the

author of this would never have seen this until it was published.

Q. Have you seen any article, any peer review response, anywhere, to Exhibit 436, this FBI published protocol in the testing?

A. Yes, I have.

Q. Where, can you cite to it?

A. Yes, I peer reviewed that article --

Q. Oh, you --

A. -- internally --

Q. Internally.

A. -- because part of the FBI Laboratory's requirements, is before we publish any article --

Q. I see.

A. Excuse me, I'm not finished.

Q. Yes, you are, this is cross; you can explain yourself later, sir. Thank you.

THE COURT: Wait a minute, that's -- that's part of his answer to the question you asked; I'm going to let him complete it.

A. So, your Honor, as part of any publication that employees at the FBI Laboratory put out, we're required to have an additional peer review step conducted by employees, within our organization, to ensure that the science is valid, so we don't

embarrass ourselves before it goes out to a peer reviewer. I was an internal peer reviewer on the article that is in the *Journal of Analytical Toxicology* and I made comments on that article and sent it back to the researchers that were involved in it.

After my comments were addressed, it then went out to the actual journal and that editor of the journal employed some reviewers to look at it. Now, I don't know who those reviewers were and I never saw that review.

Q. As a matter of fact, you mentioned, so the FBI is not embarrassed, the FBI was embarrassed by the EDTA stain test in the O.J. Simpson case, weren't they?

A. I would disagree.

Q. Well, they never did it again, did you?

A. We were never asked to do it again. We don't control the cases that come into our laboratory. A -- Law enforcement agencies ask us for their assistance and if we were able to provide that assistance, we will --

Q. Do you know --

A. -- but if we were not asked to do a test, we don't have control over that.

Q. And, of course, defendants can't ask you to do tests, can they?
A. That's -- That's correct. We are a law enforcement agency. And the funding that we get from the U.S. congress is to support law enforcement investigations --
Q. Okay.
A. -- with the results --
Q. You are aware, though, that, over the course of the year, the last decade, there have been some cases where defendants have sought to do some sort of EDTA test on bloodstains, right?
A. Yes, I am.
Q. Most often post-conviction cases, right?
A. Yes.
Q. Like the Kevin Cooper case?
A. Yes.
Q. And would you agree with me that in every one of those cases that you have heard of, the government has been opposing the use, or the protocols, or the methods that a defendant has used to try and get EDTA stain evidence in, bloodstain evidence in?
A. I don't -- I don't believe they were opposing the idea of testing a bloodstain for EDTA. My

understanding -- and I'm only aware of two cases -- my understanding is they were opposing the approach that was taken by the scientist, that he didn't use good science. The techniques that he employed, the instrumental techniques, as we talked about in direct, these are techniques to identify chemicals. So a chemical is a chemical.

Q. Sure.

A. But if you don't apply good science to getting to that answer, that's what becomes in question. They weren't his -- My understanding is, his approach was not a well validated approach.

Q. And his approach, when you say his, we're talking about Dr. Kevin Ballard, right?

A. That's correct.

Q. At the National -- NMS, what's it called, National Medical Services Lab?

A. That's correct.

Q. And his -- You disagreed with his protocol?

A. I didn't see his protocol; I disagreed with the approach --

Q. Okay.

A. -- that he testified to in the ***Cooper*** case, I believe it was.

Q. Okay. Can you tell us of any lab anywhere in the world that has ever used the protocol that your colleagues published in Exhibit 436?
A. There would be no way to know that. We don't -- There's not a data base that people have to report to us if they are choosing to take a journal in a public -- an article out of a public journal and use it in their own laboratory.
Q. Well --
A. We would never know if they used it or not.
Q. Well, let me just give you an example. Often times, people publish, in fact, there are some articles you cited, on the use of LS/MS/MS for a particular technique, right?
A. LC/MS/MS.
Q. I'm sorry, LC/MS/MS, right?
A. Yes.
Q. And the -- by the way there's a slash between LC/MS/, that's the way it's written?
A. That's correct.
Q. And often times, in academia, what researches will do is, they will take one test that's published and they will test it, report back whether they get the same results, right?
A. That's common when you are dealing with, like, a

breakthrough in a new area of science.
Q. Sure.
A. You might have multiple researchers from different research teams working independently, yet together, to prove that a new scientific hypothesis is actually working as they expect.
Q. Sure. That's what science is, right, the whole idea that you can replicate someone else's study?
A. That is part of it, yes.
Q. And can you tell me of any article anywhere, of anybody who ever studied and replicated, or tried to replicate, the test that's -- or the study that's reported in Exhibit 436?
A. Yes.
Q. Who?
A. Me.
Q. Oh, okay. Anybody besides you?
A. Not that I know of.
Q. Okay. And Exhibit 437, analytical chemistry article entitled, *Determining EDTA in Blood*, they used an entirely different method, didn't they?
A. No, absolutely not. They used a very similar method. The only difference is the -- instead of using a liquid chromatograph on the front end, to do the separation of the components into their

individual components, if you will --
Q. They used a capillary --
A. They used capillary electrophoresis, which does the exact same thing and it's based in a very similar principle, just uses electrical currents and charges to cause the separation.
Q. But the protocol -- the test they did, is not the same as reported in the FBI Lab article, is it?
A. Well, they are doing mass spec, mass spec to actually do the identification of EDTA. And it is very similar to what is published in the independently done publication in the *Journal of Analytical Toxicology*.
Q. And we're talking about this article by Robin Sheppard and Jack Henion, who at that time were associated in some way with Cornell?
A. That's correct.
Q. Do you know them personally?
A. I do not know either of them personally.
Q. Do you know that neither one of them is with Cornell any more?
A. I don't know that.
Q. Okay. But their study was trying to do something more; their study was actually trying to quantitate, see if they could quantitate the

amount of EDTA, right?
A. They were, yes.
Q. And your protocol that you used in this case, which is Exhibit, what, 434? It's up there.
A. The protocol was -- I don't believe I have the protocol.
Q. Well, you're familiar with it. Oh, I have got it with me, I'm sorry. I thought it was just a copy. This protocol, 434, does not attempt to quantitate the EDTA if it's found, does it?
A. No, it does not.
Q. It's simply trying to see if there's any way you can detect the presence of EDTA.
A. That's exactly right.
Q. Okay. This protocol, which is Exhibit 434, has a date of February 15th, 2007, right?
A. That's correct.
Q. And until that time, until this protocol was developed for this specific case, the FBI had no existing protocol to test for EDTA in a bloodstain, correct?
A. I don't believe that to be correct, no.
Q. Well, let me go back for just a minute, because perhaps we have been misinformed. Maybe I have been misinformed. When were you first contacted

by any prosecutor, law enforcement agent, or whatever, involved with Mr. Avery's case?

A. In December of 2006.

Q. So between February of 2006 and December of 2006, nobody from the State contacted you, right?

A. Between February of 2006 and December 2006, not that I recall, no.

Q. Nobody called you to say, hey, we have got some -- a case where somebody is claiming that evidence was planted and we have some bloodstains in this vehicle we would like you to test for EDTA; is that right?

A. That's correct.

Q. It wasn't until December that somebody first contacted you from the prosecution team, right?

A. To my recollection, yes.

Q. That would be Mr. Gahn?

A. That's correct.

Q. Okay. Is there any reason why you would have been unable to develop a protocol like this any time between February of '06 and February 15th of '07 when you actually did develop it.

A. No.

Q. So if the State had contacted you a year ago and said, hey, we would like to test for these

stains, we know this guy is claiming that it was planted, we want to rule out this ridiculous defense; you could have developed a protocol any time within that year, right?

A. Yes, we could.

Q. Okay. Now, when you spoke with Mr. Gahn in December, what did you tell him about whether you could do this protocol?

A. I said we could.

Q. Did you tell him how long it would take?

A. I probably gave him a estimate about how long it would take us to get to it.

Q. And what was that estimate?

A. I generally say about four to six months.

Q. All right. And did he explain to you that, hey, we have got a trial date coming up on February 5th, that's not going to work?

A. He did.

Q. And did the he ask you for your fastest -- we're talking December now -- did he ask you what's the fastest turn around you could possibly give us to get this test done?

A. I believe he did.

Q. And you told him three to four months at that time?

A. I don't know what my response is, but it was probably in that range, three to four months.

Q. And one of the reasons you told him that was that you had no working protocol that would be allowed to be used in your accredited lab?

A. I think that's the message getting a little mixed with an in between messenger. What I told him was, that since we had moved our laboratory in 2003 from Washington D.C. to Quantico, Virginia, we had acquired a number of new instruments and a number of the instruments that we had at the old laboratory did not come with us.

So what that involved is, if we had not used any protocol that moved with us to the new laboratory, we had to essentially revalidate, to some extent, if we were putting it onto a new instrument that it, you know -- the instrument had never been used before, for this particular analysis.

So my message to Mr. Gahn was that we had not used the protocol since the O.J. case and that we would need to bring it up to standard with today's accreditation standards for our accrediting value; we would have to make sure that it met all of our internal quality assurance

requirements, because since the O.J. case we have gone through four different quality assurance systems in our laboratory, each one is another step up --

Q. Sure.

A. -- as far as requirements. So we had to insure that this protocol that was used in the mid-nineties met the standards of 2007. That's essentially what it was.

Q. Okay. And you told them, because of all of that, calibrating the instrument and validating a new protocol, it would take a matter of months, right?

A. Yeah, that's my general response to any time we're asked to develop a new method and validate it. I generally say four to six months because we never know what major cases are going to happen in this country that can, you know, divert our resources to other investigations.

Q. Okay. But then in January somebody else contacted you; is that right?

A. You will have to refresh my memory.

Q. Did anybody else, in January, contact you, again, to see if that whole time frame could be changed?

A. I really -- I don't know when it was, but I did

get a call from one of our special agents in the local field office asking me if we could help out on this case. But as I explained to him at the time is we had already agreed to help out on the case and that we were going to start doing something that's rather unprecedented for us. We were actually going to start working on the case before the evidence actually got to us, meaning, we were going to start doing the method validation work, anticipating that this evidence was actually going to show up.

Q. So that -- unprecedented is the word you used, right?

A. Unprecedented in that we actually start to do work on a case before it shows up into our laboratory.

Q. And tell the Court what changed, how it is that in December it was going to take three to four months to develop a protocol, validate it, calibrate the instruments and suddenly, now, the time frame was shortened to a matter of three or four weeks?

A. The time frame wasn't shortened, there were no guarantees that we would get it done, never made a guarantee that we would. But what changed was,

simply, we applied ourselves to that and no other case. Myself and some of my staff, this is what we worked on. And we worked long hours, there were weekends involved. There were, you know, more than the standard normal hours of operation.

That's what happened, you know, we decided that we would help out. We committed that we would work out on the case and we would try our best to complete all of the work that was required in order for it to be here during this court proceeding. But, again --

Q. Okay.

A. -- we could have failed, quite honestly.

Q. And, by the way, you mentioned long hours, does the FBI Lab run 24 hours a day?

A. No, it doesn't.

Q. What are your normal hours?

A. 7:30 to 5:00.

Q. In the month of February, did you ever arrive at the office or the lab before 7:30 in the morning?

A. Yes, I did.

Q. What time?

A. Probably 7:15, 7:00.

Q. So the earliest you ever arrived was 7:00 a.m.?

A. The laboratory opens at 7:00 a.m.

Q. Okay. But in this case, there were actual analysts working even earlier than that, right?
A. No.
Q. Like 5:00 in the morning?
A. No.
Q. All right. We'll look at some of these sheets later, perhaps I'm just misinterpreting them. So, at any rate, when did you tell Mr. Gahn that you thought, hey, I can get this done quicker if we work weekends and apply ourselves?
A. I never told him that.
Q. You never told Mr. Gahn that you could get this test done before -- or in time for rebuttal of the State's case?
A. No, like I explained, I said we would try our best to get it done, but I never guaranteed we would.
Q. But while you were doing it, you knew that you had the time pressure of the trial already beginning, right?
A. Yes.
Q. In fact, the protocol wasn't validated until February 15th, right?
A. No, that's not -- that's not correct.
Q. Well, what's the date of February 15th on there

mean?
A. That's the date the protocol was issued.
Q. Okay.
A. If I can, I can explain the process we go through to bring our --
Q. Go ahead.
A. -- protocol on line. The first thing we have to do is we have to develop the method. And in this case we had the luxury of having a published reference to go to. So we didn't have to start from scratch. We simply went to that method, we used the same parameters that are published in this paper from the *Journal of Analytical Toxicology*, the same parameters.
Q. You're talking about -- So we're clear, you are talking about the form of protocol that the FBI used in the O.J. case, right?
A. Well, this isn't exactly the protocol that was used in the O.J. case. This is not exactly, there are things done in this paper that were not done in the O.J. case.

THE COURT: Exhibit number what?

ATTORNEY BUTING: 436.

THE WITNESS: 436, yes.

Q. (By Attorney Buting)~ Okay. So you looked at

that and then you worked off of that to develop this new protocol?

A. Well, we essentially set up our instrument so that it was giving results comparable to what they were talking about in this paper, meaning, just injecting standards of EDTA into the instrument, not with blood or anything.

Q. You can tell us when those first -- those first steps began?

A. That was very late January into early February.

Q. Okay.

A. And then we -- after we have the instrument working the way it's supposed to work, set up, we start our actual validation steps. And this is, as I described earlier, these are the steps to ensure that the method is fit for it's intended purpose. For us to identify any limitations in that particular procedure that we can then use if we're trying to interpret data --

Q. And on -- And on what date was that protocol validated, in your opinion.

A. All of the validation work was done before the middle of the month, before the 14th of February.

Q. Okay.

A. And then it has to go through a review process --

Q. All right. So --
A. -- by scientists that are not involved in the actual validation study. So an independent group of scientists looks through all the validation data and to sign their name that they agree with the work that was done and the findings of the validation study.
Q. Let me stop you there for one second. A group of independent scientists, you are talking about FBI people?
A. That's right.
Q. Not outside independent labs, right?
A. That's correct.
Q. Not other academic researchers, right?
A. Yes, that's right.
Q. And this protocol, for instance, has not been peer reviewed like it would be if it's published like -- like our Exhibit 436, right?
A. Well, the changes were very minor from off the published --
Q. Sir.
A. -- protocol.
Q. This protocol, Exhibit 434, was -- has not been peer reviewed by anybody outside of the FBI Lab; is that right?

A. Sir, very few of our protocols are reviewed by anybody --

ATTORNEY BUTING: Judge --

A. -- outside the FBI Laboratory.

THE COURT: He's entitled to an answer to his question.

A. No, this was not peer reviewed by anyone outside of the FBI --

Q. Thank you.

A. -- as it's written here.

Q. That's right. And that protocol did not arise out of any kind of ongoing research, independent of this litigation, right?

A. I'm not sure I understand your question.

Q. The development of this protocol was not something that just came out of independent research your lab was doing on determining whether or not you could find EDTA in bloodstains.

A. That is correct. This was generated specifically by the request to do the analysis of evidence in this case. That's why we developed this --

Q. Sure.

A. -- protocol.

Q. So it's specific to this litigation, right?

A. And then future cases, if we get the request.
Q. And there were no industry standards that bound you to this particular protocol, right?
A. No, I disagree. There are certainly standards that we have to employ that are based on the FBI Laboratory's quality assurance program.

And those are very stringent protocols and requirements that are, in essence, based upon our accrediting body's requirements. And that, we have actually stepped up to a more stringent accreditation program where we're following what's called the International Standards of Operation or ISO protocols. And --
Q. Let me stop you there for a second, because most -- a lot of your testimony on direct was about this LS/MS/MS technique -- I'm sorry -- LC/MS/MS technique, right?
A. That's correct.
Q. Just so we're not confused, I'm not attacking that particular instrument, okay?
A. Okay.
Q. I'm not challenging the ability of that instrument to find, in some circumstances, certain chemicals, okay.
A. Okay.

Q. Are you with me?
A. Yes.
Q. So, what I'm trying to focus on here is the use of that instrument to attempt to find EDTA in a bloodstain, all right?
A. Yes.
Q. And that's what your protocol, 434, was developed to do, right?
A. Yes, it was.
Q. And you were not bound by any kind of industry standards in the development of that protocol's hypothesis that you were trying to find EDTA in a bloodstain?
A. I'm sorry, but I'm not sure I follow you.
Q. It's probably a bad question, I apologize. It's my fault. Let me go at it this way. As far as you know, is there anybody else in the country who is doing testing for EDTA stains -- I'm sorry -- EDTA in bloodstains.
A. Yeah, I believe that the lab you referred to earlier, National Medical Services, is offering that.
Q. And that's Mr. Ballard, right?
A. He's at least one of the scientists that perform that analysis. I'm not aware if any others do or

not.
Q. Okay. And you are not aware of any other lab that does?
A. I'm not aware of any that do, and the only reason I'm aware that National Medical Services offers it is because of the ***Cooper*** case, as we talked about earlier.
Q. Would you agree there is a rather conspicuous void of research in the last 10 years, since Exhibits 436 and 437 were published?
A. A void in the research, there certainly have not been any articles that I'm aware of, published in the last 10 years --
Q. Okay.
A. -- specifically looking at EDTA in bloodstains.
Q. We talked earlier about how I asked, did you produce any other protocols that you used for testing EDTA; why did you refuse to do that?
A. We have an attorney that's employed in our laboratory and I was instructed to not turn over any other protocols, other than the one that was used in this particular case, because according to the attorney, that's the only one that's relevant to this case.
Q. Okay. So you had some internal attorney make the

decision for you?
A. That's correct.
Q. All right. We talked about, I think you agreed that the protocol that was used in the O.J. case was developed rather hurriedly, mid-trial, right?
A. It was -- Again, it was taking a procedure that we had in place, which is simply looking for chemicals, specific chemicals in a material, and we do this all the time at the FBI Laboratory. We -- Many, many cases, we are asked to look at a stain -- I'll keep it very simple -- a stain, and determine if a specific chemical is in that stain. So, in that general line of thought, we took our general procedure that we would use to identify an unknown chemical in a stain, and apply that in the O.J. case.
Q. And --
A. Now --
Q. Would you agree --
A. I'm sorry, what had to be done quickly, to finish the answer is, we had to look specifically for EDTA, so we had to set the instrument up so that it was targeting EDTA.
Q. And in doing that, quickly, in order to be used in the O.J. Simpson case, you didn't employ all

of the four -- I forget what you called it -- factors in validation?

A. Well --

Q. Have I confused you or --

(Court reporter couldn't hear.)

Q. (By Attorney Buting)~ Have I confused you? Do you know what I'm talking about?

A. I do.

Q. Okay. You went through four, what do you call those, factors?

A. Well, they are different variables in the validation protocol.

Q. And one of them you forgot today until you looked it up, right? Do you know what I'm talking about now?

A. Yes I drew a blank, that was carryover. But --

Q. Those are four experiments, I think, is what you called them, right?

A. Yes, four different areas that we're evaluating on the procedure.

Q. Detection limit, right?

A. Yes.

Q. Interferences from normal blood?

A. That's correct.

Q. Matrix suppression?

A. Correct.
Q. And carryover?
A. Yes.
Q. And, in fact, in the O.J. Simpson protocol that was used, as you went back and looked at it, you discovered, oops, there might have been some carryover that was affecting the results in that case?
A. That's not entirely accurate.
Q. Well, didn't -- Well, okay. Let me ask -- Why don't you explain; didn't you, in fact, conclude that there -- that carryover was a factor in some of the results that you were getting?
A. For this case, or for --
Q. For the O.J. Simpson protocol.
A. No, I didn't work on the O.J. Simpson case, so I didn't --
Q. Well, you just studied it in order to develop this protocol, right?
A. No, I did not look at the O.J. Simpson case and I did not look for EDTA in the bloodstain from that case.
Q. But you looked at Exhibit 436?
A. Yes, I did.
Q. And 436 expresses concerns about possible

carryover affect in the protocol, right?
A. That's correct, it does.
Q. And it's your testimony that you don't know that that was, alternately, the FBI's explanation for the results that they got showing EDTA in the O.J. case?
A. No, that's not my testimony. My testimony was that I didn't -- you said, when I looked at the O.J. Simpson case; I didn't work on the O.J. Simpson case.
Q. Right. What I'm saying is, your testimony today is that you don't know that scientists went back and looked, after the O.J. case, try and explain, hey, why are we getting these EDTA results and concluded it was probably carryover?
A. Well, you know, to be accurate about it, it was discovered in the middle of the trial, when the evidence was being presented in the case. There was a break over the weekend and the scientist that was doing the work, came back to Washington, and did some additional tests and realized that what he was seeing as a very small blip of EDTA in the bloodstain, was actually instrument carryover --
Q. Okay.

A. -- from a previous sample, showing up in the next sample. And he did experiments and he proved that to be the case, that was in the middle of the trial --

Q. Okay.

A. -- not for this paper.

Q. Okay. But --

A. This paper supported those findings that he had during that case.

Q. And in that trial, your laboratory offered evidence, based on a protocol, that in the middle of the trial, your own scientist determined was flawed, right?

A. Could you repeat that?

Q. In that trial, your laboratory, the FBI, offered a brand new protocol, never used before, and in the middle of the trial, your own scientist discovered that it was flawed.

A. No, absolutely not. In the O.J. trial, I don't know that we offered a protocol. I have no reck -- I have no knowledge of that, whatsoever. I don't believe that he said it was flawed; he was explaining the result. That doesn't mean he did not identify EDTA, or the lack of EDTA, but he did some additional validation studies in the

middle of the trial.
Q. Correct.
A. That's correct. And he reported that back to the Court.
Q. And so he -- So, your laboratory offered evidence and opinions, on a test, that later validation studies, in the middle of the trial, proved to be not completely accurate, because there was carryover; isn't that right?
A. Again, I -- I -- I disagree.
THE COURT: Hold on a minute. This isn't the jury, this is me.
ATTORNEY BUTING: Okay.
THE COURT: And I think I have got the drift here.
ATTORNEY BUTING: All right.
THE COURT: So we can move on.
Q. (By Attorney Buting)~ Well, there's another case that you were involved in in which a protocol was developed rather hurriedly; do you know which one I'm talking about already?
A. I -- There are many cases we --
Q. Okay.
A. -- we work on that the protocols develop quickly.
Q. Let's talk about the William Sybers case. Are

you familiar with that one?
A. Yes, I am.
Q. ***Sybers*** is S-y-b-e-r-s ***vs. State***, the citation is 841 Southern 2d, 532, 535 to 40, Florida App. 2003, just giving the cite for the Judge and the record, okay.
A. Yes.
Q. And this was a case in which a medical examiner was accused of having poisoned his wife with a certain chemical. And the accusation was that the charge arose about nine years after she had died, right?
A. That's correct.
Q. And her body was exhumed and tested for this particular chemical, right?
A. Yes, it was.
Q. And, I'm sorry, but maybe you can pronounce it for me?
A. It's called succinylmonocholine, s-u-c-c-i-n-y-l-m-o-n-o-c-h-o-l-i-n-e.
Q. So this succinyl drug was tested by you -- I'm sorry, some embalmed tissues and organs were tested by you?
A. Ultimately, they were tested my me, yes.
Q. Based on a protocol -- You had never tested for

that particular drug before, had you?
A. No, I had not.
Q. So, you developed a protocol to test for that particular drug and that particular case -- for that case?
A. At the request of a court, yes, we did.
Q. Much like today, where you developed a test for a particular case?
A. Well, it was a little different; in that particular case another laboratory had initially found this chemical in the remains of the alleged victim in that case. And --
Q. And just tell the Judge which laboratory that was?
A. That was National Medical Services.
Q. And let's tell the Judge which doctor or scientist.
A. It was Dr. Kevin Ballard was the scientist on that particular case.
Q. And what he did, and you then, also, tried to replicate, with a slightly different test, right?
A. Well, it was -- it was significantly different.
Q. But in both instances, Doc -- you basically came to the same conclusion as Dr. Ballard, which was, there was evidence that this woman had been

poisoned with this drug; isn't that right?

A. Not exactly what -- the conclusion I came to was, we were asked to verify if this chemical, which I will just call SMC, was present in her specimens. And National Medical Services had found this chemical in every specimen they collected from her, from the heart, to the kidney, the liver, the brain, and fat tissue.

We were not able to confirm it in any of them, except for one or two specimens. So we did confirm that this chemical was present in those specimens that were collected from an exhumed body.

Q. Let me stop you there for a second. Because you weren't able to find everything -- you weren't able to find this chemical in as many tissues and fluids as Dr. Ballard had found, right?

A. That's correct.

Q. And when you were challenged about that, in court, you said, well, it's probably because there -- he had different detection limits than I did.

A. Exactly. Exactly.

Q. Which means that you can set up these tests in machines in a way that -- that you set the

threshold as to when something is considered detected and when it's not?

A. No. No. I mean, you could, theoretically, but what that means is, in analytical chemistry, our instrumentation that we use, we have a pretty significant break through about every three years in the quality of instrumentation. And what that equates to is, how low we can go.

So, his instrument that he used in that particular test was very state-of-the-art instrumentation. In fact, we didn't even have one at the time and got one at a later date. But his instrument was much more sensitive to these things. It had nothing to do with any settings that we do in the laboratory. It's just the technology --

Q. Technology --

A. -- you are using at the time. And what he used, it was a much more sensitive technique than what we had.

Q. And when you developed whatever protocol you did use in that case, you did so knowing that there had never been a study of how this particular chemical works, reacts, breaks down in a body that's nine years old, right?

A. No, no. I disagree again. There were studies and, I mean, you are calling up on memory from a number of years ago here, but there were studies that were published that dated back decades before that case, in which they did demonstrate the breakdown of the parent drug, which is called succinylcholine.
Q. Right. But none of them involved a test of what it would look like nine years later when you exhume the body, did it?
A. There would never be a study like that, so.
Q. Right.
A. Yes.
Q. And just like there is no study on what and how any EDTA would react or degrade or not degrade in a 9 or 11 year old blood tube, or blood vial, is there?
A. Well, again --
Q. Simple question.
A. I'm sorry, but I disagree about that. There are --
Q. Oh, there's a study that describes the degradation of EDTA in a blood vial that is 9 -- or in your case -- 11 years old?
A. I'm not aware of any studies, no.

Q. Okay. That's fine. That was my question.
A. Okay.
Q. Now, in that ***Sybers*** case, there was a conviction, right?
A. There was, yes.
Q. A man was convicted of poisoning his wife, right?
A. That's correct.
Q. After the conviction, it was reversed on appeal, right?
A. I believe it was, yes.
Q. And after that, additional scientific tests were done that proved, although you thought the science was good at the time, subsequent tests proved them no longer to be accurate and correct; isn't that right?
A. Not exactly, no.
Q. I'm showing you Exhibit 439, take a moment and look at them.
A. Okay.
Q. This is a filing notice; it is entitled notice to the Court?
A. That's correct.
Q. ***State vs. William*** Syber -- ***Sybers***, right?
A. Yes.
Q. And the -- You agree with me that this notice

states, and it has the case number, the notice states, the purpose of this filing is to notify the Court and the defendant that recent scientific testing conducted by National Medical Services and the Federal Bureau of Investigation Laboratories has discovered that the findings specifically related to this defendant and the testimony of the experts from each of these laboratories, though believed to be correct at the time of the testimony, can no longer be relied upon.

The findings of the presence of succinylmonocholine in the specimens tested are believed to be accurate and correct; however, the opinions that the succinylmonocholine proves to a scientific certainty the prior presence of or injection of succinylcholine are not correct, right?

A. That's what it says, yes.

Q. And that's what, ultimately, your own lab determined, after you convicted -- helped convict a man, right?

A. No.

Q. Okay. Let me ask, do you disagree with that finding?

A. I absolutely do.
Q. Okay.
A. Again, we were asked to confirm the findings of the first lab, and we did, in some of the specimens. And during that trial, one of the specimens that we did not find succinylmonocholine in was actually the only specimen that the first lab never touched. Are you following me?
Q. Yeah.
A. So, at that trial, I said, of any specimens that are of relevance here, because the allegation was that the first lab had contaminated everything with this drug, I said the one that is of most relevance is the one that was never in their lab and that's negative.

Now, we were able to find succinylmonocholine in the tissues from the victim in the case, the ***Sybers*** case. And as this -- As you clearly said, the finding of the presence of succinylmonocholine, in the specimens tested, are believed to be accurate and correct, and I stand by that.

What we did, years later, again, we had new technology come into our laboratory and in

applying that new technology to the same method, we were going through another validation study to ensure that with this new instrument we were still able to use this method, and in doing so, this more sensitive instrument was now picking up traces of this same chemical in specimens that were collected from people that had never been exposed to that drug. So this was a --

Q. So you dug up bodies?

A. No, I did not dig up bodies.

Q. Well, you looked at other dead bodies, tissues from other dead bodies, and you found the very same chemical, right?

A. We were provided specimens from Washington D.C. medical examiner cases. And all of those cases we had a very good history on what medications they may or may not have been given. And we used that information to come up with the end result that our laboratory was able to find traces of this particular chemical in non-embalmed --

Q. Okay.

A. -- non-embalmed specimens that were collected from people that had never been given the parent drug, succinylcholine.

Q. People that had never been poisoned.

A. Well, it's not a poison, it's a drug that you use, clinically, to paralyze the muscles in the body so that you can intubate them.
Q. I understand that, sir.
A. People have to be on a respirator, normally, in order to live through that because the diaphram gets paralyzed.
Q. I understand that there's a legitimate reason for the drug, but what Mr. Sybers was charged with and what you testified on behalf of the State about was that the presence of that drug, a metabolite of that drug, actually, proved that the drug itself had been given by Mr. Sybers?
A. That's right. And that was based on the science, the knowledge of the science at the time --
Q. Fine.
A. -- of the testimony.
Q. And the science changed a few years later. And you had to withdraw your findings in that case, your opinion in that case.
A. Yes, science always changes; that's part of it.
Q. All right. Let's go to the ***Cooper*** case for a moment. You filed the affidavit that we saw earlier, right? In that case, right?
A. I'm sorry, I don't --

Q. I may have taken --
A. -- have a copy?
Q. I'll bring that back to you in a minute. I'm not actually going to refer much to it, but my point is, in that case, you didn't actually do any testing?
A. Oh, that's correct, yes.
Q. You were just brought in at the beginning to give an opinion about whether or not Mr. Ballard's tests were valid -- testing procedure was valid?
A. Yeah. And, again, I didn't even look at data that he generated on that case. I was asked to review his testimony and what he testified to as his approach and then make a declaration as to whether or not that I felt that that was an appropriate approach that he took.
Q. Okay. So you disagreed with Dr. Ballard in that case?
A. With the approach that he took, yes.
Q. Okay. But you agreed with Dr. Ballard in the ***Sybers*** case?
A. Well, I guess I agreed and disagreed.
Q. Well, you confirmed some of his findings, didn't you?
A. Yeah.

Q. And you rendered an opinion like he did, that that poor man, Mr. Sybers, had poisoned his wife nine years earlier?
A. I agreed that we were able to find succinylmonocholine in the specimens that we collected from the alleged victim in that case.
Q. And didn't you render an opinion that that finding, to a reasonable degree of scientific certainty, allowed you to conclude that Mr. Sybers had injected the parent drug in his wife?
A. I never said, in testimony, under oath, that Dr. Sybers injected his wife with succinylcholine.
Q. But you did say that the presence of the drug you -- the chemical you found, was consistent with someone having administered the parent drug to Mr. Sybers' wife before she died?
A. Yes, I believe that to be true.
Q. Okay. And, by the way, you interned with National Medical Services, S.C., right?
A. Yes, I did, for about three months in the summer of 1998 -- or I'm sorry, 1988.
Q. So you have worked quite a bit with Mr. Ballard?
A. I'm sorry, 1987.

Q. Okay. So have you worked quite a bit with Mr. Ballard?
A. I don't believe he was employed with National Medical Services when I did my internship there.
Q. All right. The Kevin Cooper case was a case similar to this in the sense that an allegation was made that a bloodstain of his, the defendant's, was placed on some kind of crime scene evidence, right?
A. Yes, that's correct.
Q. I'm showing you Exhibit 440, this is the EDTA testing order ultimately approved by the Court in that case, right? Take a minute and look at it.
A. Okay.
Q. Okay. And the test protocol developed there was sort of a compilation of testimony by a number of experts in front of this Judge Marilyn Huff, United States District Court, Southern District of California, right?
A. I haven't read this in detail, so I'm not sure.
Q. Well, are you telling me, then, that when you looked for resources in February of 2007, to rely on, or references to look at when you developed your own protocol from this case, that you did not review the protocol that was used in the

Kevin Cooper case?
A. That's correct, I did not.
Q. Instead, you relied just on the FBI's own protocol from 10 years earlier.
A. No, I relied upon my education and training, my experiences, to make a decision as to what was the most appropriate approach to take in the request that we had in front of us for this particular case.
Q. But in terms of protocols to detect EDTA in a bloodstain, you looked only at the FBI's own protocol from 1997?
A. No, I did a literature search as -- for published methods on EDTA, in particular for bloodstains, and the only two references I was able to find that were significant in my opinion were the two that we talked about earlier that are exhibits --
Q. 436 and 437?
A. Yes.
Q. Both written -- or published in 1997?
A. That's correct.
Q. And so this order, exhibit -- what are we up to -- Exhibit 440, is dated August of 2004, right?
A. Yes.
Q. And you were aware of the ***Cooper*** case because you

had provided an affidavit for it --
A. Yes.
Q. -- right?
A. Yes.
Q. But you are saying that when you developed the protocol for Mr. Avery, you did not consider the protocol as been developed, ultimately, with the Court's approval in the ***Cooper*** case?
A. As far as I know, it was never a peer reviewed, published protocol. And, as I stated earlier, my affidavit in this case said I disagreed with his approach, so that would imply I disagreed with the protocol he used. So I'm not sure why I would --
Q. Well --
A. -- consult that as a reference to use in developing a protocol for ourselves.
Q. Well, because, did it ever occur to you that the Court had taken your testimony or your affidavit or declaration, as well as the defense declaration, and then taken all this testimony and had gone through all this work for about a year to develop this testing protocol, and you never looked at it?
A. No.

Q. All right.
A. I wasn't aware of that.
Q. Okay. And when you developed this protocol, you never came to this Court and suggested, hey, this is how we think we're going to do it, do you think this is going to be a valid approach in order to allow the evidence or the opinions to be admissible?
A. No, we never do that, sir.
Q. You are the FBI, you do things your own way.
A. No, it's our job to independently develop a procedure and put it through the required steps of validation --
Q. Let's talk a little --
A. -- as -- I'm sorry -- as defined by our accrediting body.
Q. Okay.
A. And, then, to present that in front of the Court, who is the gatekeeper, as you know, as to whether or not it should be allowed in.
Q. Okay. The exhibit in front of you describes a protocol that's done under what's called double blind procedure; are you familiar with double blind?
A. I am, yes.

ATTORNEY GAHN: Your Honor, I would just like to make a clarification here. I understand this to be an EDTA testing order. Could counsel lay a foundation that this is a protocol. Seems to me this talks about the order of testing, who gets it first, what do they get, but to refer to this as a protocol, I would like a bit more foundation.

Q. (By Attorney Buting)~ All right. Well, I will accept the amendment of this, not as a protocol, but as a testing order prepared by a court in the ***Cooper*** case. All right.

A. All right. But, again, I have never read this, so --

Q. Okay.

A. -- I feel like I should take time to read it if you are going to question me about any of the science and the specific steps in it.

Q. Okay. Well, let's -- Rather than do that, let's just move on to this issue of double blind testing; what is double blind testing?

A. Double blind testing is essentially a proficiency test or competency test that's done so that the person taking the test doesn't know the results while they are taking it, doesn't know the right answer, and also the person administering the

test doesn't know the right answer. It's an independent system.

Q. And what that's, in part, designed to do is to get rid of any kind of potential bias that the tester may have, right?

A. That's true.

Q. That if the tester thinks that he's being asked to find a particular chemical in a particular sample, there may be some examiner bias potential?

A. Yeah, that's true.

Q. And so, double blind means that they are given these examples, samples, they don't know whether it's a control, they don't know whether it's a swab from the RAV4; they don't know what it is, right?

A. That's true.

Q. They just test it for the presence of EDTA?

A. That's right.

Q. You didn't do that in this case, did you?

A. Yes, we did.

Q. You did double blind testing?

A. We did blind testing, not double.

Q. And blind being what --

A. Did blind testing. I'm sorry.

Q. Blind being in what manner?
A. Well, it was before we analyzed the evidence in this case, I had one of my employees prepare 10 swabs. And some of those swabs had EDTA blood on them and some did not. And then myself and one other scientist were randomly assigned those five swabs.
Q. Are you talking about the validation test?
A. No, sir. I'm talking about a competency test, which was in that binder that we sent to you.
Q. Well, let me -- I'm directing you to the test in this case, on the evidence.
A. Well, you asked me if we did any blind testing on this case. And my answer is, yes, we did, and I was explaining that.
Q. Go ahead then.
A. So we did not know the answers upfront. We just knew that the swabs had blood on them and that they either had EDTA on them or they did not. Some did, some didn't. Two different scientists were assigned, five and five.

And we ran the tests, we reported those results back to an independent person, that wasn't even involved in giving the test in the first place. The independent person was handed a

sealed envelope that had the results in it, the right answers.

After we gave our answers to her, she then graded our results and prepared a memo back to our training files to show that we successfully identified correctly 10 out of 10 of those swabs.

Q. Let's clarify for the Court, those swabs and samples you are talking about were not the RAV4 swabs, or the blood vial in Mr. Avery's case?

A. No, there was -- No.

Q. Okay. So, when you tested the evidence in this case, the blood swabs, the swabs from the vehicle, the control swabs from the vehicle and the blood vial that was sent to you, they were not -- those tests were not done in any blind fashion?

A. Well, no, I mean we knew what we received. We had to check it in. We had to follow our standard forensic practices of looking through the evidence, documenting things --

Q. Sure.

A. -- and then we had to apply it to the protocol.

Q. Right.

A. So, I don't believe you can do it blindly.

Q. Well, how many chemists do you have, working for you?
A. I have a number of chemists, but they are not all qualified to do this type of examination.
Q. How many qualified chemists do you have to do this exam?
A. Three, counting myself.
Q. Okay. You could have had yourself, or one of them, go through, log in the evidence, identify it, give it a cue number, or whatever, right?
A. Yes.
Q. And, then, you could have had another chemist test it, who didn't know what those numbers and designations meant, apply to.
A. Yes. That could have happened, yes.
Q. But you didn't?
A. No, that was -- we don't normally do that.
Q. You had the same chemist who -- who tagged and booked -- or -- the items, also do the test?
A. That's correct.
Q. And just so we're clear, you didn't do the tests in this case?
A. No, I did not.
Q. A Mr. Brewer, what's his name?
A. Jason Brewer.

Q. Jason Brewer, B-r-e-w-e-r.
A. Dr. Jason Brewer.
Q. Dr. Brewer. Why isn't Dr. Brewer here?
A. Because he is a -- in this case, he served the role as a laboratory technician.
Q. So when Mr. Brewer was doing the tests, when he was putting, you know, running a test to see if there was EDTA in item Q-46, he knew that item Q-46 was a swab from the vehicle?
A. Yes, he did.
Q. Okay. Now, the question of whether or not you are seeing a particular chemical in one of these LC/MSS (sic) tests, requires some subjective interpretation by the examiner?
A. Well, as the protocol indicates, there are a number of criteria that must be met in order to -- to make the call that it is a positive finding, that it's truly identified, so if all those criteria are met, then it's clearly there. And if they are not met, then we determine that it's negative.
Q. Well, talking about these mass spectrum instruments, there are limitations on what they can tell you, right?
A. Can you be more clear on that?

Q. Well, you can't just run a sample, then open up the door, put the sample in, close the door, thing beeps a bunch of times and out spits a result.
A. Only on CSI.
Q. All right. Not, certainly, in real life?
A. Not in real life, but it is -- the mass spectrometer is considered to be the gold standard of instrumentation that's used in analytical chemistry, so.
Q. Sure, but even it has limitations?
A. Well, yes, everything has a limitation, that's right.
Q. Okay.
A. And that's why we put into our protocol, this SOP, we write what those limitations are.
Q. All right. But you also have what's called guidelines for comparison of mass spectra?
A. That's correct.
Q. And that was issued June 21st of 2006.
A. That's correct.
Q. You are familiar with that?
A. Oh, yes, I am.
Q. And it talks about, basically, what kind of guidelines you are supposed to follow before you

make a call that something is or isn't present, right?

A. That's exactly right.

Q. Okay. And do you agree with this statement, that the definition of what makes any given ion characteristic, quote unquote, of a particular chemical structure, is somewhat nebulous?

A. Can I see where you are referring to.

Q. Sure. Sure. This would be on guideline 9.3?

A. Okay. But -- It does say that, but you have to put it in context --

Q. I understand that.

A. -- with what's around it.

Q. Sure. But what it's telling you is that something called diagnostic ions, right?

A. Yes.

Q. And that's something that, you know, you put these things in and it spits out -- the computer spits out these graphs and spikes and whatnot, I can show you that later, but, right? I'm simplifying, but?

A. Very much so, but, yes.

Q. Okay. And what this is telling you is, that there does not appear to be any universally accepted standard in the field. This means that

good and consistent judgment by the examiner is essential.

A. That's true.

Q. Okay. And it's also telling you, though, that you have to be careful about the interpretation of the results, even with this wonderful instrument, LC/MC/MS/MS, or just the MS part?

A. That's exactly right, you have to have experience and training in order to interpret the data.

Q. Did you, by the way, approve this guidelines? I believe you did.

A. Yes, I did.

Q. Would you take a minute and look at limitations, item 14, in that list of guidelines. Okay?

A. Yeah, absolutely.

Q. Did you write this?

A. No, I did not.

Q. You just signed off on it?

A. I reviewed it and signed off on it.

Q. Maybe we'll mark this -- Well, I will mark it and then I will get a copy that's not highlighted, over lunch. Just identify for the record, now, this Exhibit 441?

A. All right.

Q. That's entitled what?

A. It's entitled, Guidelines For Comparison of Mass Spectra.
Q. Okay. And this is a document that is -- that the FBI Laboratory Chemistry Unit follows.
A. For the -- Specifically for the toxicology, sub-unit of the Chemistry Unit.
Q. Okay. And so would you agree or disagree with this statement? The mere fact that an unknown mass spectrum matches well to the spectrum of a known standard will rarely, by itself, be sufficient grounds to claim the presence of that compound in the question sample.
A. Absolutely, that's a correct statement.
Q. And quote, similarly, the fact that an unknown mass spectrum fails to match that of a known standard, will generally, not by itself, constitute grounds for concluding that the compound is not present in the questioned specimen?
A. That's right. In simple English, what that is saying, is you have to consider all the data that you have generated in order to make a call that something is there or not there. You can't just pick the data that matches your hypothesis; you have to take the totality of the information --

Q. Sure.
A. -- and apply it in your interpretation.
Q. So it's not just what comes out on these graphs, you have to interpret them?
A. Exactly.
THE COURT: I think, Mr. Buting, if you are moving on to another line of questioning, it might be a good time to take our lunch break.
ATTORNEY BUTING: Sure.
THE COURT: Are you done with the Exhibit 441?
ATTORNEY BUTING: Actually, I am. This would be a good time to break.
THE COURT: All right. Let's report back at 1:00, then.
(Noon recess taken.)
ATTORNEY GAHN: Before Mr. Buting continues, could I just make one observation for the Court, about the admissibility hearing?
THE COURT: Sure.
ATTORNEY GAHN: At one point, I believe Mr. Buting stated that he is not challenging or questioning whether the LC/MS/MS test can test for EDTA in blood with this instrument.
ATTORNEY BUTING: No, that's not what I

said.

ATTORNEY GAHN: Even if not challenging that, I would think that the admissibility -- everything so far he's been questioning on really goes to weight of evidence as opposed to admissibility. And if he is not going to challenge the underlying scientific principles of LC/MS/MS, aren't we over with this hearing?

ATTORNEY BUTING: We most certainly are not, because it's the application of this to this particular instrument, which may be perfectly acceptable and reliable in the field, but it's the application of this instrument to this test, to its ability to determine EDTA in a bloodstain that's being challenged here.

THE COURT: One of the elements that the Court has to address in determining whether expert testimony is admissible is whether the evidence will assist the trier of fact in determining an issue of fact; I'm assuming that that's what --

ATTORNEY BUTING: Yes.

THE COURT: -- Mr. Buting's line of questioning is directed at, so, I'm going to allow it.

ATTORNEY STRANG: The Court's microphone is

a little -- sometimes we aren't getting it at all and sometimes it seems soft.

THE COURT: All right. Unfortunately, it's glued to the desk, so, I do my best. Thank you. Mr. Buting, you may proceed.

ATTORNEY BUTING: Thank you, very much.

CROSS-EXAMINATION CONTD

BY ATTORNEY BUTING:

Q. All right. Mr. LeBeau, let me just go back to one thing for a moment, the FBI's attorney, his refusal to produce the prior protocols that your lab has used for EDTA tests? Okay?

A. That's correct. I was instructed that the only protocol to turn over, for this case, based on the letter that was sent to our laboratory, was the protocol that we applied for this particular case.

Q. Well, would you agree that if we looked at the old protocols that you used and we saw any differences between those protocols and the one that you devised, we could ask you about those differences, right, if we had those old protocols?

A. Potentially, if there were significant differences, you could ask.

Q. Okay. And we could ask about what the reasons were for you to make any changes between what you have got now and what you had previously, right?
A. Yes.
Q. And we could ask about what studies you have done or relied on in order to make those changes in protocol -- this protocol from any prior ones?
A. Yes.
Q. And if we saw that there were any internal critiques of those prior protocols, we could learn even more about possible weaknesses with this protocol?
A. Well, there are no records of internal critiques about the former protocol.
Q. And why are there not any internal critiques about that?
A. There was no reason to critique it.
Q. Then why didn't you use it in this case?
A. Well, as I indicated earlier today, we moved our laboratory from Washington D.C. to Quantico, Virginia. And in doing so, we acquired a number of new instrumentation that we did not have when we were in Washington D.C.
Q. Well --
A. And as part of that move, we had to, in essence,

revalidate, or at least reconfirm, that every protocol that we moved with us was actually working the same way in the new facility. Now, as I had --

Q. But --

A. -- also indicated earlier, we had not had any request to do this particular analysis since we worked in the O.J. Simpson case. Our laboratory moved in 2003, so over that course of period in 2003, we essentially did not take with us that old protocol. I mean, it's an electronic document, so it's not that we didn't have it available, but it's something that we chose not to bring online in the new laboratory, because we weren't getting requests to perform this analysis.

Q. But my point is, you do have it, you are just not turning it over because your attorney won't -- doesn't want you to?

A. I honestly do not know that we have a protocol in this format, as I turned over for this case, for what was done in the O.J. Simpson case. That was under a completely different quality assurance program and, at the time, we weren't even required to have written protocols like this.

There was a protocol in existence, as I said earlier, that would allow you to identify chemical in a stain, not specifically EDTA in a bloodstain.

Q. Well, are you saying that you think scientists from your lab came into the O.J. Simpson case with all the publicity and national television and presented results of testing for EDTA in a bloodstain and didn't have a written protocol?

A. I have no idea if they did or did not. I'm sure there was a written protocol, but at the time of the O.J. case, this is the mid-nineties, completely different set of rules for laboratories in the mid-nineties.

Q. Sure.

A. And at that time, it was acceptable -- by the standards at the time, it was acceptable to write your protocol, just in your notes for that particular case. As long as you wrote what you did, that was fine. So that wouldn't be a document that's generated like this today.

Q. All right.

A. So it could simply be the notes from the O.J. Simpson case that would have the protocol.

Q. But, if we had those notes, we would be able to

look at the differences between that protocol and yours, today?

A. Yes, if you had a protocol from the O.J. Simpson --

Q. Just so we're clear, that machine, their instrument, even though you may have new versions, the very same test that you used in the O.J. case, that also involved LC/MS/MS, did it not? Tandem mass?

A. I don't know. I didn't -- I didn't review the O.J. Simpson case. I didn't do the original work in the O.J. Simpson case.

Q. Okay. But you have read the proto -- the published Exhibit 436, right?

A. Yes, I have.

Q. And that was done very shortly after the O.J. case, right?

A. Yes, it was.

Q. And the method that's used in that report involves LC/MS/MS, does it not?

A. Yes, it does.

Q. Okay. So, maybe a different instrument, but the whole idea of being able to do these with one of those combination liquid chromatography and tandem mass spectromety -- metry, that part is

the same; you are using -- the idea of using that instrumentation is the same?

A. That's correct.

Q. It's other things that we can't tell that have changed because we don't have that protocol, right?

A. Yes, you can't distinguish if there's any differences unless you had, probably, the case file, the actual case notes from the O.J. Simpson case. That's where you would be able to differentiate between what was done in that case and what I did in this case.

Q. All right. Now, going to this February 15th, 2001, protocol, for a moment, that's 434?

A. Yes.

Q. Are there any internal critiques or comments about that protocol or the -- you know, from the approval process?

A. If there are, they are in the packet that I provided you.

Q. Who approved that protocol?

A. Approved it in what manner? We have three levels of approval --

Q. Right.

A. -- on issuance.

Q. And the ultimate approval for a new protocol is the unit chief, right?
A. Well, it's a combination of myself, as the unit chief, and the quality assurance unit chief who oversees quality for the whole laboratory.
Q. Sure. But were you involved in the actual development of this protocol?
A. As a supervisor I was, yes.
Q. And, then, you were also there in the position where you also had to sign off on it?
A. Yes. And it's for every protocol in our unit, as the supervisor, I oversee the development of the protocol and then assure that all the steps have been met for a quality program. And then a second check to that is our quality assurance unit chief that does the same thing.
Q. So -- But in other cases, let's say if someone is developing a protocol of a test, some other chemical, you know, in a routine, not a hurried manner, not a specific trial date and all that, he may not be involved in the development of that protocol at all, right?
A. Well, it depends on who the case is assigned to. If it's assigned to another examiner in our unit, then I wouldn't be as heavily involved with it.

But in this case, it was assigned to myself and I had more incite into the development of the method and the validation.

Q. But in those cases where you are not involved, where it's not assigned to you, someone else develops the protocol first, right?

A. Yes.

Q. Without your involvement?

A. They may come to me for guidance.

Q. Okay.

A. I am their supervisor, so.

Q. But, then, it comes to you after someone else, another examiner completes it, then it goes to you for approval at the unit level, the unit chief level?

A. Well, I wish it was quite that simple. Actually, there's a -- when a method is developed, we have the validation steps that have to be drawn to, be adhered to. As part of that validation, there is a check list that is completed. That check list helps the scientist doing the validation assure that they are completing each of the required steps of that validation. That validation study is reviewed by an independent scientist that had nothing to do with the validation and then I do a

review of that on top of it. That's for every protocol that's issued into our -- in our unit.

Q. Right.

A. In this particular case, because I was involved in the validation, I didn't do the validation review. I assigned that to another employee to do the validation review and she reviewed all of the validation data and signed that she agreed with the work that was done there.

Q. Right. But then it gets to the next level of unit chief approval and you are basically approving yourself. You are approving your own protocol at that level, in this case?

A. Well, I suppose, technically, yes.

Q. I'm just trying to distinguish how, in some cases, when it gets to the unit level, the unit chief approval level, it really is another independent review by you, who wasn't involved in the development?

A. Yes.

Q. But this case worked differently because it was assigned to you, to begin with?

A. Slightly different.

Q. Okay. All right. Let me talk about some of the assumptions that I think you are making as you do

this test, okay. I call them assumptions, you may disagree. But, for instance, in doing this test where you are trying to see if there is EDTA in bloodstains that may have come from a blood vial that is now 11 years old, you make an assumption that the EDTA that was originally in that blood tube has not degraded in the 11 years to the point where it's not detectable, right?

A. I did not make that assumption, no.

Q. Okay. Well, if in fact the EDTA had degraded in 11 years, then it wouldn't be detected, would it? Simple question.

A. If -- If the EDTA -- EDTA had degraded, then it would not. Completely degraded, I should add, to zero, then it would not be detectable.

Q. Not really completely to zero, just to the point where it's below your limit of detection, right?

A. That would be a very significant reduction in EDTA, because a standard tube has --

Q. But, sir --

A. -- approximately a thousand to 2,000 parts --

Q. Sir --

A. -- per million of EDTA --

Q. -- please.

COURT REPORTER: I'm sorry --

ATTORNEY BUTING: Judge, I would direct the witness --

COURT REPORTER: I'm sorry, I didn't get his answer.

A. I said that standard tube has approximately 1,000 to 2,000 parts per million of EDTA in it.

COURT REPORTER: Thank you.

Q. (By Attorney Buting)~ All right, sir, just follow with me, we'll get to that, all right. But the first step is this. If -- Would you agree with me, if the EDTA has degraded, not to zero, but to a point where it's below your limit of detection, then your tests would not show it, right?

A. Well, it would have to degrade to a level below 13 parts per million from that --

Q. Whatever --

A. -- original --

Q. Whatever it is. Whatever it is. Whatever your limit is it, it could still be there, but not be detectable?

A. To below 13 parts per million.

Q. Right. And, so, when you say that -- when you express an opinion that there is no EDTA in those stains -- I'm sorry, let me rephrase that. When you express an opinion that the blood in those

stains in the Toyota could not have come from the blood vial, you are making the assumption that the EDTA that was originally in that tube 11 years ago, has not degraded to the point where it's not being detected on those stains any more, right?

A. No, we tested the tube of blood and determined that it did have EDTA in it at high amounts.

Q. You quantitated it?

A. Did not quantitate it, but I compared it directly to a fresh tube of EDTA blood and the results for the same amount of blood analyzed gave very similar results.

Q. Wait a minute, are you telling us now that you quantitated the level of EDTA in that blood vial, yes or no?

A. No, I said we took the same amount of blood from a fresh tube of EDTA blood, compared to the blood sample from Mr. Avery, same amount of blood on the instrument gave the same comparable response --

Q. Okay. Let's talk about that.

A. That would indicate --

Q. Let's talk about that.

A. I'm sorry, I didn't finish. That would indicate

to me that there was no significant degradation of EDTA in that tube.

Q. Are you testifying then that your mass spec test quantitates the level of EDTA?

A. It's certainly capable of doing that, yes.

Q. Did you do that here?

A. No.

Q. All right. Now, if what you found when you do this test is that -- we'll get to that in a minute -- but whatever your mass spec printout graphs show, were some peaks that would be consistent with EDTA, right? In the blood vial?

A. Which blood vial?

Q. The blood vial.

A. The blood vial from Mr. Avery?

Q. Yes.

A. It had peaks in it that were identified, unequivocally, as being EDTA.

Q. And -- But those peaks don't tell you whether there is 1500 milligrams per liter or 13 million grams per liter, do they?

A. Oh, they do. They give you an idea of how much is there. And we do that.

Q. So what's the idea, sir, where is it in your reports that you have any conclusion drawn about

what the quantity of EDTA is in that 11 year old blood vial, show me, you have got it right in front of you?

A. In my report?

Q. Show me where, anywhere in your reports, your stack of 6 inch lab sheets; show me where you express an opinion that there is a particular quantity of EDTA in the blood vial?

A. No, I did not do a quantitative analysis, but the response on the instrument does allow an experienced chemist to assess if there is a -- you know, you can tell, from the response, if you have 50 percent of what you are comparing to and you can tell if you have 10 percent.

Q. Oh, yes.

A. Because the instrument gives a certain peak size.

Q. Show me.

A. That -- it's not --

Q. Show the Judge.

A. -- in the report, it's in the data.

Q. Show the Judge in the data.

A. Okay. It will take me one minute.

Q. And while you are doing that, show the Judge in your report where you say anything about the quantity of the EDTA that you found in that 11

year old blood vial.

THE WITNESS: Can I approach?

ATTORNEY BUTING: Can I see them, please?

Q. Okay. What you are pulling out are all positive -- are all controls, positive controls that you did, right?

A. That's correct.

Q. Show me a test that you ran, not on a control extract, but on the Q-49, whether it's a spot, two microliters, one microliter, whatever?

A. You are holding it in your hand. The Q-49 is positive control B, was the actual tube of blood, from Mr. Avery, that we prepared a second control to, for this very reason, to assess that the EDTA in that tube had not significantly degraded.

Q. Well, where is the sample of Q-49, not the positive control that you ran through, where's the actual evidence sample?

A. This is it.

Q. That's it?

A. Yes.

Q. You ran no separate Q-49?

A. Well, we also did a -- to another detection limit study with specimen Q-49 where we took a one microliter drop and a two microliter drop of that

same blood, from the tube from Mr. Avery, and we analyzed that with this protocol as well.

Q. Okay.

A. But that was a detection limit study --

Q. Right.

A. -- to verify that our instrument was capable, again, to see that level of EDTA.

Q. And that's important, because if your detection level isn't right, it may be there and you are just not seeing it.

ATTORNEY GAHN: Your Honor, at this point, could we back up and could you mark the exhibits that Dr. LeBeau pointed out to you and showed you where the EDTA testing was done? And why don't we show those on the ELMO?

ATTORNEY BUTING: All right.

ATTORNEY GAHN: And just, basically, go through what you just went through before with Dr. LeBeau.

THE COURT: Just to clarify a couple of things for the Court, I have, which was attached to the State's motion, a copy of the report of examination. I don't believe I have got the document that's being referred to here. Do I take it, was a copy of the document that's being referred

to, previously provided to the defense?

ATTORNEY GAHN: Yes.

ATTORNEY BUTING: On Friday, to me, without a chemist.

THE COURT: Okay. And can a copy of the entire document be marked as an exhibit? Is there a copy of the document available, or is that entire thing the document?

ATTORNEY BUTING: That's it.

ATTORNEY GAHN: Yes. This is the discovery which was provided by the FBI. And what Mr. Buting is talking to Dr. LeBeau about are a couple of pages from this discovery package.

THE COURT: All right. And so you are asking the pages be identified as an exhibit?

ATTORNEY GAHN: The ones that he just talked to Mr. -- Dr. LeBeau about on the stand, where Dr. LeBeau was pointing out the levels of EDTA. I think those should be marked and actually shown on the ELMO, so that everyone knows exactly what we're talking about here.

THE COURT: I think Mr. Buting, actually, was about to show them on the ELMO.

ATTORNEY BUTING: Yeah, I will. I'm going to show -- Maybe we should mark the whole thing.

The State can get us another copy, and at the end of this hearing, for any possible appeal record, we will have a whole copy.

THE COURT: Any objection from the State?

ATTORNEY GAHN: No, your Honor, we can have another copy made.

THE COURT: All right. If that's going to occur, then I think as long as we identify what you are looking at by page number or some other fashion, when the entire exhibit is received, we should be able to identify the pages that are being referenced.

Q. (By Attorney Buting)~ All right. I'm going to show you this first page which, at the top, I'm going to show this overall page first so you can see. This graph on the right side that you are referring to, where this is a peak, that you are saying is a -- well, actually, this is -- can you see the top?

A. No, I can't.

Q. All right. The date is February 16 of '07?

A. That's correct.

Q. The time is 4:00 a.m.?

A. That's correct.

Q. Somebody is doing this test at 4:00 in the

morning?
A. No, an instrument, a robot, in the lab, is doing it.
Q. Oh, really, so there is nobody there to monitor it at all?
A. No, it is set up as an auto sampler. It runs itself once you put together a sequence list, it shoots one sample. When that sample is finished, the next sample is injected and so on and so.
Q. And it does that all night long?
A. It did in this case, yes.
Q. Okay. On a bunch of different -- whatever -- whatever samples are being tested, could be more than one case?
A. No, just this case. It was the only one tested on this instrument at that time.
Q. Okay. It says positive control A, MAL, EDTA extract?
A. Yes.
Q. Is that you?
A. Yes, it is.
Q. Your own blood?
A. Yes, it is.
Q. So you are the lab volunteer who gave his blood?
A. Yes, I was.

Q. Okay. And then that was put into a tube with EDTA?
A. It was, yes, in a purple topped tube.
Q. Mixed up?
A. Yes.
Q. Then extracted and --
A. For clarification, five microliters of that blood were put onto a cotton tip applicator. And then it was carried through the procedure that's already in --
Q. Okay.
A. It's a court exhibit.
Q. And when you get these, goes through the -- believe me, I'm not an expert, but as I understand it, it goes through this machine and it's bombarded with some kind of electrical charge so that ions are knocked free from the molecule?
A. Well, first, it separates the mixture of all the chemicals that are in the blood, into their individual chemicals. And they come out at different times. So it's probably easier if you look at the other side of the graph first. And if there's -- is there a laser pointer I could use, please. Is it possible to put that whole

side of that page up at one time?
Q. Sure.
A. Okay.
Q. Is that good enough?
A. Yes. Thank you. So, what we're looking at then is this is one peak, two peaks. These are different mass spec experiments that are going on, that are monitoring the time that it takes for that -- from that injection till that EDTA peak comes out and this is the EDTA peak right here. So, again, now, if you don't mind, just zooming in a little bit.
Q. That's your blood in that graph, the top one?
A. Yes, it is.
Q. All right.
A. Okay. So it took .89 minutes, roughly, .9 minutes, for the EDTA to be injected and then come out of the LC to the mass spectrometer. That's what that's indicating. So that is an EDTA peak there and on the right side of the graph is the chemical fingerprint I told you about earlier, that the mass spec gives us.
Q. That's this one, 160 is at the top?
A. Yes.
Q. These are the ions you are looking for, three

ions, right?

A. That's right. Plus the -- the parent ion, 243, that's -- 293, I'm sorry, that's the weight of EDTA. And then these, 247, the 163, and the 132, those are -- I'm sorry the 160 and the 132 are the fragments of EDTA. And a real simple way to think of this is if you took a sheet of glass and we could hit it with a hammer and every time hit it exactly in the same place, at the same amount of energy, that sheet of glass is going to fracture the same way.

And if we could catalog those fragments into a data base, and catalog it based on a different type of glass, we could say, okay, this is that type of glass, based on that fragmentation pattern. That's what a mass spec -- a mass spec does with a chemical. It fragments into a consistent fragmentation pattern that serves as a fingerprint. This is the fingerprint for EDTA that you see up there.

If you zoom out a little bit, you can get the whole picture. And what's important is that not just that you have those four fragments there, but look at the relative ratio of those fragments. The most abundant is the 160 at the

very top, that's what's called the base peak.

Q. Right.

A. And then we have, in the ballpark of around 15 to 20 percent, the 132 and the 247. And below 10 percent, we have the 293, which is the -- that's what it originated as, the full EDTA, without being fragmented. Okay. So that is for my blood that was put into an EDTA tube, mixed up, five microliters of my blood were put onto a cotton tipped swab and run through the application.

Now, if you go back to the top of that particular graph, on the right side here, this is via signal. This is how much of a signal it gave, that's 1.3 times 10 to the 5th. That's the amount, in essence, that the instrument is reading. It's not -- I'm not telling you a quantity; I'm not putting a number on it.

But it's giving -- The more that's there, the higher that peak is going to go, the higher that number will go. So, if I had, in essence, twice as much EDTA in that sample, I would have 2.6 times 10 to the 5th, in that category. If I had a 10th of the amount of EDTA in that sample, I would have 1.3 times 10 to the

4th.
Q. Okay.
A. That's how I'm able to give you an approximate amount.
Q. Okay.
A. Without doing a quantitative analysis.
Q. Well, first of all, let me just make clear, you don't express any opinion in your report about the quantity of EDTA in that tube, do you?
A. No, I don't.
Q. Okay. Now, you say this is -- this is the signature for EDTA, that 160 is way up in the hundred and the 132 and 247 are about sort of even amounts down here at 1500 or something, right?
A. That is the mass spectrum that we obtain on our instrument in doing this experiment, which is called positive mode electrospray ionization, LC/MS/MS.
Q. I'm going to show you one that is exactly the same time, 2/16/07, 4:02:32?
A. Mm-hmm.
Q. Positive control, MAL; that's your initials?
A. Yes, it is.
Q. EDTA extract?

A. Yes.
Q. Got strong 160?
A. Yes.
Q. And down here, the 247 is only about half as intense as the 132, right?
A. Could you go back to the top, I'm just -- I want to make sure I'm looking at the same one.
Q. And, by the way, there's quite a few other little small peaks on the bottom of this one, right?
A. Yes.
Q. 175, 195; what do those mean?
A. Well, those are background ions, I mean, it's not always real clean.
Q. Contamination.
A. No. No, not contamination at all. The instrument has noise to it and what that means, essentially, is there's always going to be some signal in that instrument that's going to be recorded. So that's -- that's all we're seeing there. And we can -- we can display that by subtracting out the noise. We can display it including the noise. And what you are looking at is the same -- again, I didn't see what the top number was.
Q. I will get to that. I will go back. Don't worry

I will go back. But I want to go back to this --
A. Well, I'm sorry, you asked me about that and I wanted to verify if --
Q. I will get to it, sir.
A. -- it was the same sample.
Q. I'm just asking you now, do you see any noise in this first one we looked at? Do you see any other ions at the bottom of this -- you said the machine always has background noise?
A. It does, yes. And as I said, there are different ways to display it, so that you can display it without the noise.
Q. Okay.
A. And I can tell you that by looking at the top of the sheet, that you don't want to show me, I guess.
Q. The top, is that what you want?
A. Yes. Okay. You switched to the other one now.
Q. This is the one you wanted to see.
A. Yes. This is the -- for the -- this is the mass spectrum across that whole peak, from .81 to .95 minutes. So that would include --
COURT REPORTER: I'm sorry, could you repeat that and slow down just a little. Thank you.

THE WITNESS: I'm sorry.

A. This is the mass spectrum in this column here, of this whole peak, essentially from this part of the peak where it is just starting, over to that side. So it's taking the average of the signal across that entire peak, which is taking, you know, roughly a 10th of a minute or so to completely come out.

Q. And so it gives a slightly different spectrum where -- where the 247 ion is only half as intense as the 132 ion?

A. That's exactly right.

Q. And that's actually more what it should be, isn't it?

A. Well, this is -- Yes, that's more what it should be, you're right. And that's why I used that particular display, that you just had up, to create this chart here. Which is, as I indicated earlier, your Honor, we have, in our protocol, a section entitled decision criteria. And this is a section that is to ensure that we have a consistent interpretation of the data, so that scientist A and scientist B are going to look at this same data and come to the same conclusion. And with that in mind, we have employed criteria

that must be met in order to call something positive, based on mass spectral data. And that's what you see here. This is --

Q. Well, before we --

A. -- applying that.

Q. Before we turn to this --

A. Yes.

Q. So what you are saying is, when you get these -- these two different looking spectrums of your own blood, one that has the 132 ion, the same signal response as the 247, you make some objective or -- I'm sorry -- subjective conclusion that the instrument is not completely right, that it's really supposed to be more like the second one I showed you, where there's actually a difference, a ratio between the 132 and the 247?

A. Again, you failed to go back and show me the header on that one, which was what I was looking to do.

Q. I did show you that.

A. No, I'm sorry --

Q. Do you want to see it again?

A. -- you did not. It's the one that you are saying is clean, you failed to show me the header on that. But --

Q. Well, I can take a look at it. I believe we looked at it in the beginning, same date, same time.

A. As you will notice, it says right there, retention time is .91, so that's -- instead of it being an average, your Honor, across the whole peak, it is simply looking at what is the mass spectrum right at .91. This is the initial assessment of the data, right here, what you are looking at, the initial assessment where we're going through and we're trying to make an initial assessment as to whether or not there is something potentially there to go back and take a closer look at.

And in this case, it's a positive control. It seems obvious that there are ions on there that are characteristic of EDTA. So then we went back and looked at the data and displayed it under the proper conditions that allowed us, then, to assess it for the ion ratios, the requirement that's in our actual SOP.

Q. But in this --

A. And that's why there's a separate printout.

Q. All right. But wait a second, so the other one is an average, that's fine. But in this one, you

will agree with me that the signature, the spectrum signature is not exactly like the other one because you are getting an equal strength response from the 132 ion and the 247 ion?

A. And that's why we average across the whole peak, because the instrument is in each millisecond, it's do -- it's hitting this chemical and breaking it up. So you are going to get some fluctuation in the signal and we average across the whole peak, because that's -- that's a more characteristic of the signal. It really wouldn't be fair to anyone to base it on just looking at one point in time when the peak is composed of signals across about 15.15 seconds.

Q. Sure. So, a few minutes ago when we looked at this and you told the Judge this was the spectrum, this was the signature for EDTA; you want to correct that now?

A. No, I don't. I mean, that is the typical mass spectrum that you should expect to find, mainly looking at the fact that the base peak, which is the largest peak, is 160. And you have fragments of 132 and 247, with a small amount of 293 present.

That's -- That's what we're looking for

with that initial assessment, as to make a determination whether or not we should look at it closer for the presence of EDTA.

Q. All right. Well, let's look at this other exhibit which is -- says at the top, tandem mass spectrum, positive ESI mode.

Okay. This is -- This is a chart now. And on the left it has got positive control A, positive control B at the top. Then it has numbers that show the response.

A. That's right.

Q. And 160, in this column right here, is about 91,000, right?

A. Yes.

Q. 132 is like much, much less, 13,000. 247 is about half of that?

A. Mm-hmm, yes.

Q. And that's what it's supposed to be, isn't it? They're not supposed to be even or --

A. Well, there -- Again, if you look at the protocol I provided, it does talk about this. There's an acceptance range on those fragments and generally it's within -- it depends on the type of mass spectrometry we're doing. It depends if we are doing this type of mass spec, mass spec. But

there are pre-defined acceptance criteria for the mass spectral data, in order to get that consistent interpretation.

What you are looking at here is the actual abundance of each of those ions plugged into a spread sheet that we generated in our laboratory to automatically apply the rules that we have in our protocol to the data.

Q. All right.

A. So that, you know, you don't have to sit there and manually do the calculations every time. You plug it into the thing and it will tell you if the criteria is met in order to call it a pass or a fail. So what you have for --

Q. You review that too, right? It's not just --

A. Oh, of course.

Q. -- pass fail by the computer?

A. Of course. Yeah, absolutely. It's reviewed manually as well. But I'm just saying, so that somebody doesn't have to sit down with a calculator and apply the calculations each time.

But you can also tell, I mean, 15 percent and 14 percent are very close to one another; 8 percent and 10 percent are very close to one another.

Q. Sure.
A. Where we have one that fails, though, is the next one down, if you would.
Q. Yeah, now, let's --
A. 41 percent is no where --
Q. Wait, wait, wait. Just -- Let's just --
THE COURT: Hold it. I want both of you to stop for a second.
ATTORNEY BUTING: Okay.
THE COURT: This is cross-examination, so don't go into explanations that he doesn't ask for.
THE WITNESS: Okay. Yes, your Honor.
THE COURT: Your attorneys will have a chance on redirect to follow up, if they wish. And let's each of you try not to talk over the other one.
ATTORNEY BUTING: All right.
THE COURT: Mr. Buting, if you think he is not being responsive, then let me know and I will rule on it, okay?
ATTORNEY BUTING: All right. Thank you, your Honor. I'm sorry.
THE COURT: Go ahead.
ATTORNEY GAHN: Could we mark this as an exhibit, if possible.

ATTORNEY BUTING: Sure. Do you want to mark the whole book as like 442 and then have 442A, B, C, something like that?

ATTORNEY GAHN: Well, I'm really interested in --

THE COURT: Let's give -- Let's give this exhibit the next sequential number. And when the book comes in, we'll give the book a number.

ATTORNEY BUTING: Okay.

Q. (By Attorney Buting)~ This is 442, right? This is a sort of chart that summarizes what the results on this particular test were, right? Is that fair?

A. Could you say that again.

Q. This is a chart that summarizes or prints out what the -- what the results were on this one particular test, or series of tests, whatever it is?

A. Yeah, that's a series of tests.

Q. Okay. All right. Now, Q-49 is the blood vial of Mr. Avery's blood, right?

A. Yes, it is.

Q. And, you know, your analyst knew that when he was doing the test, too, right?

A. Yes, he did.

Q. Okay. This particular one is Q-49, limit of detection one microliter?
A. That's correct.
Q. And then down below is Q-49, limit of detection two microliters, right?
A. That's correct.
Q. And what you are doing here when you test down to only one microliter, you find that this is the control and if we notice, these are the same, all the way down. Three times the positive control A is the same, right?
A. That's correct.
Q. Same number, same strength, same ratio, everything to the decimal point, right?
A. Yes.
Q. But one microliter, this one is showing no 132 and a 247 shows up at like 1800?
A. That's correct.
Q. So that's considered a fail?
A. By that criteria I was describing, yes, that was ruled as a fail. It does not meet the criteria to call it positive.
Q. Okay.
A. For that one microliter drop, using that particular technique.

Q. So in that particular technique, that was what, too small of a sample then?
A. Yeah, it's right -- As I explained earlier, that's right at our detection limit, as we found in our validation study.
Q. So when you said it was valid to that one microliter, it's not exactly to that one microliter, because here it failed at one microliter, right?
A. Well, in this particular sample, yes. And in this particular analysis, yes, that failed.
Q. Okay. But, then, when you increased it a little bit to two microliters, we did get a pass because the ratios between the 160, the 132, and 247 are about within tolerance, right?
A. That's right.
Q. But we know --
A. I'm sorry. I'm sorry, to be clear, but I ultimately ruled that negative as well.
Q. That's right. That's what I want to show right now, because is that your handwriting and your signature on those?
A. Yes, it is. Well, I'm sorry the top two are not my handwriting, that's the reviewer, that reviewed the data before the report went out.

Q. Okay. Looks the same to me, but anyway. The handwriting that says, extra fragment ruled ND with a circle on it, that's yours?
A. Yes, it is.
Q. And despite what this chart says and despite what the machine says, when you looked at the actual graphs, there are too many extra peaks to make a call on that one?
A. Yeah, it was -- it wasn't as clean as I would like it to be to feel comfortable making that call.
Q. Okay. And this is at two microliters, right?
A. That's correct.
Q. You want to go back a few pages deeper into your book. There's a sequence that's run at -- run at different times, actually. Here's one that is run at 4:35 in the morning on the 16th of February, right? Would you agree with me? I will move it over so you can see what we're looking at. We're looking at a positive control B which you say is an extract from the tube of blood?
A. Could you -- Would you mind zooming out so I can see the whole picture a minute?
Q. Sure.

A. All right. I'm sorry, but I believe you took that from me, earlier, my copy of that.
Q. You're right, I did. We'll use yours and we'll mark this.
(Exhibit 433 marked for identification.)
Q. (By Attorney Buting)~ Now, we just saw your -- In that early example, we saw the signature for EDTA and the ratios. And this one is, again, it's very close in time, it's 4:35 in the morning on February 16th?
A. That's correct.
Q. It has the 160 peak there, which is always set up -- you set that up at a hundred, right?
A. The instrument normalizes itself, so the most abundant peak is set to a hundred and everything has been put relative to that.
Q. Okay. Sure. So this -- If it detects 160, it's always going to be up there at a hundred because it's adjusting it accordingly.
A. Not exactly, it has -- 160 has to -- has to be the most abundant --
Q. Oh, okay.
A. -- for it to be set at 100.
Q. Okay. Now, as we look down at this, bottom of this graph, this is Mr. Avery's blood, you can

see that the 132 ion is coming in at about half of what the 247 ion is?

A. That's correct.

Q. This is a retention time of .92 minutes; is that what that means RT 0.92?

A. Yes.

Q. So, similar to what it was with yours when it was .91?

A. Yes, it's just one single look at that peak instead of the whole --

Q. Right.

A. -- peak.

Q. And yet in this one you have the exact opposite of what you would -- should get for a signature ratio -- for a ratio of 132 to 247, you have the exact opposite of what you would expect to get in your signature for EDT?

A. Well, I wouldn't assess this for the ratios and I did not assess this for the ratios. I would average across that whole peak, as I did with the positive control A, average across the whole peak in order to make that determination.

Q. Okay. Tell me what the difference is between the positive DSI mode and the negative DSI mode?

A. Well, it's simply flipping the electronics

around. In one mode you are looking at fragments that have a positive charge and in the other mode you are looking at fragments that have a negative charge to them.

Q. All right. So, not that we have had enough of a lesson to understand how these machines work, but certainly they do require some interpretation in order to make a call or not make a call, right?

A. Yes, it does.

Q. EDTA is biodegradable?

A. Not readily, no.

Q. But it is eventually, right; it is broken down?

A. Not significantly, no.

Q. Well, you said you apparently are aware of studies about how it is the most ubiquitous chemical in the environment now, right? Manmade chemical?

A. That's right.

Q. And there are many studies about how to deal with it in waste water treatment, for instance, right? In the environment?

A. That's correct.

Q. And they come up with methods to try and break it down to biodegrade it, right?

A. Harsh methods, yes.

Q. Okay. Well, it, for instance, has been found to breakdown more quickly if the PH is raised?
A. Yes, that is correct.
Q. So a more base or more al -- I always says alkaline PH level will make the EDTA degrade faster than a neutral?
A. That's correct.
Q. Okay. Now, you talked briefly about some kind of study that you did on the stability of EDTA, based upon pulling out some random blood card that you still had from 33 months ago; is that it?
A. Well, I didn't have them personally, our DNA Unit had a number of spot cards where they had put EDTA blood onto these cards and they were stored at room temperature from May of 2004.
Q. Okay. So you do recognize, then, that the whole question of whether ED -- just how stable EDTA is and whether it breaks down over time could affect your ultimate opinion in this case?
A. If EDTA was known to break down, or if our studies found EDTA to break down, then that would absolutely have an affect on my opinion.
Q. Okay. What study have you seen that's ever tested an 11 year old vial of blood to see how

EDTA breaks down or doesn't break down?
A. I think the only study is the study that -- that we did for this case with --
Q. Oh, really?
A. -- the actual blood itself.
Q. Okay. And your report, by the way, is in front of you -- what is that, 435 -- Exhibit 435, is that still in front of you?
A. Yes, it is, 435.
Q. What is the date of that report?
A. February 26th.
(Exhibit No. 444 marked for identification.)
Q. I'm showing you Exhibit 444, which is two pages of a section of discovery that you gave me.
A. Yes.
Q. Can you identify that?
A. Yes, this is an EDTA stability study that we conducted very late last week.
Q. And it's -- put it up on the ELMO, so the Court can see it. This consists of two pages, one of which is one type written paragraph, right?
A. Yeah, that's my brief summary --
Q. Okay.
A. -- of the results.
Q. And the second page is a few handwritten notes

from whoever did that study. Who did that?
A. Dr. Jason Brewer.
Q. Same guy?
A. Yes.
Q. The date of that study?
A. 2/28/07.
Q. So you did these so-called stability study two days after you actually filed your report?
A. Yes.
Q. So, if you had done this study and found out, oops, this EDTA isn't as stable as we thought it was, you may have to retract your report, or amend it, right?
A. Well, again -- Well, yes.
Q. And this is the sum -- This first page of this Exhibit 444, this one paragraph, is basically your study. That's all that's written that explains what your study is, right? Your EDTA stability study, is this one paragraph?
A. No, it's that page and the other page you showed with Dr. Brewer's notes.
Q. Handwritten notes?
A. Yes.
Q. You are not going to publish this study, I assume, are you?

A. I -- I never even considered it. I don't know.
Q. Well, let's talk about it for a minute. What you did is you pulled out 10 spot cards that were 33 months old, stored in room temperature, right?
A. Yes.
Q. And 4 of those 10 did not show the EDTA free acid form at all, right?
A. No, that's not correct.
Q. Do I have it backwards? I'm sorry. Four of the spot cards did not show the EDTA iron complex, right?
A. That's correct, 4 of the 10 showed an indication of it, but it didn't meet our criteria for calling it.
Q. So you couldn't call it?
A. That's correct.
Q. So, in just 33 months, at room temperature, some controlled environment you have, we see some degradation going on with the EDTA, because four of them you are not able to see the iron at all, are you?
A. Well, I disagree with your statement there, that you see --
Q. You don't know what --
A. -- degred --

Q. You disagree with the degradation part.
A. I disagree with the degradation of EDTA. What you can see here is either the EDTA iron is becoming unbound, potentially.
Q. That's called --
A. -- the EDTA --
Q. -- degrading, right?
A. Well, it's dissociating is what it's called, not degrading. It's called dissociation, back to the free acid form. So that's one potential explanation, because you can clearly see the EDTA in every one of those spot cards, the free acid form. So either that is taking place and that could be environmentally occurring, or it has decreased to a level that we're not able to detect.
Q. Okay.
A. We can't tell, though, looking at that result, which of those two scenarios are the actual answer.
Q. All right. So one scenario is that it has decreased to the level you can't detect, right?
A. That's true, yeah.
Q. And your study, if you want to call it that, doesn't discriminate for one or the other, right?

A. For the EDTA iron complex, yes.
Q. And so, all you know is, that when you tested these 33 month old spot cards that -- that 4 of these 10 that you tested you were not able to read or get a reaction, detectable level of the iron, EDTA iron?
A. The iron complex, yes.
Q. Okay. Did you test for a calcium complex in any of these?
A. No, as I indicated earlier, the amount of calcium typically in blood is 10 to 30 times lower than the amount of iron. So it made more sense to focus on the iron complex.
Q. Okay. Now, your study is of 33 month old blood on spot cards, right?
A. That's right.
Q. And the spot cards are paper?
A. Yes, they are.
Q. And they are -- they are supposed to be a stable substrate so to speak?
A. They are exposed to the environment, to air, so.
Q. But there's not supposed to be anything on the paper that would cause degradation, for instance, or anything like that?
A. That's exactly right. They are sterile matrix

that the blood is placed onto.
Q. And presumably some sort of stable PH.
A. Yeah, the PH would really come from the environment --
Q. Okay.
A. -- that it's exposed to.
Q. Okay. But you don't know how the blood vial, in Mr. Avery's case, was stored, right? For 11 years?
A. No, I don't. I don't know if it was stored -- I'm going to make an assumption it was stored with the cap on, otherwise it would have leaked out. But other than that, I don't know if it was stored refrigerated or at room temperature.
Q. By the way when you -- you can tell that the cap had been removed at some point, right?
A. Yes.
Q. That was obvious, from your examination you could tell someone took that cap off?
A. That's exactly right, yes.
Q. And if there was less than what you would expect, amount of blood in the vial, 10 milliliter vial and it had only five and a half?
A. I wouldn't -- Well, that's a two part question. Yes, I did, certainly recognize that the cap had

been taken off. You can tell that it had been taken off. Was it less than I thought should be there; is that your question?

Q. Well, I guess you wouldn't necessarily -- or would you know, I mean, is it normally filled when you see a ...

A. No.

Q. Okay.

A. Typically --

Q. Normally more than half filled?

A. Typically, when they fill a blood tube, it is filled about two-thirds of the way to three-fourths of the way up.

Q. So you don't know whether there was blood taken out because you don't know what the original volume was?

A. Exactly, I don't.

Q. But you do know the cap was removed?

A. Yes, I could tell.

Q. So it was no longer in a vacuum state inside the tube?

A. That's correct.

Q. And some sort of air and bacteria had been exposed to it by taking the top off and bringing it back on?

A. Sure, some limited air that would just basically replace --
Q. Right.
A. -- the area that was left in that tube.
Q. But you don't know anything about what conditions of heat it was stored in for 11 years, do you?
A. No, I don't.
Q. Or cold?
A. No, I don't.
Q. Or PH in the environment that it was stored, right? You would be guessing, but you don't know?
A. Well, the PH is going to be of the blood itself, so. It's not stored in an environment of PH. That was implied that it's being put into something else that has a PH.
Q. And the same thing as far as the storage of the swabs -- Let me make one thing clear here, the swabs that you tested were the swabs, as far as you know, that were taken on November -- in November of 2005, from the vehicle, right?
A. Those were some of the swabs we tested, yes.
Q. Three?
A. There were three swabs, yes.
Q. We'll get to controls later. If someone had used

that blood vial to plant blood in the RAV4, then those swabs, as of November of 2005, were about nine years old?

A. I'm sorry, I was confused on what you just asked.

Q. I'm sorry. If the -- If someone used that blood vial, which was drawn in January of 1996, to plant blood in the RAV4, okay, then the swabs that were made from that blood would contain blood that was about nine years old?

A. Yes, that's correct.

Q. Okay. That had been stored under conditions that you don't know, for that nine years, right?

A. That's correct.

Q. And then those swabs were taken and sent to various places. And, again, you don't know how they were stored from November of 2005 until you received them in February of this year?

A. That's correct.

Q. Before you tested the vial Q-49, did you shake it up, mix it up?

A. Yes, I did.

Q. You don't know, whether or not, for nine years, that blood sitting the way it was, you don't know how that EDTA was reacting within the liquid, do you? Bad question, let me phrase it this way.

You don't know whether, over a nine year period, the EDTA would remain homogenous, homogeneously distributed within that vial of blood, do you?

A. Well, yes, I -- within a reasonable degree of scientific certainty I would expect that it would be equally homogenous throughout, because it --

Q. Then why did you shake it up, sir?

A. Just standard practice, I always do. Always shake a tube of blood when I get it.

Q. And that way you know it's going to be mixed evenly, right?

A. Correct.

Q. You don't know whether that blood vial that sat for nine years, up until November 5th, you don't know whether the EDTA was homogeneously mixed in that liquid, at that time, do you?

A. If I could clarify my answer. I think I do. And the reason I say that is, because any time something goes into solution, which blood is essentially water, and these are things that are dissolving into the blood, just like if you put instant coffee into hot water, you're going to stir it up, it's going to dissolve into the hot water. If you let it sit, the coffee doesn't start to recrystallize and sink to the bottom and

you have clear water and coffee. It's going to stay in solution and be distributed throughout that tube of blood.

Q. But, sir, have you done -- this is your assumption, right?

A. Well, it's -- it's based on my education.

Q. Have you done any tests or are you aware of any studies that would describe how EDTA would act after nine years of just sitting in a tube?

A. No, I have not personally done anything like that.

Q. And have you noticed that when blood sits for a long while, there's some sediment, it sort of will separate, slightly, into the plasma, or the -- the red blood cells are heavier and tend to fall to the bottom?

A. Especially in a tube that doesn't have a preservative in it, that's true.

Q. Okay. Would the EDTA iron chelates, I think you called them, right?

A. Yes.

Q. Would they have a higher or greater specific gravity, such that they may -- than the rest of the blood, such that they may sink to the bottom?

A. No, because, again, these are still water soluble

entities.
Q. Sure. But they have --
A. So --
Q. -- they have bound, the iron ones have combined with the iron molecule, right?
A. It has bound to the iron molecule, yes.
Q. And so wouldn't you agree with me that specific gravity of that isotope or chelate would be different than let's say the free EDTA that's not bound with anything.
A. No.
Q. Okay. In any event, you don't know, if some police officer was intending to use that nine year old vial to plant blood, you don't know whether that officer would have shaken it up or not, before doing that?
A. No, I don't.
Q. And you don't know whether the portion that's poured out might have a lower concentration of EDTA than it would if it had been all mixed up, do you?
A. I don't believe that that's a realistic scenario.
Q. But you haven't tested it?
A. No, I have not.
Q. And when this blood vial came in, you didn't do

that kind of a test before mixing it up?
A. Well, it would have been mixed just getting to our laboratory. Any time its shipped or moved from location --
Q. Sure.
A. -- A to B, it's mixing. So that would be irrelevant, if I tested it in my laboratory, wouldn't answer your question.
Q. Okay. You do know, from the ***Cooper*** case, I believe, at least, that EDTA on fabrics may migrate and distribute in a different non-homogenous manner, right?
A. I read that was the opinion of one of the experts in the ***Cooper*** case. I don't know that I share that opinion.
Q. Well, didn't you say that that was, in fact, one of your concerns was that a drop of blood on fabric might expand and migrate in ways such that the EDTA levels might be different?
A. No, that wasn't what I testified to.
Q. And you tested on the -- from the swabs that were taken from the RAV4, they were not spot cards, right?
A. No, they weren't.
Q. They were cotton, absorptive cotton, right?

A. They were cotton applicators, like Q-tip type?
Q. Okay. And a portion of it was cut off?
A. Yes.
Q. You don't know whether or not the EDTA that might have been in that bloodstain, once absorbed by the cotton, might have migrated in different concentration levels, do you?
A. Sorry, I need you to repeat that.
Q. You don't know whether once that stain was swabbed with cotton and gets absorbed into the cotton, you don't know whether the EDTA, if there was any in the blood, might have migrated differently as it's absorbed into the cotton, stronger in one place, weaker in another?
A. That would go against most principles in chemistry, for that to happen.
Q. Let me go back to the peaks for just a moment. You mentioned this -- one of the spikes was a 293 ion; do you recall that? I think you called it a parent, the parent?
A. It's the parent ion in mass spectrometry, when you are running it in positive electrospray ionization mode.
Q. And how many other organic chemicals in the world also share that parentage?

A. Have a molecular weight of 292?
Q. I think it was 293.
A. Well, the molecular weight is 292. It adds a --
(Court reporter couldn't hear.)
A. It adds a proton, p-r-o-t-o-n, onto it, to increase the weight by one. I don't know how many other chemicals in the world have a molecular weight of 292.
Q. Do you know how many other organic chemicals in the world have a parent peak of 293, a base peak of 160, and also peaks of 132 and 247?
A. Just looking at the mass spectrum, I would think that there is probably no other peak -- no other compound in the world that gives that same mass spectro profile.
Q. And have you compared it to any library of other organic compound spectrum that you have in your lab?
A. Yes, that spectrum is very characteristic of what you would find in a library for EDTA. It's very characteristic for what you find in publication, your Honor, that's previously presented for EDTA.
Q. How many other organic chemical compounds would have spectrums that would be close to that?
A. I don't know, there's over 12 million chemicals.

And there's no way that we can evaluate every single one.

Q. Well, what is the machine's or instrument's tolerance for being able to detect, let's say, a 292 from a 293?

A. It's set up so that it can -- it's within one mass unit. Essentially it can differentiate 293 from 292. It can differentiate 293.5 from 293.4.

Q. Okay. By the way, did you ever do any, or did Mr. Brewer ever do any presumptive test on these swabs, to be sure what he was testing was the swabs from the RAV4? Did he ever do any presumptive test to be sure he's testing blood?

A. No, we're not qualified to test for blood, for the presence of blood in the Chemistry Unit, that's done in our DNA Serology Unit.

Q. Okay. You know what I mean when I say substrate?

A. Yes.

Q. That's sort of like a surface, that a swab, in this instance, would be taken from.

A. Yes.

Q. And you don't know how the EDTA might be reacting to different substrates within that vehicle, do you?

A. Not really, no.

Q. And there are different ones, one is a dashboard, around the ignition, right?
A. Yes.
Q. That's what you have been told?
A. Yeah.
Q. You haven't actually seen the vehicle?
A. I have not seen the vehicle, I have seen pictures.
Q. Okay. Another is like a -- some sort of a vinyl CD wallet, case?
A. Yes.
Q. And another is a metal surface?
A. Yes.
Q. And you don't know how the EDTA may bind with any of those chemicals that are on those various surfaces?
A. Well, the metal surface wasn't bare metal, it was painted metal, so it's not metal like what we have been talking about. Other than that, I wouldn't expect there to be a significant amount of binding.
Q. But you don't know, for instance, even though it's paint, there may also be some sort of wax on top of it?
A. That's right.

Q. Or other, you know, chemical cleaners that maybe leave a residue?
A. That's right.
Q. Such as Armor All, for instance?
A. Perhaps.
Q. Okay. Some of those substances like, for instance, Armor All has EDTA, right?
A. I don't know that to be true.
Q. Does paint?
A. No, it doesn't.
Q. So you did not, for instance -- Let me go back for a second. You weren't present when the November 2005 swabs were obtained, right?
A. No, I wasn't.
Q. So you don't know how the lab technician swabbed those particular stains?
A. No, I wasn't present.
Q. Neither were you present when the controls were taken in February of 2007?
A. No, I wasn't.
Q. And you don't know, for instance, how close to the stain itself the controls were taken, whether they were half inch, 4 inches, what, you don't know?
A. No, I don't.

Q. And by the way, each of those three stains had two controlled swabs sent to you, right?
A. Yes, they did.
Q. But you only tested one?
A. That's right.
Q. And you didn't ask the person who was going to send you the swabs to do an experiment where they actually poured some of the blood vial onto those same types of surfaces, that is, on the metal, on the CD case, and on the dashboard, and then swabbed those stains for testing, did you?
A. No, I would never recommend anything like that.
Q. So, if you had done that, for instance, then you would be able to say, hey, here's what this stain should look like, if it had come from the blood vial, right?
A. I don't know if you can jump to that conclusion, quite honestly. Pouring it on and then saying, well, this is what it should look like if it came from that blood vial. It's making a lot of additional assumptions here, I don't think --
Q. Such as what?
A. -- that I would jump to the conclusion.
Q. Such as time delay?
A. That it was poured on as opposed to droppers

being used to deliver it versus splattering it. That's probably the primary thing.

Q. Why would that make a difference, if it's blood and it's supposedly got EDTA in it, why would it matter how it was put on the surface?

A. It was simply your question you asked. I didn't agree with the final conclusion, based on the question you asked.

Q. Well, let me try rephrasing it, probably wasn't that clear. If you wanted to be able to say that there's no way that those stains in the RAV4 could have come from the 11 year old blood vial, you could have had someone create, with a dropper, or whatever, pipette, you could have had someone create stains deliberately with the blood vial, swabbed those and tested them and then compared them to the swabs that were taken in November of 2005, right?

ATTORNEY GAHN: Objection, your Honor. I believe we're really beyond the scope of an admissibility hearing now.

THE COURT: I'm going to sustain the objection.

Q. (By Attorney Buting)~ You mentioned the auto sampler running in the middle of the night, it

actually takes, if I understand your protocol, what the -- what the person does is take these samples, cotton swabs or whatever, put them in some sort of little test tube and then add 200 microliters of a solution; is that right?

A. Yes, it is.

Q. And then that 200 microliters is allowed to sit and react for a period of time, right?

A. Yes.

Q. And then the whole tubes are centrifuged and the liquid is separated?

A. It's filtered, essentially.

Q. Okay. And the idea being, it's the liquid that you want because at that point you hope that it would have dissolved any EDTA that might be in solids.

A. But not just hope, our validation demonstrated that it does --

(Court reporter asked him to repeat.)

A. Our validation study demonstrated that it does dissolve any EDTA in the solid material.

Q. Okay. And then, so there's approximately 200 microliters of liquid in these vials?

A. That's correct.

Q. And the instrument only uses five microliters?

A. That's right.
Q. So there's another 195 microliters of liquid there that presumably would have the same result as the five that were taken out, right?
A. Approximately.
Q. Do you save that liquid to be retested?
A. No, we don't.
Q. You destroy it?
A. Yes, we do.
Q. So the defense has no opportunity to retest that solution that you have created, to determine if we would get the same results as you do, right?
A. No, instead we left half of the sample that we were provided with. We used half for our analysis and left half for defense retesting using your own protocol, not ours.
Q. Sure.
A. And your own controls, etcetera, to do their test.
Q. But if we wanted to test your protocol and your method, and not just the protocol, but the accuracy of the technician, Mr. Brewer, who is doing this test, that liquid would tell us exactly what it should. If we tested it, it should match what you did, if it was available,

right?
A. Again, it's -- to me it's a complex question. There's not a yes or no answer. If you wanted to test the work that was done by Dr. Brewer, you can look at the data that's in the packet and the controls. The controls let us evaluate whether or not the batch run operated as it was supposed to. It let's us assess whether or not the individual sample operated as it was supposed to.

Now, if you want to test our method, then it's a far superior idea to take the method and put it into the hands of another scientist and let them run the samples, following the whole protocol, as opposed to them taking our final extract and putting it on their instruments.

Q. But you don't keep the final extract?
A. No, we don't. We never do in chemistry.
Q. So -- All right. What is your error rate in this protocol?
A. The error rate, I would say, is zero.
Q. Have you done a study?
A. Well, yes.
Q. Do you know what I mean by error rates?
A. I absolutely do.
Q. Okay.

A. I teach on this topic. The error rate is something that you generally talk about when you're talking about your ability to distinguish a false positive from a false negative. And that's usually talking about a single analytical technique. So if you were going to just look at the HPLC method, you might be able to assess an error rate, if you're just looking at the time it takes for the compound to come out of the end of that column.

Now, when you are running multiple techniques, it's what we call self-correcting. Self-correcting because, as I indicated earlier, you do not rely on a single analysis to make the call. You have to take all the pieces of the data that you have and make sure that it all supports the final answer. And if it doesn't, then, you know, you really shouldn't make that call.

Q. Well, then are you saying that this kind of test you can never attribute an error rate?

A. There's no numerical error rate that you can apply to something like that, when it's this complex of multiple experiments being done and you are taking all of that data and applying it

to a final answer.
Q. So there may be some error rate, but we just don't know what it is, can't be quantitated, is that what you are saying?
A. No. Maybe you could -- One way that people assess error rates are looking at the results of proficiency tests. And as I indicated earlier, we did give ourselves a test, a blind test. And we had 10 samples.
Q. Ten samples.
A. Ten samples, that had either EDTA blood on them or did not, and we correctly identified them 100 percent of the time. So I -- I would -- that's -- if you want to put a number on it, I would say we have zero percent error.
Q. All right. And you teach on this, so tell me, when you -- when you devise a method of trying to validate a test and trying to figure out what the false positive or false negative rate is; is 10 samples considered sufficient?
A. For that technique of determining the error rate, yes, it is.
Q. When you are validating tests that can give you a known error rate, is 10 samples enough?
A. Generally, when we're talking about error rates,

we're talking about, again, techniques that are not as specific as mass spectrometry. We're talking about non-specific techniques that just give you a simple positive negative result, without a lot of data for the analyst to look at.

So that is a technique -- that is a value, a numerical value that let's another scientist know, how good is that particular method, if I stand on those results alone, and it doesn't have some expert looking over those data -- data points in order to make that call.

Now, you are taking that and putting it into a completely different realm with LC/MS/MS techniques, and especially when you are talking about multiple techniques being used to get that final answer.

Q. So if I understand your answer, then, is that this LC/MS/MS technique just -- you can't attribute an error rate to it?

A. I think you can by applying proficiency samples. That's probably the best way to --

Q. All right.

A. -- assess an error rate and that's what we have done in the past when we're asked to determine an error rate on a complex method.

Q. Okay. You said that EDTA --

THE COURT: Mr. Buting, can I ask about how much longer you think you have?

ATTORNEY BUTING: It's a while, half hour at least.

THE COURT: We'll take a break at this time, then, and resume at quarter to three.

ATTORNEY BUTING: Okay.

(Recess taken.)

THE COURT: Mr. Buting, you may resume.

ATTORNEY BUTING: Thank you, Judge.

CROSS-EXAMINATION CONTD.

BY ATTORNEY BUTING:

Q. All right. You told us that EDTA is very commonly found, right, in the environment?

A. Yes, it is.

Q. It's used in a lot of different, like household products, for instance?

A. Yes, it is.

Q. Detergents?

A. Yes.

Q. Some things like make-up, shampoo?

A. Yes.

Q. Some auto care products?

A. Yes, I'm sure there are some.

Q. I'm going to show you Exhibit -- First of all, are you familiar with the National Institute of Health?
A. Yes, I am.
Q. National Library of Medicine?
A. Yes, I am.
Q. Okay. I'm going to show you Exhibit 445, which is something just in the public domain as sort of a list of products that contain EDTA; would you just take a look at it for a moment.
A. Yes.
Q. I mean, you don't need to memorize it or anything, but would that be considered a reliable -- reasonably reliable data base of products, general everyday care products that have EDTA as part of it's composition?
A. Yes, it would be.
Q. And so, just so it's clear for the record, that's like a seven page document with a single page list of products, even by brand name, like Zest, and Suave and those sorts of things, right?
A. That's correct.
Q. Now, do I understand that the FBI has not actually tested any of these products themselves to see whether they have EDTA or what levels they

may be?
A. That's correct, we have not.
Q. Okay. Yet, when you tested the controls, which in your report are identified as K -- what are they, K-3, 4 -- 2, 3, 4 or something?
A. Yes, K-2 through 4.
Q. Okay. You found no EDTA in those controls, right?
A. That's correct.
Q. Now, given the ubiquitous nature of EDTA in the environment, was that sort of an unexpected result?
A. No.
Q. I'm going to go back to, just a minute, to this process where you -- you cut off a piece of the swab, Q-tip, and put it into this little vial, okay?
A. Yes.
Q. You do that with all of the control swabs too, right?
A. That's correct.
Q. And then you put this 200 microliter solution in it?
A. That's correct.
Q. If you had done that and then evaporated that

solution down from 200 microliters to say 20 microliters, would the concentration of EDTA be greater --

A. The relative --

Q. -- if there was any in it?

A. The relative concentration would have been greater, yes.

Q. Okay. And so if you wanted to test these controls, let's just talk about the controls for a minute, and evaporated that down from 200 milliliters to 20 and then sent it through the auto sampler that takes five microliters of that, if there were EDTA in that background swab, you would be more likely to actually detect it with these tests, right?

A. Not necessarily. If I can explain.

Q. Okay.

A. This particular instrument has been demonstrated to actually do the opposite of what you would expect. Generally, if we were talking about an instrument, if you concentrate the sample and shoot that sample into the instrument, you are going to get a better response.

This particular instrument, our experience, and others that use it, have found

that, actually, if you concentrate it, you have a detrimental effect on the signal because of that matrix suppression that I talked about earlier, that we evaluated as part of our validation study. So, by actually diluting it, you dilute the matrix interference compounds, or the things that might suppress the signal and, therefore, you actually have a better signal --

(Court reporter couldn't hear.)

A. For the analyte of interest.

Q. So, you might get -- you might get a signal showing EDTA, but you might also get interference from other ions as well?

A. Not so much an interference as it is the signal is lower than what you expect it to be.

Q. Okay. If you increase the solution from 200 microliters to 2,000 microliters, you are diluting it to the point where it may not show up at all, right?

A. Yeah, that's true.

Q. So this level of 200 microliters, if you adjust it a little bit up or a little bit down, you can actually make it so that your test will not see EDTA, even if it's there?

A. Well, if you take it to an extreme, yes.

Q. Okay. Now, at the dilution level you chose, it may be that EDTA is in those controls, but it's just too small or too low for your test to pick up?
A. That's true.
Q. And the same would be true for the bloodstains next to the controls in the RAV4, there may be EDTA in it -- in them, it's just too low for your -- you to detect with your dilution level?
A. And that's why we determine that detection limit, so we know what value that corresponds to what we're no longer able to actually differentiate the presence or absence of EDTA.
Q. But my point is you cannot -- you cannot absolutely say that there is no EDTA in those bloodstains in the RAV4, right?
A. Wrong.
Q. You can only say that you can't detect it at your level of detection, LOD, you are unable to detect it, right?
A. I am -- I am able to say that the bloodstains that were collected from the RAV4 do not contain the amount of EDTA that would be expected if that source of EDTA came from that tube of blood collected from that --

Q. Sir, that's not my question. Listen to my question.
A. I'm sorry.
Q. My question is, you cannot tell us, absolutely, that there is no EDTA in those bloodstains, you can only tell us that there is no EDTA at a level that you can detect from your instrument?
A. That's a fair statement, yes.
Q. Okay. Now, since you didn't provide an opinion about the level of -- or the quantity of EDTA in the test tube -- not the test tube. Let me rephrase that. As I read your report, what you are saying is your test detected some amount of EDTA in the blood vial, right?
A. Yes, it did.
Q. But not an amount that you were able to quantitate and express an opinion on?
A. It's an amount that I did not quantitate.
Q. Okay. And so you get a blood vial and it says EDTA right on it; it does right?
A. Yes, it does.
Q. So one would expect, if you test it, there will be some detectable amount of EDTA, right?
A. That's right, yes.
Q. Although, with 11 years having gone by, we don't

know whether it's the same level it started with, or something that's less, right?

A. I think that I testified earlier, I think that you can get an estimate, based on the analysis, as to whether or not there was significant degradation.

Q. But you don't know what you start off with, you don't know how much EDTA was in that tube to begin with, right?

A. Well, yeah, I do.

Q. You know a range?

A. I'm sorry. I know, based on what the manufacturers put into these EDTA tubes in order for the EDTA to function as they intend it to function, that the concentration, when that tube is filled to the standard volumes that they put blood into these tubes, it ranges between 1,000 and 2,000 parts per million.

Q. Okay. But now, what you don't know, first of all, is what the original volume of blood, whether it filled that tube or not, right?

A. No, I don't know how much was originally in that tube --

Q. Okay.

A. -- that's correct.

Q. And you don't know, other than this range, you don't know the actual amount of EDTA that started off in that tube 11 years ago?
A. Well, it would be, in my opinion, that it would be between 1,000 and 2,000 parts per million.
Q. Well, that's a pretty big range. My point is, you don't know the numbers, right? It's not like you just get --
A. Yeah, I did measure a number.
Q. You don't know what you started with in 1996. You don't know what the number of EDTA was in that vial in 1996?
A. Not exactly, no.
Q. Okay. Thank you. And you mentioned that there's more EDTA in one of these blood vials than is needed to chelate or bind with the metals, like calcium and iron, right?
A. That's correct, yes.
Q. But I assume that varies sometimes depending upon the person?
A. Depending on their diet, generally.
Q. Okay.
A. We intake calcium, intake iron, in our diet. And then through metabolic processes, we actually generate waste that are those ions --

Q. Okay.
A. -- those metals, if I can clarify.
Q. So, what your opinion, today, basically is, there is EDTA at some detectable level in the blood vial, first, right?
A. Yes.
Q. And your opinion is that there is no detectable EDTA in the three stains from the RAV4 that you tested, right?
A. That's correct.
Q. Let's take that last opinion, that there's no detectable level of EDTA in the RAV4 stains, okay?
A. Okay.
Q. That's something that you could have done, if you had been asked, back in November or December of 2004, right? I'm sorry, 2005, right?

ATTORNEY GAHN: Your Honor, I'm going to, again, interpose the objection. I think we're going way beyond an admissibility hearing?

ATTORNEY BUTING: No, it's we're going directly to the whole question of the next motion, sequential testing or not.

THE COURT: Well, it does go to the next motion, but that's not the motion we're hearing at

this time. So I'm going to sustain the objection. At this time we're taking evidence on the State's request to have this witness testify as an expert. I'm going to sustain the objection.

Q. (By Attorney Buting)~ Okay. Your opinion that you prepared in the report, does not in any way make a comparison to a quantitated level of EDTA from the blood vial to the bloodstains, does it?

A. We did not perform a quantitative analysis on this case.

Q. Or comparative analysis of the blood vial to the stains?

A. I'm not sure I understand your question.

Q. To get the results that you got on the bloodstains, you would not have needed the blood vial in your test, would you?

A. I think to interpret the data fully, we needed the blood vial. But to get the results, you are right, we didn't need the blood vial.

Q. Okay. And, in fact, one of the requests that you got from the Milwaukee office, when it described what was necessary and what kind of test it was, they asked you to conduct relative comparisons to swabs from the crime scene?

ATTORNEY GAHN: Objection, your Honor,

relevancy, for the purposes of this hearing.

THE COURT: Sustained.

Q. (By Attorney Buting)~ All right. Is this a fair statement that, at best, your tests tell us whether or not there is any detectable EDTA in the bloodstains now, 16 months after they were found?

A. Yes. That's a fair statement, yes.

Q. Your test does not tell us whether there was any detectable EDTA in the bloodstains when they were -- first came to be in the Toyota RAV4, 16 months earlier?

A. I'm sorry, but I disagree.

Q. Well, would you agree that if there was EDTA in those bloodstains, in November of 2005, then it matters not whether your tests now, 16 months later, shows no EDTA?

A. Well, I disagree with that statement too.

Q. And why is that?

A. If there was EDTA in the bloodstain when it was originally collected and it didn't show up today, to me that would suggest that there was some evidence switching, that it wasn't the same stain that we analyzed.

Q. Okay. And that's based on your assumption of how

fast or slow EDTA might change or degrade in the environment?

A. It's based on what's published and my own experiments that show that EDTA is quite stable in a bloodstain. And in a tube of blood, I would add.

Q. Well, I'm talking about the bloodstains, for now, okay?

A. Yes.

Q. In the little study that you made up of those 10 spot cards that were 33 months old?

A. Yes.

Q. Did you quantitate the amount of EDTA that were in those bloodstains?

A. No, sir, this was not validated as a quantitative procedure. So it was simply qualitative, was it there or was it not there.

Q. And you know of no study that has quantitated the bloodstain that is 11 years old versus one that's 33 months old?

A. A bloodstain that's 11 years old?

Q. Or a blood sample?

A. No, I don't.

Q. Just one more question, I think. The matrix, you mentioned four experiments, something called

matrix suppression?
A. Yes.
Q. And what that does is it tends to actually suppress an ion that is there, but you don't see it?
A. That's exactly what matrix suppression is. It suppresses the signal on the instrument, so you may miss something that's there. And we would -- like I said, we did validate that.
Q. And your validation there was that there could be as much as 33 percent suppression of what the actual amount should be?
A. That's correct. If the range of suppression was between 3 percent and 33 percent or 34 percent.
Q. And that's not considered significant to you?
A. No. No.

ATTORNEY BUTING: All right. I have no further questions.

THE COURT: Mr. Gahn, any redirect?

ATTORNEY GAHN: Just one moment, your Honor, please. No questions, your Honor.

THE COURT: Very well, the witness is excused.

THE WITNESS: Thank you, your Honor.

ATTORNEY BUTING: What do we want to do

with that exhibit he has, can we make a copy and file it later as --

ATTORNEY GAHN: What I have here, your Honor, is the exact same copy. I will have this copied and then we can mark it as an exhibit.

THE COURT: Very well.

ATTORNEY GAHN: Do you want to give it a number now or save one for it? But I will have it reproduced.

THE COURT: What's the next number?

THE CLERK: 446.

THE COURT: 446. All right. The full report will be 446.

ATTORNEY BUTING: And just so the record is clear, it's not a report, it's the lab sheets, data, those sorts of things.

THE COURT: I apologize. That's a good correction, because I think the shorter document here is actually entitled a report.

All right. Counsel, at this time the Court will hear argument on the State's motion to admit the EDTA test results. Mr. Gahn, are you going to be arguing that for the State?

ATTORNEY GAHN: Yes, your Honor, and I'm going to rely upon the -- that portion in the brief

that we filed, our motion to admit EDTA test results and then permit expert testimony on -- in the State's case-in-chief. And I will just refer the Court to pages 10 through 13, which I think certainly talks about the law and the status in Wisconsin.

Basically, I think this Court has to look at the analysis of the EDTA derived from the LC/MS/MS testing procedure and determine if that is admissible. And the Court has to look at three factors under our case law in Wisconsin. Is it relevant? I think clearly it's relevant to the facts in this case.

Number two, is the witness presenting the evidence? Is that person qualified as an expert to do so? I think, clearly, Dr. LeBeau, through his testimony and through is CV, show that that would be the case.

And, three, is the evidence, would it assist the trier of fact in determining an issue of fact. And I think that -- I don't think that the normal or the typical citizen of the community understands LC/MS/MS technology and how it works and what EDTA is and its function and the analysis of that. And I think this certainly

would clearly assist the jury in arriving at a decision in this case. And that's all I have.

THE COURT: Mr. Buting?

ATTORNEY BUTING: Actually, Mr. Strang is going to take this.

THE COURT: Sorry, Mr. Strang.

(Previous Avery transcripts, Wolstad should be Walstad.)

ATTORNEY STRANG: The way we divide things up, your Honor, is that Mr. Buting does the hard work and I come in later. ***Walstad*** is the starting point, whether it ought to be or not. Much could be added to the discussion, but I won't. Wisconsin has not adopted the United States Supreme Courts' approach to tender scientific or other expert evidence set out originally in ***Daubert vs. Merrell Dow Pharmaceuticals*** in 1993 and elaborated in cases after that.

Wisconsin persists in the ***Walstad*** approach and I agree in a general way with counsel that there are three factors the Court need consider, under ***Walstad***, in deciding admissibility initially here. One, is relevance. Two, is whether the tendered witness is an expert. And, three, is whether the evidence or the opinion would be helpful to the jury. Would

the Court prefer that I wear the --

THE COURT: Sure.

ATTORNEY STRANG: -- mike? How is that? Does that work any better?

THE COURT: Yeah.

ATTORNEY STRANG: All right. The third criterion is, would the evidence or the opinion be helpful to a jury? And that really is where we founder here, the question of whether there was EDTA in the blood found in the Toyota. And the critical caveat here, whether there was EDTA in the blood in the Toyota in November of 2005 is relevant. That is, there is a material issue of fact here to be decided by the jury, which is, did the blood come freshly from Steven Avery's finger or some other source on his body, on or about October 31, 2005, or did the blood get in the Toyota because, put there by someone else, presumably from a vial that itself dated back to 1996.

And we can, you know -- The vial contained EDTA, let's assume, for the purposes of argument, even setting aside the expert's opinion confirming that --

(Court reporter couldn't hear.)

ATTORNEY STRANG: Even setting aside the

expert's opinion confirming that the vial contained EDTA.

So, that's a material question in this case. And evidence that made it more or less likely that the material proposition was true would be relevant here. So, if this is evidence that there was no EDTA in that blood in late October or early November, 2005, then it's relevant.

Mr. LeBeau's qualifications, particularly as an analytic chemist who can use a liquid chromatograph, matched with a tandem mass spectrometer, is beyond serious dispute. We don't dispute that here for purposes of the admissibility determination. He's a good deal more qualified than the holders of bachelor's degrees from our State Crime Laboratory in Madison who have made their appearance in this trial.

But the problem is whether this is helpful to a jury. And what this Court is being asked to do, just so that no one makes any mistake about it, your Honor is being asked to join a select club. In fact, there's only one other member of the club, so far as anyone knows.

And the founding member of the club is Judge Lance Ito from the Superior Court of Los Angeles County, in the O.J. Simpson trial.

And, your Honor, the State nominates to be the second member of this club, and that is, of judges or courts who have admitted evidence concerning EDTA analysis, in dried bloodstains, in a criminal trial. And the similarities between which Judge -- that which Judge Ito did and that which your Honor is being asked to do, actually continue.

We now know, after testimony today, that the protocol for testing was prepared hurriedly, that it was prepared during the O.J. Simpson trial which, of course, went a good deal longer even than this trial. I think the preliminary hearing in that case went a good deal longer than this trial. But it was a mid-trial creation of a protocol, mid-trial testing. And, then, evidently, further mid-trial retesting and reconsideration of some of the earlier results.

That, of course, is what we have here. As Mr. Buting has discussed before and I think even offered the Court, or at least read from an email between Mr. Kratz and the Crime Laboratory,

non-quantitative EDTA testing of the bloodstains from the Toyota was under active consideration by the State in February of 2006. For strategic reasons, evidently, the State chose not to pursue that testing then.

Now, beginning about the end of January, 2007, the State decided to pursue such testing and enveigled the FBI into doing it -- or prevailed upon the FBI Chemical Unit at the laboratory to assist the State in that manner. Those tests occurred sometime between February 1, when I believe the actual swabs and control samples were received at the FBI Laboratory. I may be off a day or so, but I'm very close there. And what is it, February 26th that our report is dated, or Mr. LeBeau's report is dated.

And if I recall his testimony, the work on a protocol for conducting those tests began in January, 2007. The protocol evidently was, according to his testimony, ready for an approval process by February 14, 2007. We were at that point, nine days into trial.

And that approval process evidently went very smoothly for Mr. LeBeau because the protocol itself was issued and dated February 15, 2007.

So within one day, I gather, from his testimony and the date on Exhibit 434, approval was accomplished within the FBI bureaucracy for this protocol.

The protocol was developed for no case but this. The protocol has been used in no case but this. The protocol is unrevised. The protocol has been validated, if at all, only internally, in the FBI, and, again, approved apparently in the course of 24 hours, after submitted for approval. All of these things are similar to the evidence that -- that Judge Ito admitted in the Simpson prosecution, out in Los Angeles County.

We now have results that are non-quantitative and that express, necessarily, an opinion that no EDTA is detected in the swabs, the three swabs from the bloodstains, or in the control samples that were also submitted at the same time. Although, Mr. LeBeau ventures an opinion that he, therefore, can opine that no detectable EDTA was present back at the relevant time, October, early November, 2005. He has to support that opinion, one degradation study and apparently one degradation study only.

Your Honor has seen the entirety of it, two pages, one of handwritten notes and one that consists of a short paragraph. And as I understand it, what Mr. LeBeau did was went over to the DNA Unit across the hall, or wherever it is, figuratively, in Quantico, said, let me have some old spot cards, which would be blood on a different medium than submitted here, on a PH neutral stable matrix of a spot card.

And evidently someone told him that the blood on these spot cards came from something from the EDTA purple-topped tube. We don't have much detail on how he satisfied himself of the EDTA origins or content of the spot cards.

These things are about 33 months old. He tests the 10 of them. And he finds EDTA in the free acid form in all 10 spot cards. Finds the iron chelate of EDTA in hardly more than half of them, in 6 out of 10. And sort of dismisses that as insignificant to his conclusion that, boy, EDTA sure must be stable and must not degrade quickly in bloodstains.

We don't know why he dismissed that so freely, other than that he seemed to take reassurance from the fact that he found the free

acid form of EDTA in all 10 of these. And that's it. That hasn't been peer reviewed by anybody, evidently not even within the FBI, so far as the record shows. Certainly hasn't been published.

Certainly doesn't explain what differences in degradation there might be, were a different matrix or medium to be used. For example, the cotton swab that was submitted here, as opposed to the blotter paper spot card there, which of course is specifically designed for stabilizing and holding blood.

Doesn't have any way to explain, or hasn't, so far as we can see, considered what environmental differences there may be that would have produced different degradation or could have. And has no way at all to extrapolate to the degradation he would expect in a 9 or 11 year old sample of blood in any medium, whether in the vial, whether on the swab, whether on the substrates found in the Toyota.

So he is not able, here, to give us any curve at all, because he's only got one point to plot on the graph, which is 33 month old spot cards. We don't have anything that's less old. We don't have anything that's more old. We have

nothing that would establish a rate of degradation in any environment, let alone in the relevant environment.

So to suggest on that dataset, and with that level of scrutiny, that this is helpful, that an opinion that the EDTA was not detectable or present back in November of 2005, based on a failure to detect EDTA in the blood swabs in February, 2007, really is rank speculation, or so close to rank speculation that it's simply not helpful to a jury. The opinion just isn't helpful.

Now, you know, an analogy, if your Honor were trying a slip and fall case in a commercial establishment and the question, the material issue was what comparative negligence ought we assign to the plaintiff, and the defendant store owner wanted to call a palm reader and an astrologer. The palm reader would say, I have examined the plaintiff's hand and he's the kind of person who is prone to accidents and he must have known that. The astrologer to say, the plaintiff's zodiac for that month, his horoscope for that month, says that he ought to be careful because unexpected things could happen.

This would be relevant under the ***Walstad*** standard. And a properly qualified horologist or astrologer, a properly qualified palm reader, one of many years experience, certainly could be qualified as having specialized knowledge. But their opinions, I submit, would not be helpful to a jury. And even under ***Walstad***, wouldn't be admitted because unhelpful, even though the issue of comparative negligence and whether the plaintiff took adequate precautions is relevant and the witnesses are qualified.

The examples are a reduction to the absurd. And I don't, here, stand before the Court and suggest that Mr. LeBeau is the moral equivalent of a palm reader or an astrologer. I don't suggest it. But the example also is illustrative, I think, of how his opinion here, based on the hurried assembly of a protocol, the mockery of a degradation or stability study, the lack of outside validation in any of the work, and the effort to extrapolate without degradation data, back from February of 2007, to November 5, or days before that, 2005, is simply not helpful to a jury.

It would be possible here for the Court

to admit the opinion that in mid February, 2007, within the detection limits of the FBI Lab, there was no detectable EDTA in the blood swabs. On that opinion alone, the State is on much more solid ground.

But the opinion that, therefore, the blood in the Toyota did not come from the blood of Steven Avery's vial, which necessarily carries an opinion about what the EDTA level would have been, in the swabs of the dried bloodstains at the relevant time, again, autumn 2005, that's not helpful to a jury, because it's wholly unreliable, unsubstantiated, other than by the man who wrote the protocol was one of the people who approved his own protocol, donated his blood for the test, supervised the testing, and assigned himself to the case.

Now, let's not forget, in weighing all of this, that although good, Mr. LeBeau clearly is not perfect. He didn't claim that he is and if it were possible to bring Dr. William Sybers here from Florida, I would have a pretty good witness to tell the Court that Mr. LeBeau and his work is not perfect, neither are perfect.

He was proven wrong there on an effort

to extrapolate back, nine years in embalmed tissues, the presence of a metabolite, a muscle paralytic drug, succinylcholine. As we showed, the Assistant Attorney General, Special Assistant Attorney General for the State of Florida, who prosecuted that case, later filed with the court a document warning that Mr. LeBeau's results, and for that matter, National Medical Services results, Dr. Ballard's results, ought not be relied upon.

So it is a select club that your Honor is being asked to join. What's different and, I mean, I'm foreshadowing the next argument, but this has a bearing now on this question. What is different and worse about this case and Simpson is that your Honor is being asked to admit these mid-trial results, and opinions extrapolated backward from the results, without benefit of degradation data, when one side and one side only, as a practical matter, will have the ability to do any testing at all.

And that's where this case really is different from Simpson. There is no reason to believe and, indeed, if my memory serves, both sides in Simpson participated in EDTA testing and

had the opportunity to do that, during the course of that trial.

Not so in this. And there is no 14 million dollar defense fund here that there was because O.J. Simpson was the one in a million criminal defendants who had that kind of money to put into his defense for experts, for lawyers, for Barry Scheck and Peter Neufeld, people from the original innocence project at Benjamin Cardoza Law School, people who are well versed in chemistry and in forensic science.

So acknowledging that it would be possible here to allow part of Dr. LeBeau's opinion, that is, the opinion that no EDTA was detectable by the method they used in February, 2007, I think the Court would err and would allow evidence that is not helpful to the jury, were it to allow Dr. LeBeau to go further than that.

And the fact that there will be no independent testing has a bearing on this ***Walstad*** analysis because, if for no other reason than because of this, the failure to detect EDTA in control samples here is highly, highly suspicious given the ubiquitous presence of EDTA in the whole gamut of consumer products, from the soft

drinks we drink, where EDTA is used to prevent a carcinogen from forming, benzine; to Armor All, used to clean cars and their interiors; to all sorts of personal care products, detergents, cleaning products; the failure to defect any EDTA in any of the controlled swabs is a bright red flag here. And we would start immediately with that, if we had an opportunity to do independent testing. Because it's just flat out counter intuitive.

It just does not comport with common sense. I will venture a guess that the belief that the State would find EDTA in the dried bloodstains and in controlled areas is what led the State, tactically, in February, 2006, not to undertake this very testing, on which they have taken a chance now, once it turns out there is a blood vial, that there was a source of whole blood that could have been planted here, conceivably.

And I don't know whether the answer for those control swabs would lie in just because there really was no EDTA detectable, or whether it would lie in the dilution that the FBI used, 200 microliters of inner reagent or fluid added

to five microliters of the sample. I don't know. I'm not a chemist. We'll never know before this jury comes back with a verdict, if the Court admits Dr. LeBeau's testimony.

I ask the Court not to go down that path, not to join Judge Ito's club and not to admit opinions from Dr. LeBeau that, although they sound impressive, coming from an FBI expert, in fact, offer no honest help to this jury.

THE COURT: Mr. Gahn.

ATTORNEY GAHN: Your Honor, the State is simply asking this Court to apply the law in Wisconsin to the admissibility of expert testimony and scientific evidence in Wisconsin. We have given you a statement of the law, I'm sure the Court is aware itself of the standard in Wisconsin for the admissibility of this type of evidence. I think Dr. LeBeau clearly established to this Court the wide use of the LC/MS/MS technology and that it is a technology that can test for chemicals, it doesn't make any difference what that chemical may be.

He's testified how samples will come into the FBI and say, would you test this to see if there are any chemicals in it. And perhaps there will be a panel that they will find. Or

some item will come in and say, will you test this for a specific chemical, such as cyanide, or something, or EDTA.

All of that is possible to be done. It's done with very standard well recognized instruments in the scientific community and that's exactly what he did. Samples were submitted to him to test for the presence of EDTA. He has the technology that is world wide recognized, capable of doing that. And that's what he did.

I think he explained well that this was a qualitative test, not a quantitative test. I note that the defense has talked a lot during cross-examination about quantitating this. But how do you quantitate something that's not there.

His test results on the bloodstains from the RAV4 and on the controls from the RAV4, there was nothing there. So this was a qualitative test under the umbrella of analytical chemistry and very valid in the scientific community.

I think he established his background and experience in the area of degradation. They did their own degradation studies. He talks about so many other fields that are testing for

EDTA. EDTA can be somewhat of a problem because it does stay around, binds to metals. And there's problems in the agricultural world, wildlife, fish, and game.

I think he was clear, this isn't something that's not tested for, it is tested for and it can be tested for. Everything that the defense has brought up, whether it be about the controls, the commercial products, suspiciousness about the testing results, datasets produced, degradation rates, all of that clearly goes, your Honor, to weight of evidence and has nothing to do with the admissibility of evidence.

And I think a reading of the ***Peters*** case, where they did an analysis under the DNA testing, clearly shows the difference between admissibility and issues that are for the weight of evidence. So I would ask the Court simply to -- we're not inviting you to join any clubs, your Honor, we're just asking you to look at the law in Wisconsin and apply it to the testimony that you heard from Dr. LeBeau. Thank you, sir.

THE COURT: All right. Well, the reference to Judge Ito's club is interesting. Actually, from my recollection of that case, I believe that the

evidence came in without objection, because both parties must have felt they had something to gain by it. So to the extent there is a club, one way or another, I think I'm probably the only member.

The historical reference to the O.J. Simpson case is interesting, but my obligation in this case is to apply the law as it is in Wisconsin and determine whether or not the offered evidence is admissible in this case. And I think it's helpful to briefly review the standards that have historically applied in this jurisdiction and others, governing the admission of evidence.

At one time, the prevailing standard in many parts of the country was what is known as the ***Frye*** test, which held that the trial court is to determine whether the expert evidence had gained general acceptance in the particular field to which it belongs. In this case, I think there's a serious question about that, because of the lack of a significant history of EDTA testing.

The United States Supreme Court subsequently replaced the ***Frye*** test with the ***Daubert*** test, which relaxed the federal standards

somewhat, but still required a trial court to assure that expert testimony is reliable. In Wisconsin, it's pretty well established that we have a standard that is more lenient than even the ***Daubert*** test, that is the standard that's set forth in Section 907.02 of the statutes.

That statute provides that, as a condition to the admissibility of expert testimony, the evidence is admissible if it is relevant, if the witness is qualified as an expert, and if the evidence will assist the trier of fact in determining an issue of fact.

In this case, I don't believe there is a dispute between the parties on the first two issues. Unquestionably, the evidence relating to the question of whether or not the blood in the RAV4 was planted is relevant, certainly it was the -- a large part of the defense's opening statement and cross-examination of some of the witnesses. And, likewise, the State is equally concerned to show the jury that the blood was not planted, but came directly from the defendant. So I think it's definitely relevant.

Likewise, there's not a serious dispute that the witness in this case, Dr. LeBeau, is

qualified as an expert. He testified as to his qualifications. He's got a master's degree, a doctorate degree. He's worked at the FBI Lab for a number of years. In fact, he's the head of his section. There's no question that he is qualified as an expert.

The issue boils down to whether the evidence will assist the trier of fact in determining an issue of fact. And I think some of the comments that have been included in Wisconsin Court of Appeals decisions and the Supreme Court are worthwhile repeating here as a backdrop, if you will, to the standard the Court is to apply.

The Court of Appeals in the ***Riva*** case, reported at 266 Wis. 2d, 696, noted as follows: The approach, that is, the Wisconsin approach to allowing expert testimony, has served to reduce the gatekeeper role of the Wisconsin trial court when it comes to expert testimony. Reliability is not part of the trial court's function. Rather, reliability is an issue for the trier of fact, not the trial judge as a predicate for admissibility. The reliability of expert testimony is an issue for the trier of fact, not

the circuit court as a predicate for admissibility. Instead, Wisconsin relies on the vehicle of cross-examination to test the reliability of an expert witness.

So in looking at some of the items of dispute, as Mr. Strang pointed out, and which I'm certain will be a part of the cross-examination of the witness in this case, there are points to be made with respect to the reliability of the testing method that was used in this case.

However, the Court cannot say that the evidence would not assist the trier of fact in determining an important issue. The witness' testimony was, to a reasonable degree of scientific certainty, that the blood that was found if the RAV4 did not come from the blood vial in this case. The results are not quantitative. To be certain, the question of degradation is an issue which will no doubt be explored by the defense in its case.

But for the Court, on it's own at this point in the proceedings, to make a determination that degradation has been demonstrated to the point that the evidence will not assist the trier of fact, is simply further than the evidence

presented today authorizes the Court to go.

The witness testified he didn't believe that the difference in the results here could be explained in terms of degradation. And while the evidence may not be conclusive one way or another, the Court is not in a position, under the law which the Court is expected to apply, to make that determination today.

So, in conclusion, I believe that the State has met its burden here to show that the evidence of this expert is admissible under the standards of Section 907.02 and the Court will grant the State's motion to allow Dr. LeBeau to testify in this case.

Based on the Court's decision on the State's motion, it is necessary to rule on the defense motion for sequential and independent testing. I am going to take a few minutes to retire to chambers and review my notes about this and then I will come back and issue an oral decision on that motion as well.

ATTORNEY BUTING: Judge?

THE COURT: Yes.

ATTORNEY BUTING: Just a point of clarification, so the record is clear, the Court is

allowing Mr. LeBeau, then, to give an opinion -- two opinions, the two opinions sought by the State, that no EDTA was in the swabs when he tested and that his opinion is, therefore, the blood on the swabs could not have come from the tube of blood. Is that right?

THE COURT: I believe he's got opinions about the blood in the tube as well as the blood in the vehicle. And I'm allowing him to testify about both those items.

ATTORNEY BUTING: But the ultimate opinion, though, of saying that the blood on the swabs could not have come from the blood in the tube; is that being allowed?

THE COURT: Yes.

ATTORNEY BUTING: All right.

THE COURT: We'll resume in 15 minutes.

(Recess taken.)

THE COURT: All right. Mr. Strang.

ATTORNEY STRANG: I'm sorry, your Honor, just two follow-ups. One, we neglected to move the -- I think Exhibits 438 through 446, which were the items the defense marked on Dr. LeBeau's cross-examination.

THE COURT: Any objection?

ATTORNEY GAHN: No, your Honor. And I believe that I failed to move in Exhibits 433 to 437.

ATTORNEY STRANG: No objection there.

THE COURT: Very well, all the exhibits marked today, then, are admitted into evidence.

ATTORNEY STRANG: Second, your Honor, I would be remiss if I did not pose directly to your Honor an argument that ***Walstad*** ought to be overruled and that, in the end, Wisconsin courts ought to come in line with ***Daubert*** and adopt a similar test of admissibility of scientific or expert testimony.

I make that argument now and suggest that, particularly on something this complex, with as little of the underlying criteria of reliability as there are present, a court acting as gatekeeper with, in many ways, superior resources and perhaps background knowledge of scientific endeavors, could not make a finding of reliability as a threshold matter to admissibility on the opinions that Dr. LeBeau proposes to offer.

To the extent that Wisconsin leaves that reliability determination to a jury of laypersons, I think that this rises to a due

process denial. A criminal defendant has a right both to be tried and sentenced on reliable information. The due process roots of that go at least back to the United States Supreme Court in ***Williams vs. New York***, which I think is 1948. And I'm sorry, I don't have a citation because I'm relying on my memory of the case here.

But to the -- If the Court correctly applied ***Walstad***, a point on which I respectfully disagree with the Court, nonetheless, leaving the reliability here to a jury for this unreliable evidence that the State proposes to offer, I think results in trying Mr. Avery on unreliable information and rises to the level of the due process violation.

So I ask the Court, on those brief remarks, to reconsider its decision on the assumption that ***Walstad***.

would be overruled, that its time has passed, and that Wisconsin will come into line with the federal courts and the growing majority of state courts that rely, either on ***Daubert*** or even still on the more restrictive ***Frye*** test.

THE COURT: All right. The Court will note your objection for the record. Given the fact that

Walstad, I believe, has been reaffirmed a number of times in reported court decisions, I'm not going to -- Well, I'm going to deny the request to reconsider the Court's decision and -- but I will note your objection for the record.

At this time, then, since the Court has ruled that the EDTA expert evidence offered by the State is admissible, the Court is required to rule on the defendant's motion for sequential independent testing and funding. The defendant filed that motion on February 25th in order to permit the defendant to conduct independent testing for the presence of EDTA in what has been referred to as the vial of blood from the Manitowoc County Clerk's Office from the defendant's 1985 case, as well as the bloodstains allegedly belonging to the defendant which were found in the victim's RAV4 vehicle.

The motion requests that the Court grant the defendant permission to conduct testing sequential to the FBI testing. That would involve either declaring a mistrial in this case or continuing it for a period of several months. In addition, the defendant requests that this testing be conducted at public expense because

the defendant is indigent.

There certainly is provision in the statutes for expert testing to be conducted by both parties, including the defendant. The relevant statute is Section 971.23 (5). The question in this case is really not so much the right of the defendant to conduct testing, but rather the timing of the request to perform such testing, coming as it does in the middle of the trial.

The parties do not cite the Court to any directly relevant case law on this subject and I don't believe there is any. I attempted to find relevant case law myself. I think the Court's decision has to boil down, as it often does in these cases, as one of fundamental fairness; that is, under the circumstances as they have developed to this point, does fairness and a meaningful opportunity on the part of the defendant to present a defense require that the relief being requested by the defendant be granted.

In order to evaluate all of the circumstances in this case, under that standard, the Court believes it is necessary to first

review the relevant procedural history of this case. The Court has to consider not just the inability of the defense to conduct sequential testing at this point in the trial, which I doubt that even the State would contest is a given, I think it would be difficult for the defendant at this point to conduct that testing. But the Court also has to consider the opportunities that the defendant had in the course of these proceedings to conduct such testing, had the defense desired to do so.

In that regard, I would go back, first, to July 10 of last year, which was the date the Court issued an order requiring notification of any extrinsic planting evidence to be provided, by the defendant, at least 30 days prior to the start of the trial.

Approximately 10 days after that, on July 20 of 2006, that represents the date which the State asserted and has on a number of occasions, was the latest date by which the defense knew of the existence of the container in the Clerk of Court's Office, which represented that it contained Steven Avery's whole blood sample according to the defendant's original

motion for access.

As the defense noted in it's argument, that's not the equivalent of knowing necessarily that the blood vial was there, because the blood vial hadn't been examined at that point, but the defendant has not disputed the State's assertion that the knowledge of at least the existence of the box representing that it contained the defendant's sample would have been made known to the defendant by July 20th of last year.

On October 27th of last year the Court issued a scheduling order setting both a discovery deadline and the deadline for the State to name expert witnesses to December 15th of 2006.

On December 6 of 2006, which was 9 days before the discovery deadline, the defendant filed a motion for order allowing access to prior court file, which sought the opening of the container purporting to contain the defendant's blood, in the Manitowoc County Clerk of Court's Office.

On December 14, the attorneys for both sides met jointly to examine the vial and found that it appeared to contain whole blood and

represented on its label that it was the blood of the defendant.

On January 4th, the State filed a motion to exclude the blood vial evidence, or in the alternative adjourn the trial in order to permit the State to analyze the blood sample. A hearing was held on that date.

Five days later, on January 9th, the Court denied the State's motion for a continuance in order to analyze the vial of blood.

On January 12 of 2007, which was not quite, but close to, 30 days before the scheduled start of the trial, the defendant did file a statement on planted blood describing the basis for seeking introduction of the blood vial evidence in this case.

On January 16th, the State filed a reply opposing admission of the blood vial evidence.

On January 19th, the State asked to be relieved of its obligation to disclose expert witnesses with regard to the blood vial evidence. The State did not oppose that request and the Court granted it on the record.

On January 30th, the Court granted the defense request to allow the blood vial evidence

in, subject to limitations.

Taking into consideration that part of the procedural history in this case, the Court comes to a few conclusions. First of all, the Court finds that the defendant in this case did timely comply with notice requirements that were set by the Court.

The statement on planted blood that was filed on January 12 was slightly less than 30 days before the start of trial required by the Court's order, but I believe that at some point after December the Court allowed that filing by that date.

The history also shows that the defendant had knowledge of at least the suspected existence of the blood vial long before the State did, that is, sometime on or before July 20 of 2006. The defendant indicates, at page 17 of his brief, that counsel for both sides did not know of the contents of the box until they opened it together on December 14th. And while that technically may be true, given the label on the box which was attached as an exhibit to the defendant's motion and the extensive information about the box in the defendant's December 6th

motion, the Court concludes certainly that the defense had much greater reason to suspect the existence of the blood vial well before December 14th; and, in fact, virtually immediately made it in public statements, an important part of the defense case.

The Court also concludes that if the defendant had felt the testing of the blood was important, the defendant had adequate opportunity in which to arrange for such testing. The defendant could have sought release of the blood vial much earlier and requested permission to test it himself under Section 971.23 (5).

In the alternative, if the defendant did not want to risk spending resources on a test which could possibly produce inconclusive or unfavorable results, the defendant could have disclosed the existence of the blood evidence earlier, asked the Court to set a deadline for the State to conduct any testing that it wished to conduct and still allow the defense adequate time to make its own decision as to whether or not it wanted to independently test the blood vial, all of which could accomplish -- been accomplished well before the start of trial in

this case.

The Court believes the defense decision not to pursue identification of the blood vial until very close to the discovery deadline was a decision that the defense was entitled to make. That is, I find that it was a reasonable decision on the part of defense counsel. There certainly could have been a number of reasons for making that decision.

While there are procedures for testing EDTA, as Mr. Buting informed the Court on the January 4 motion hearing, there are no standardized -- universal standardized protocols or universally accepted quantitative standards and it would have been entirely possible that the result of any testing conducted by the defense could have been inconclusive. In addition, the testing results could have been inculpatory rather than exculpatory.

Finally, by waiting until shortly before the time it was permitted to do so, the defense may have left the State with less time to prepare to meet the evidence and, specifically, with not enough time in which to conduct the State's own tests. It certainly appeared, based on the

original State request to adjourn the trial, that that may well have been the case here.

However, the fact that the decision as to the timing of the motion seeking access to the blood vial was within the deadlines set by the Court and was reasonable, that does not mean that the defendant is allowed to second guess the strategy at this point and be entitled to a mistrial or lengthy continuation of the trial in this case.

The Court believes that it would have been highly foreseeable that, once made aware of the blood vial evidence, the State would want to test the blood in order to refute any planting defense and would likely make every effort to do so.

On that point, I think it's worthwhile to go back to the transcript of the hearing on January 4, that is, the hearing on the State's request to adjourn the trial in this case and repeat some of statements that were made at that time.

Defense counsel informed the Court at that time that it only would -- that it would oppose a continuance of the trial date unless the

defendant was released on bail. Included among the statements from the record of that hearing are the following from defense counsel: And if, that is, Mr. Avery, is to remain in custody, we will and do oppose adjournment of this trial. We want it to go forward on February 5 if he is to remain in custody. That was from page 18 of the transcript.

On page 19, defense counsel argued, But if the State wants to test and if Mr. Avery is to remain in custody, the trial ought to go forward while the testing process is going forward.

At page 20, defense counsel argued, we don't pursue testing ourselves. We don't know that we will. We aren't asking to, but we understand why the State wants to pursue that testing.

Going on to page 20, we may well oppose, in the end, the admissibility, the relevance of those test results, but that, again, is something the Court could address with the benefit of knowledge of the test results, presumably, and a chance to look at the type of testing that was done, the protocols, and what the case law may have to say about the admissibility of similar

tests.

Of course, that all came to pass, but the point is that the defense was aware at that time that the State was going to pursue testing. The defense didn't oppose testing from the State, as long as an adjournment was not granted. And even at that point in the proceedings the defendant was not interested in pursuing independent testing.

Based on that history, the Court concludes in this case that the defense motion for sequential independent testing and funding must be denied. The reasons are as follows:

First of all, the Court concludes that the defendant had adequate time in this case to pursue testing if he wished to do so.

The defense was aware of the likely existence of the blood vial many months ago.

The defendant had an adequate opportunity, after the discovery of the suspected existence of the blood vial, to pursue testing.

As pointed out by the defendant, the State could have pursued testing of at least the blood evidence in the vehicle earlier as well.

But the importance of such testing did

not become evident until the defendant disclosed that it was preserved blood in the Manitowoc County Clerk of Court's Office that was specifically the alleged origin of the planting evidence.

There could have been other arguments available to the defendant, for example, we have heard testimony there were traces of the defendant's blood found in his trailer, could have been argued that somehow the State got a hold of that blood or blood from somewhere else that may not have been preserved, that was planted in the RAV4 vehicle.

If the blood that was alleged to have been planted was not preserved blood, the significance of the lack of EDTA would not necessarily have been terribly probative.

Both parties acknowledge that at this stage in the development of EDTA testing, there are not any generally accepted scientific methods for either testing EDTA or interpreting the results. From all the Court has been able to learn at this point, that appears to be due more to the fact that there's not much demand for it than anything else. The Court has not heard any

evidence to suggest that it's more difficult to test for EDTA than a variety of other chemical substances.

Especially under the standards for admission of expert evidence in the State of Wisconsin, had either party decided they wanted to pursue testing earlier, they could have done so with the knowledge that the test results, as long as conducted by a competent lab, probably would have been admissible.

The Court does not find, in this case, that the FBI is the only lab in the country or is somehow uniquely qualified to perform this type of testing. As we heard earlier today, I think the last time it was conducted by the FBI was at the time of the O.J. Simpson trial.

And referring, again, to the January 4 transcript, Mr. Buting pointed out to the Court at that time that their, meaning the FBI's, expert was called at the O.J. trial, actually used by the defense in the O.J. case, and was very helpful to the defense and ultimately very embarrassing to the FBI who was part of whistle blower allegations in the very lengthy investigation that the FBI Lab did of misconduct,

or negligence, or sloppy practices in their lab.

So that's -- The role of the FBI in the O.J. Simpson case didn't exactly establish the FBI as the sole lab in the country that could responsibly test for the presence of EDTA.

Now, there is a case that was cited by the defendant in the brief that the Court does agree is worth examining here. It may be the closest case at least that somehow resembles the facts in this case. That was the case of the ***United States vs. Kelly***, where an appeals court reversed a conviction because the trial court did not allow for a one month continuance of the trial in order to allow for a sequential testing as requested by the defendant.

I'm going to quote from that case briefly setting forth the facts and the ruling of the Court: In June, 1968, the seized drugs -- and it was a drug case -- were sent to Washington for tests, including neutron activation tests which tended to show that the drugs all came from the same original batch.

The government did not inform the defendants of this test. They, the defendants, only became a care of it at the trial, after the

testimony of the prosecutions first witness when the government produced its exhibits. The appellants also contend that the government had a positive duty to disclose the results, or at least the fact that they had taken them. This is especially -- This is so, especially in light of the fact the government had opposed discovery on the grounds that the request was not particular enough and now the government alone had knowledge of the particular tests it had taken.

The course of the government smacks too much of a trial by ambush in violation of the spirit of the rules; a new trial is required with a fair opportunity for the defense to run its own neutron activation tests of the material to determine the atomic similarity or dissimilarity of the trace elements in the samples.

The Court believes there are at least a couple of significant differences between the facts in ***Kelly*** and the facts here. First of all, the State has disclosed its test results immediately upon receipt, to the defense, the State did not have those test results available until after the trial in this case started.

There is no element of trial by ambush

in this case. The Court concludes that the State acted promptly after learning of the existence of the blood vial to seek to have the tests of the blood conducted.

The primary reason for the receipt of the results during the trial as opposed to earlier is because the State did not learn of the existence of the blood vial until months after it was believed to exist by the defense.

The Court also notes that the defense, as I said earlier, could have conducted testing of its own, but did not do so. And as of January 4 of this year, still informed the Court, on the record, it had no plans to do so.

The Court, finally, concludes that the remedies suggested by the defense in this case to allow sequential testing are inadequate. As I suggested earlier, had -- had this matter come up well ahead of the trial, so that the results would have been in before the trial, I may well have ruled differently. I mostly likely would have allowed the defense to pursue sequential testing.

But at this date, the remedies suggested are, first, a continuation of the trial, for an

unspecified period of months. And that simply is not practical. I think, actually, both parties, in their briefs, probably recognize that. First of all, it would be very difficult to prevent the jurors from being exposed to publicity about the case in the meantime.

And even more significant than that, we have heard a great deal of testimony. We're beginning week four of the trial, I'm not sure how the jurors could be expected to have -- could be expected to have a meaningful recollection of the testimony that's been introduced, the evidence that's been received, and use that information to come to a verdict some unspecified period of months from now.

Likewise, the Court believes that there are simply no grounds in this case to declare a mistrial. The primary reason that the defense has not conducted EDTA testing earlier is because the defense chose not to pursue it when there would have been time to do so.

The defense has made the alleged planting of blood a vital part of this case. As defense counsel pointed out at the January 4 hearing, he, meaning Mr. Avery, has been saying

from the beginning, to anybody with a microphone and TV camera, initially as early as November, 2005, that if his blood was in the Toyota, somebody planted it. So there hasn't been any secret about his defense and his view of the facts.

If testing of the blood was determined by the defense to be vitally necessary to that planting defense, which was known from the very beginning, it should have been pursued far earlier than it has been.

The bottom line in this case is that both parties had an opportunity in this case to pursue testing. The Court believes that because of its earlier knowledge of the existence of the blood vial, the State had a slight -- or the defense had a slightly earlier opportunity, at least than the State, but did not pursue the testing. And for that reason a continuation of the trial at this point is not warranted.

Because of the Court's decision denying the motion, it's not necessary for the Court to act on the public funding request from the defense in this case. However, I feel compelled to make a few comments about that request, should

it become relevant at some point.

First of all, if a defendant finds himself in the position of Mr. Avery, that is, let's say the defendant was determined to be indigent, I believe the proper course to follow was set forth by the Court of Appeals in the case of ***Dressler vs. Racine County Circuit Court***, a 1991 Court of Appeals case. And the Court, there, essentially, when a private counsel requested funding for testing on the basis that the defendant was unable to comply with the terms of the retainer agreement and financially unable to either continue to pay the attorney or pay for testing, ruled that the defendant should contact the Public Defender's Office, there's a provision in the Public Defender rules to allow, not only for testing, but also to appoint acting counsel, even in the middle of a case, and be paid by the Public Defender, if the defendant is unable to continue to comply with the terms of any retainer agreement.

The other point I will note relates to the affidavit which was filed with the motion in this case. I did take some time to read that and while I don't have the entire retainer agreement

in front of me, the affidavit notes that the lump some payment that was paid by the defendant, to defense counsel, was accepted as a minimum earned and maximum fee; that is, the fee was going to be the amount for representation in the trial, regardless of the amount of hours earned.

Also significant in the Court's mind is paragraph 7 in which defense counsel indicates, my firm's retainer agreement with Mr. Avery requires the firm to pay expenses including expert witnesses and any other necessary litigation expenses after the amount in our trust account is exhausted.

Now, as I read that, the logical reading to me would be that the retainer agreement may well obligate defense counsel to pay for testing expenses and that the defendant's status at this time as being indigent or not is not terribly relevant because there is a contractual agreement which has already been fulfilled by the defendant which requires defense counsel to pay for testing or expert witnesses. As I say, my ruling doesn't require me to rule on that, so I'm not going to. I only offer that as my observations.

In any event, the Court is going to deny

the defendant's motion for sequential independent testing and funding. I will direct the State to prepare the order, both on that motion and the Court's earlier ruling today.

And I will see the parties tomorrow and the jury will be back here to begin testimony. Anything else before we adjourn today?

ATTORNEY BUTING: Do you want to meet briefly in chambers?

THE COURT: That sounds fine, I will see everybody in chambers in a few minutes.

(Proceedings concluded.)

STATE OF WISCONSIN)
)ss
COUNTY OF MANITOWOC)

I, Diane Tesheneck, Official Court Reporter for Circuit Court Branch 1 and the State of Wisconsin, do hereby certify that I reported the foregoing matter and that the foregoing transcript has been carefully prepared by me with my computerized stenographic notes as taken by me in machine shorthand, and by computer-assisted transcription thereafter transcribed, and that it is a true and correct transcript of the proceedings had in said matter to the best of my knowledge and ability.

Dated this 2nd day of January, 2008.

_____
Diane Tesheneck, RPR
Official Court Reporter