

1 UNITED STATES DISTRICT COURT  
2 SOUTHERN DISTRICT OF INDIANA  
INDIANAPOLIS DIVISION

3 IN RE RECOMBINANT DNA TECHNOLOGY )  
PATENT AND CONTRACT LITIGATION )  
4 ) MDL Docket No. 912  
THE REGENTS OF THE UNIVERSITY OF )  
5 CALIFORNIA )  
6 )  
Plaintiff, )  
7 -vs- ) CAUSE NO. IP 92-224-C D/G  
Indianapolis, Indiana  
8 ELI LILLY AND COMPANY, ) August 25, 1995  
9 Defendant. )

10 Before the

11 HONORABLE S. HUGH DILLIN

12 TRANSCRIPT OF PROCEEDINGS AT TRIAL

13 APPEARANCES:

14 For the Plaintiff: Arthur I. Neustadt  
15 Jean-Paul Lavalleye  
16 Marc R. Labgold  
17 William J. Healey  
18 Amy Levinson  
Kevin Bell  
19 Susan B. Tabler

20 For the Defendant: Donald R. Dunner  
Charles E. Lipsey  
21 Amy E. Hamilton  
John C. Jenkins  
22 Jeffrey Karceski

23 Court Reporter: Patricia A. Cline, CM  
24 Antonette Thompson, RPR-CSR

25 PROCEEDINGS TAKEN BY MACHINE SHORTHAND  
COMPUTER-AIDED TRANSCRIPT

1 (Call to order of the Court at 9:00 a.m.)

2 THE COURT: Good morning.

3 MR. LABGOLD: Good morning.

4 MR. LIPSEY: Good morning, Your Honor. I believe  
5 Mr. Labgold has a correction to the record he'd like to  
6 make before I start, if that's all right.

7 THE COURT: All right.

8 MR. LABGOLD: Thank you, Your Honor. On page 667  
9 of yesterday's transcript we marked Plaintiff's Exhibit 68,  
10 and that was that FDA document that we had a dispute over.  
11 On page 673 we narrowed down the pages. And then on 674  
12 those specific pages were moved in. And I believe your  
13 notes will reflect that it was Plaintiff's Exhibit 68. The  
14 record says Plaintiff's Exhibit 78. We'd like that  
15 correction to the record.

16 THE COURT: All right. The record will so  
17 reflect.

18 MR. LABGOLD: Thank you, Your Honor.

19 MR. LIPSEY: Your Honor, I'd like at this point to  
20 hand up the first volume of exhibits I'd like to use in  
21 cross-examining Dr. Ullrich. Those will be coming  
22 momentarily.

23 CROSS-EXAMINATION (continuing)

24 BY MR. LIPSEY:

25 Q. Good morning, Dr. Ullrich.

1 A. Good morning.

2 Q. Yesterday you told the Court that you learned of the  
3 lack of certification of pBR322 in a meeting in Utah. Do  
4 you remember that?

5 A. I learned about the successful cloning of the -- I  
6 learned about the successful cloning result at the meeting  
7 in Utah.

8 Q. I have the transcript of your testimony here at page  
9 800, and it reads, "Now, you subsequently learned that the  
10 plasmid was not certified?"

11 "Answer. That's right.

12 "Question: How did you come to learn that it was not  
13 certified?

14 "Answer: It was after the conference that -- in Utah  
15 that I attended." And it goes on.

16 A. After the conference.

17 Q. That conference in Utah was in the early days of March  
18 1977; is that right?

19 A. That's correct.

20 Q. Now, in point of fact, you learned about the lack of  
21 certification of pBR322 a month earlier at a meeting on  
22 February 4, 1977; isn't that right?

23 A. I do not recall that.

24 Q. Would you take a look at Defendant's Exhibit 3420,  
25 which you should have before you.

1 THE COURT: Is this in yesterday's group or what?

2 MR. LIPSEY: This should be in the volume that the  
3 Court was just handed. 3420.

4 THE COURT: I'm afraid I don't see it.

5 Q. Dr. Ullrich, is it in your copy?

6 A. I have it, yes.

7 (Discussion off record.)

8 THE COURT: I have it.

9 Q. Do you recognize this as a report submitted by the U.C.  
10 Biosafety Committee of the NIH relating to the pBR322  
11 incident; is that right?

12 A. I don't recognize it, but I see it, yes.

13 Q. You were aware that such a report was submitted at the  
14 time; isn't that right?

15 A. Not that I recall, no.

16 Q. Would you turn to the page with the Bates No. 2871,  
17 please. And do you see there at the bottom of the page  
18 under response 3, the second sentence states, "On or about  
19 February 4, they gathered the personnel from Dr. Goodman's  
20 laboratory (Dr. Goodman on sabbatical in Japan, was not  
21 present) in order to initiate the use of a log book in the  
22 facility and to clarify the status of pBR322 as a vector in  
23 recombinant DNA experiments." Do you see where I've read?

24 A. Yes.

25 Q. Would you turn the page, please, to the Bates No. 2072.

1 The first complete paragraph states, "At this gathering the  
2 investigators in Dr. Goodman's laboratory, including Drs.  
3 Ullrich and Shine, reportedly learned for the first time  
4 that there was some confusion about the status of pBR322;  
5 that its approval had been recommended; but that it had not  
6 yet been certified by the director of NIH." Do you see  
7 where I've read?

8 A. Yes.

9 Q. Does that refresh your recollection that you, in fact,  
10 learned on February 4, 1977 of the lack of certification of  
11 the plasmid pBR322?

12 A. I see it, but I can't say that my recollection now  
13 covers the entire area of 18 years ago.

14 Q. You understood that this matter was investigated by the  
15 University in connection with inquiries made by the NIH  
16 close to the time when these events happened; isn't that  
17 right?

18 A. Yes.

19 Q. And you don't have any reason to quarrel with the  
20 results of that investigation sitting here today, do you?

21 A. I can't answer yes to that. And I don't know all the  
22 details; therefore, I can't give you a blanket answer.

23 Q. You don't have any information today inconsistent with  
24 the conclusion reached by the Biosafety Committee then, do  
25 you?

1 A. No.

2 Q. And in fact, the Biosafety Committee concluded,  
3 starting on the second complete paragraph of 2072, "There  
4 is no satisfactory explanation as to why the investigators  
5 in Dr. Goodman's laboratory continued experiments with  
6 these recombinant plasmids after February 4." Do you see  
7 that?

8 A. Where is that?

9 Q. The first sentence of the second complete paragraph on  
10 page 2072.

11 A. Yes, I see that.

12 Q. Do you recall offering explanations for your continued  
13 use of plasmid pBR322 during that time period to the U.C.  
14 Biosafety Committee in connection with its investigation?

15 A. No.

16 Q. Now, you also said yesterday in your testimony in  
17 relation to the pMB9 experiments, you said, "The yield of  
18 clones was even better than with pBR322." What did you  
19 mean by that?

20 A. I vaguely remember that for some of the fractions that  
21 I used for transformation that there was a very good yield  
22 of clones.

23 Q. What does "a good yield of clones" mean?

24 A. A good yield of clones, more than one.

25 Q. A good number, large number? What does it mean?

1 A. More than ten.

2 Q. In fact, in that experiment a small number of clones  
3 were obtained; isn't that right?

4 A. As I said, there were several fractions that were used  
5 that were isolated out of total cDNA from full length  
6 clones or restricted cDNA, HaeIII-digest cDNA. And I just  
7 vaguely remember that there was a very good yield of  
8 clones. We had very low standards at that time. Today we  
9 would expect millions of clones. At that time we were  
10 happy about more than one.

11 Q. But even by the standards of the day, you obtained a  
12 small number of clones in the pMB9 experiment; isn't that  
13 right?

14 A. Small and large are relative terms, as you know. So at  
15 that time I felt that was -- this is a recollection that I  
16 have -- that I was satisfied with the number of clones that  
17 I obtained.

18 Q. Would you turn to Exhibit 3400, please, which should be  
19 right in front of the one you just looked at. Do you  
20 recognize that as a report by Drs. Goodman and Rutter of  
21 U.C. Biosafety Committee relating to the pBR322 incident?

22 A. I see that's what you're saying it is.

23 Q. And the second page, paragraph 13, relates to the pMB9  
24 experiments; do you see that?

25 A. Second paragraph?

1 Q. Paragraph 13 on the second page. And in that paragraph  
2 it is stated, "A small number of clones were obtained."  
3 You don't have any reason to quarrel with that today, do  
4 you?

5 A. As I said, small and large are relative terms, and I  
6 did not write this document. I don't even recall having  
7 seen it before.

8 Q. You can't imagine that Drs. Goodman and Rutter would  
9 make a report to the U.C. Biosafety Committee and then to  
10 NIH and then to the U.S. Senate without investigating the  
11 matter; you aren't suggesting that, are you?

12 A. I'm telling small and large are not scientific terms.

13 Q. Now, is the reason which you continued to experiment  
14 with the pBR322 clones even after you learned that they  
15 were not certified that you were told to do so by Drs.  
16 Goodman and Rutter?

17 A. I do not recall.

18 Q. Would you turn to Exhibit 3364, please. Do you  
19 recognize that as a document from your files?

20 A. From my files?

21 Q. From your files. It's got an AU number at the bottom.  
22 Do you see that?

23 A. Yes.

24 Q. Do you recognize that as a document that was produced  
25 in this lawsuit from your files?

1 A. I don't recall it. But if you say it came from my  
2 files, I must have seen it before.

3 Q. Well, let's not guess about it. I'd like to hand you  
4 the transcript from your deposition on November 18, 1991.

5 MR. LIPSEY: Would the Court like a copy?

6 THE COURT: No.

7 Q. Would you turn, please, to page 195. Do you see there  
8 that this document which we've marked as Exhibit 3364 was  
9 marked there as an exhibit?

10 A. 195?

11 Q. Starting on page 195, at line 21, do you see there that  
12 the numbers on the documents we're talking about there are  
13 the same ones you have in front of you, right?

14 A. AU00030002?

15 Q. Yes.

16 A. Is that the same one?

17 Q. It is, isn't it?

18 A. I don't know.

19 Q. Well, the record will show that it is. And I asked you  
20 there whether that was from your files, and you said you  
21 weren't sure. And then starting at line 14, I said, "Okay.  
22 Counsel --" referring to your counsel -- "I assume you'll  
23 agree that this document was retrieved from Dr. Ullrich's  
24 files?" And Dr. Lavalleye, counsel for U.C., said, "Yes,  
25 we believe so." Does that refresh your recollection that

1 this was --

2 A. And I said just before that in confirmation of what I'm  
3 saying here. "To be honest, I can't confirm it because I  
4 did not look at these documents for years and years. And I  
5 just don't have a photographic memory. I apologize about  
6 that."

7 Q. Now, this document as it existed in your files had a  
8 handwritten notation on the top which is legible on the  
9 copy. Do you remember going through that in your  
10 deposition?

11 A. No, I don't.

12 Q. Referring to your deposition, page 196, did you give  
13 the following answer to the following question: "Now,  
14 Dr. Ullrich, can you read into the record the faint  
15 handwriting at the top of original document as it existed  
16 in your file?"

17 "Answer: It says something, mailed 3-25-77 registered,  
18 copy mail 3-25-77." Did you give that answer to that  
19 question?

20 A. That's what I must have read, yes.

21 Q. And the document that we have here as Exhibit 3364 is a  
22 memorandum relating to the pBR322 incident; is that  
23 correct?

24 A. Yes.

25 Q. And on the second page under matters of judgment, one

1 of the options being considered under number 3 is to keep  
2 the clone DNA since the experiments had already been  
3 performed and await certification before continued  
4 experiments. Do you see that?

5 A. Yes. And you also see that this was a document written  
6 by Drs. Goodman and Rutter and not by myself.

7 Q. And on the third page the conclusion is stated, "Thus,  
8 we elected 3 -- which was that option to keep the DNA -- we  
9 believe that further sequencing of the DNA clones was  
10 acceptable since the hypothetical danger, if any, is not  
11 with the DNA itself." Do you see where I've read?

12 A. Could you repeat that and tell me where you read it?

13 Q. The very last paragraph of the document.

14 A. Yes.

15 Q. Does that refresh your recollection that you were, in  
16 fact, instructed by Drs. Goodman and Rutter to continue to  
17 work with the DNA even after you learned it was not  
18 certified?

19 A. I wouldn't use the word "instructed."

20 Q. Would you turn to Defendant's Exhibit --

21 THE COURT: Wait just a minute. What word would  
22 you use?

23 THE WITNESS: It was probably the result of a  
24 discussion and an agreement among more than Drs. Howard  
25 Goodman and Rutter.

1 MR. LABGOLD: Objection. Your Honor, this witness  
2 testified yesterday that he was not the person involved in  
3 the sequencing experiments at any rate. So I don't believe  
4 that it's proper for Mr. Lipsey to be questioning him about  
5 that time.

6 MR. LIPSEY: I think that's an objection to the  
7 form of the answer rather than to the form of the question,  
8 Your Honor.

9 THE COURT: Well, I'll overrule the objection.  
10 Q. Would you turn, please, in the book to Defendant's  
11 Exhibit 3339.

12 A. Yes, I have it.

13 Q. Do you recognize that as notes of recombinant DNA  
14 experimentation predominantly in your handwriting; is that  
15 correct?

16 A. This first page is very poorly copied. I see traces of  
17 writing that could be my handwriting.

18 Q. To try to save some time, Dr. Ullrich, I'm going to  
19 give you Volume 1 of your deposition transcript.

20 A. On the next page it looks better, yes.

21 Q. We went through this notebook in some detail in your  
22 deposition; isn't that right?

23 A. Yes.

24 Q. Okay. Would you turn to page 49 of your November 17,  
25 1991 transcript, please. Starting at line 2, did you give

1 the following answer to the following question: "Question:  
2 Okay. So are you satisfied that the pages in Defendant's  
3 Deposition Exhibit 93 -- which is the notebook you have  
4 before you -- are predominantly in your handwriting?"

5 "Answer: Yes."

6 Did you give that answer?

7 A. Is that on page 39 or 49?

8 Q. I believe it's on page 49.

9 A. Oh, sorry. Yes, I see that.

10 Q. And in this notebook which we have here as  
11 Exhibit 3339, you used the European style of dating where  
12 you listed the day first and then the month and then the  
13 year; is that correct?

14 A. I can't read it; therefore, I can't confirm it.

15 Q. We went through it in your deposition, do you remember?  
16 If you'll take a look at page 49 of your November 17  
17 transcript, did you give the following answers to the  
18 following questions, proceeding over onto page 50:

19 "Question: Dr. Ullrich, I noted on some of the pages  
20 in Exhibit 93 there are some dates written at the top in  
21 your handwriting. I would pick, for example, the page  
22 bearing the last three digits of the Bates No. 411 which  
23 has the notation 26, 11, 76; do you see that?

24 "Answer: I see that.

25 "Question: Okay. By your convention does that

1 designate November 26, 1976?

2 "Answer: It must. There is no month 26. There are no  
3 26 months in the year.

4 "Question: Okay. And that is indeed the European  
5 convention for giving dates, giving the day first and then  
6 the month; is that correct?

7 "Answer: That's correct."

8 Did you give those answers?

9 A. Yes.

10 Q. Do you recall that in our review of the document, the  
11 latest date we found in this notebook was February 14,  
12 1977?

13 A. Could you repeat the question?

14 Q. Do you recall that when we went through the notebook in  
15 your deposition, the latest date we found recorded in it  
16 was February 14, 1977?

17 A. I don't recall this fact.

18 Q. Will you take a look at your deposition at page 52 --  
19 I'm sorry, page 51. Starting at line 21 and extending over  
20 onto the next page, did you give the following answer to  
21 the following question:

22 "Question: Dr. Ullrich, were you able to determine  
23 what the latest date you could read in Defendant's  
24 Deposition Exhibit 893 was?" And that's the notebook we're  
25 looking at.

1 "Answer: I believe it was 14th of February, 1977."

2 Did you give that answer to that question?

3 A. Yes.

4 Q. Do you recall that based on our review of the notebook  
5 in your deposition, we determined that the work was  
6 concentrated in January and February of 1977?

7 A. If you say so. I'm sure you can tell me that would be  
8 established in the deposition.

9 Q. Let's not guess. Could you turn to page 130 of the  
10 deposition transcript, please. Did you give the following  
11 answer to the following question starting at line 17:

12 "Well let's get at it this way: The experiments we've seen  
13 reported in Defendant's Exhibit 93 seem to be concentrated  
14 in January and early February of 1977; is that a fair  
15 characterization?

16 "Answer: That is fair."

17 Did you give that answer at that time?

18 A. I see that part of the transcript, yes.

19 Q. And because the pMB9 experiments did not begin until  
20 April 23, 1977, we concluded that the experimentation  
21 described in this notebook, Exhibit 3339, was, in fact, the  
22 pBR322 experiment; is that correct?

23 A. I assume that's correct.

24 Q. Well, let's not guess at that either. Would you turn  
25 to page 128 of your deposition, please. Starting there at

1 line 5, did you give the following answer to the following  
2 question: "Now, if, for starters, I have been through  
3 Exhibit 93 -- which is this notebook -- a number of times,  
4 believe it or not in even greater length than we went  
5 through it with you, and I did not see anything in Exhibit  
6 93 that looked like anything other than pBR322 cloning  
7 experiments; you agree with that, that's all that's  
8 described in the pages which we have as Exhibit 93?

9 "Answer: Yes."

10 Did you give that answer?

11 A. Yes.

12 Q. Now, in the pBR322 cloning experiments you identified  
13 five clones that you believed potentially had rat insulin  
14 DNA inserts in them; is that right?

15 A. No, I did not. As Dr. Labgold said, I was not involved  
16 in the actual identification, the sequencing which is the  
17 ultimate identification.

18 Q. But you did a special test where you took your pBR322  
19 clones and you saw whether your rat DNA would stick to  
20 them, and those were the rat DNA stuck to them and gave a  
21 signal above background you thought probably had rat  
22 insulin DNA in them; isn't that right?

23 A. I did that with the one large clone, if I remember  
24 correctly, the one that was obtained in the full length  
25 cloning where I obtained only one real positive.

1 Q. Would you turn to Exhibit 3340, please, which is in  
2 your notebook. It should be right behind the one that  
3 you've got. Do you remember at your deposition we spent a  
4 lot of time figuring out what this experiment meant in your  
5 notebook. And it's all in your deposition testimony. Do  
6 you remember that?

7 A. I do not remember that we did, but I'm sure you're  
8 right.

9 Q. Let's try to shortcut it. This is an experiment here.  
10 These are pages from your laboratory notebook describing  
11 the hybridization of radioactively labeled rat islet cDNA  
12 to your pBR322 clones; isn't that right?

13 A. Yes.

14 Q. And the second page of the exhibit has the results of  
15 that experiment, doesn't it?

16 A. Yes.

17 Q. And reading up from the bottom of the page, the first  
18 and the far right-hand column is your indication of what  
19 the signal was above the background, right?

20 A. Yes.

21 Q. And clones that gave a signal above the background in  
22 that experiment were deemed by you to have given a positive  
23 result in that experiment at the time; is that right?

24 A. Depends how much over background, I would assume, just  
25 retrospectively.

1 Q. Reading up from the bottom of the page the first  
2 item -- the first entry that has a reading above  
3 background, a positive reading 6.0, that you've identified  
4 with the clone number 1/13. Do you see that?

5 A. Well, there is this number there, yes.

6 Q. And the next one that has a positive binding above  
7 background 8.4, you identified that as clone 1/13 also,  
8 right?

9 A. So we have two clones 1/13.

10 Q. No, you used clone 1/13 twice in this experiment,  
11 didn't you, and got a positive binding both times?

12 A. I can't really say for sure.

13 Q. Well, we can deal with that in a minute, if you'd like.

14 Moving up the column, the next one that you have a  
15 positive result for, 12.4, you identified that with the  
16 clone number 3/10, right?

17 A. Yes, it looks like it.

18 Q. And the next one up that you got a positive result for,  
19 2.4, you identified that with the clone number 3/9, right?

20 A. Yes.

21 Q. And then you got two more positive results further up  
22 the page, 13.4 and 14.4; do you see that?

23 A. And 5.2 and 5.5.

24 Q. Right. And if you look back on the first page, which  
25 is the experimental setup for the experiment, you'll see

1 that those other two results, positive results, are for  
2 something you called 182 and 905, 9-0-5, right?

3 A. That's correct.

4 MR. LIPSEY: Your Honor, we went through the  
5 analysis of the experiment in some detail in Dr. Ullrich's  
6 deposition. I do not want to burden the Court with doing  
7 it. I have marked as Defendant's Exhibit 3736 the excerpt  
8 from Dr. Ullrich's testimony where that was done, which I  
9 would like to offer into evidence to complete the record.

10 MR. LABGOLD: No objection.

11 THE COURT: It will be received.

12 (Defendant's Exhibit(s) 3736 received in evidence.)

13 MR. LIPSEY: I would also like to offer into  
14 evidence Exhibits -- Defendant's Exhibit 3339 and 3340  
15 which are the experiments we just discussed.

16 MR. LABGOLD: No objection.

17 THE COURT: They will each be received. How about  
18 the first three that you mentioned today, which were 3420,  
19 3400 and 3364?

20 MR. LIPSEY: I believe the first two are already  
21 in evidence. I would offer Exhibit 3364 in evidence at  
22 this time also.

23 THE COURT: It will be received.

24 (Defendant's Exhibit(s) 3339, 3340, 3364 received in  
25 evidence.)

1 THE COURT: By the way, in the future, when you're  
2 referring to an exhibit which is already in evidence, would  
3 you please say, Now I'm referring to an exhibit already in  
4 evidence, because it saves a lot of bookkeeping.

5 MR. LIPSEY: I apologize.

6 Q. Dr. Ullrich, would you turn to Exhibit 3341, please.  
7 This is another experiment that was contained in the pBR322  
8 notebook which we discussed at some length in your  
9 deposition. Do you remember going through that?

10 A. Vaguely.

11 MR. LIPSEY: Your Honor, I would like not to  
12 burden the record with that. I would like to offer into  
13 evidence at this time Defendant's Exhibit 3341 and the  
14 associated deposition testimony where that was explained,  
15 which is Defendant's Exhibit 3737.

16 MR. LABGOLD: No objection.

17 THE COURT: All right. Defendant's Exhibit 3341  
18 and 33 -- what was the other -- 3737 are each received in  
19 evidence.

20 (Defendant's Exhibit(s) 3341, 3737 received in  
21 evidence.)

22 THE COURT: Defendant's Exhibit 3737 must contain  
23 a lot of pages. Are there some pages in particular you're  
24 talking about?

25 MR. LIPSEY: It includes pages 86 through 94 and

1 126 through 128. And it is of interest primarily for  
2 establishing the technical accuracy of the conclusions  
3 which have already been brought out in the testimony. It  
4 may be unnecessary for the Court actually to go into it.  
5 It's in there to complete the record.

6 THE COURT: All right.

7 Q. Would you turn, please, to Defendant's Exhibit 3354,  
8 please.

9 A. Yes.

10 Q. Do you recognize that as a copy of Howard Goodman's  
11 insulin experiment file that we went through -- a different  
12 copy of which we went through in your deposition; do you  
13 remember going through that?

14 A. I recognize his handwriting.

15 Q. Now, just for the record, this particular copy is a  
16 better copy that was produced from the original at a later  
17 deposition; and therefore, it does not have the original  
18 Bates numbers on it. We have endeavored to type the Bates  
19 numbers onto the pages as they appeared from the previously  
20 produced document. This document, as it was photocopied  
21 later at the deposition of Dr. Goodman, is not in exactly  
22 the same order as the previously produced document. And  
23 for that reason the Bates numbers are not necessarily  
24 sequential.

25 MR. LABGOLD: We have an objection. This is not

1 the way the document was produced to us prior to trial. Is  
2 this document -- and why isn't it in the original order  
3 that the document was produced at his deposition?

4 MR. LIPSEY: My understanding is what we tried to  
5 do is identify Bates numbers for the pages based on the  
6 previous produced document, and to keep the document in the  
7 order that we have it in our file from the deposition. I  
8 think that the order of the documents is not horribly  
9 important. If you've got a problem with it, I would be  
10 happy to rearrange it. But I'm not sure we need to take  
11 the time of the Court to do that.

12 MR. LABGOLD: We can discuss that, but I would  
13 like to know why the document wasn't kept in the original  
14 order in the case.

15 MR. LIPSEY: We believe that it had been kept in  
16 it's original order. There's some confusion about that. I  
17 don't think it's material.

18 Q. Dr. Ullrich, returning to the seventh page of the  
19 document that bears the typed Bates No. 2067, that's in  
20 your handwriting, isn't it?

21 A. Partly.

22 Q. And your handwriting appears on the next page also,  
23 correct?

24 A. Yes. A couple of references, yes.

25 Q. And it appears in part on the next page of the exhibit

1 also, correct?

2 A. A couple of corrections, yes.

3 Q. And also on the next page which has the typed number  
4 2070 on it; is that right?

5 A. Again, a few corrections or fill-ins.

6 Q. If you go six pages further in the document, you come  
7 to a page with the typed number at the bottom 2075. Do you  
8 have that?

9 A. Yes.

10 Q. The heading on that page is Summary of Insulin Clones,  
11 right?

12 A. Summary of Insulin Clones, yes.

13 Q. And we see there clones 1/13, 3/9 and 3/10. Those are  
14 pBR322 clone numbers, aren't they?

15 A. Three of them match with the numbers that we had seen  
16 before on the hybridization experiment.

17 Q. And the diagram appearing on this page is one which  
18 would convey to somebody who understood this technology  
19 where those pieces of DNA started and stopped; isn't that  
20 right?

21 A. This could be said, yes.

22 Q. And the information here indicates that clone 1/13  
23 starts and stops in the same place as what was called pAU1  
24 in your ultimately published Science article; isn't that  
25 right?

1 A. I can't really confirm that right here.

2 Q. It indicates that that piece of DNA has a poly-A tract  
3 at the end of approximately 100 nucleotides, doesn't it?

4 A. Approximate -- this is the handwriting of Dr. Goodman,  
5 and it says poly-A, approximately 100.

6 Q. And pAU1 in your published Science article had a DNA  
7 insert with a poly-A tract of approximately 100  
8 nucleotides; isn't that right?

9 A. That is correct.

10 Q. Would you turn four pages in the document, keeping your  
11 hands on that page because we're going to be coming back to  
12 it, go four pages forward with the page number 2079.

13 A. Yes, I have it.

14 Q. And clone 1/13 is listed at the top of that page too,  
15 isn't it?

16 A. Yes.

17 Q. And the DNA sequence information given there shows that  
18 that clone begins with the nucleotide sequence CAAA; do you  
19 see that?

20 A. TTGG and then CAAA, yes.

21 Q. And the TTGG is the remnant of the linker that was on  
22 there in order to clone the DNA; isn't that right?

23 A. That might be.

24 Q. And so that piece of DNA started with the rat DNA  
25 sequence CAAA and continued on, right?

1 A. That's what it says here.

2 Q. And that's exactly where pAU1 in your published Science  
3 article starts; isn't it?

4 A. I haven't memorized it, but if you say so.

5 Q. Well, let's not guess at it. Defendant's  
6 Exhibit 3179 -- which has already been introduced into  
7 evidence as Plaintiff's Exhibit 98, I believe, Your  
8 Honor -- that's your Science article, right?

9 A. Yes.

10 Q. And that, you said, describes the pMB9 results, right?

11 A. Yes.

12 Q. And when you look at figure 7 on page 1317, that's the  
13 data that you said was from the pMB9 experiment, right?

14 A. This is work that was done by John Shine, as you know,  
15 so I have to rely on what he said. And I don't recall what  
16 he said about this data, so I did not make any statements  
17 about that.

18 Q. You're a co-author on this paper, aren't you,  
19 Dr. Ullrich?

20 A. Nevertheless, the work was divided up. And John Shine  
21 did the sequencing; and therefore, all the results relating  
22 to the sequencing came from John Shine. I did not go and  
23 investigate his results by looking at the primary data.

24 Q. But as indicated here, the insert, the rat DNA insert  
25 in pAU1 starts CAAA, exactly the way clone 1/13 from the

1 pBR322 experiment did; isn't that right?

2 A. And that's what it says, yes.

3 Q. Going back to Exhibit 3354, which is the insulin  
4 experiment file, and to page 2075, which is the summary of  
5 the insulin clones, clone 3/9 there is described as  
6 starting in the same place and ending in the same place as  
7 the piece of DNA you called pAU2 in the Science article;  
8 isn't that right?

9 A. It's a HaeIII fragment; and therefore, it should begin  
10 and end at the same place.

11 Q. And it is correct that because of the way you did that  
12 experiment, one of the tests -- one of the experiments you  
13 did was to chop up the DNA with this enzyme, and presumably  
14 you get many, many pieces that had the same lengths of DNA  
15 from one place where the enzyme cuts to another; because of  
16 the way you did that, you might expect to get that piece of  
17 DNA several times; isn't that right?

18 A. I should specify that the total cDNA was digested with  
19 that enzyme, and then it was run in a preparative  
20 acrylamide gel. And then the band corresponding to the  
21 size, to the expected size that was established before in  
22 analytical experiments, was excised and the DNA was eluted,  
23 E-L-U-T-E-D. This band would also contain other fragments  
24 that were of the same size but were not cut by HaeIII on  
25 either end or on the 5' end.

1 Q. And that's exactly what we have for clone 3/10 on  
2 page 2075 of Defendant's Exhibit 3354; is that right?

3 A. That's right.

4 Q. And that clone is there described as starting in the  
5 same place and ending in the same place as the piece of DNA  
6 you called pAU3 in your Science article; isn't that right?

7 A. That's what it appears to be, yes.

8 Q. And in fact, this piece of DNA didn't have a poly-A  
9 tail of about 20 nucleotides as indicated in the drawing  
10 here; it had a poly-A tail of exactly 20 nucleotides,  
11 didn't it?

12 A. I don't recall that.

13 Q. Would you turn to the page in this exhibit with the  
14 Bates No. 2092, which moving backward -- or actually  
15 towards the end of the exhibit from the Summary of Insulin  
16 Clones pages is -- it's 14 pages back. Do you have that  
17 before you?

18 A. Yes.

19 Q. And there again, the data on that page is identified  
20 with reference to the pBR322 clone number 3-10; do you see  
21 that?

22 A. Yes, I see that.

23 Q. And written right below that is T20 exactly, right?

24 A. That's in Howard Goodman's handwriting.

25 Q. And that's the length of the poly-A tract on the end of

1 that piece of cDNA; isn't that right?

2 A. That's what he wrote down. As I said, I did not see  
3 the primary data.

4 Q. And in the Science article, which is at tab 3179, the  
5 piece of DNA said to be in pAU3 is described there as  
6 having exactly 20 Ts at the end, just like clone 3-10,  
7 right?

8 A. That is a result of Howard Goodman's and John Shine's  
9 assessment, yes.

10 Q. But that's what the ultimate article said, right?

11 A. That's what the manuscript says.

12 Q. I'll put it to you, Dr. Ullrich, that the plasmid  
13 inserts in pAU1, 2 and 3 and 4 are, in fact, from the  
14 pBR322 experiment; isn't that right?

15 A. I cannot confirm that and for reasons that I have  
16 mentioned already several times.

17 Q. Before we leave Exhibit 3554, if you would turn,  
18 please, to the 12th page of the exhibit which should have  
19 the Bates --

20 A. I'm sorry, what is the number?

21 Q. The number is 2071 at the bottom. It's 12 pages in  
22 from the front.

23 A. Yes.

24 Q. This is still in that folder where we've got all of  
25 those pBR322 clone numbers mentioned, right?

1 A. Yes.

2 Q. And right there is listed pAU4 and sequence information  
3 is given for pAU4; is that right?

4 A. That's what one could conclude.

5 Q. And the sequence information given for the beginning of  
6 pAU4 is exactly the same as the sequence information given  
7 for the beginning of pAU4 in the Science article; isn't  
8 that right?

9 A. I have not had the chance to compare them.

10 Q. Well, before -- while we're still in the insulin  
11 experiment folder, do you recognize the first seven  
12 nucleotides on the top line? That's the linker again,  
13 isn't it? I think you're in the wrong book there.

14 A. Here? 71?

15 Q. Yes, page 71.

16 A. AGC, TTGGG.

17 Q. Everything but that last G is the linker, right?

18 A. Yes.

19 Q. So this sequence starts GCAG, right?

20 A. That's correct.

21 Q. And the pAU4 in the Science article also begins GCAG,  
22 right?

23 A. Matches that sequence.

24 Q. Would you turn to Defendant's Exhibit --

25 MR. LIPSEY: Your Honor, I will offer, if I

1 haven't done it already, Exhibit 3554 into evidence.

2 MR. LABGOLD: Your Honor, I would object to that  
3 at this time until we can confirm that the document is the  
4 actual document.

5 MR. LIPSEY: I thought the dispute was over the  
6 order of the pages and not over the --

7 THE WITNESS: 3554?

8 THE COURT: You're saying 3554. Do you mean 3354,  
9 by any chance?

10 MR. LIPSEY: That's exactly what I mean. Thank  
11 you, Your Honor.

12 MR. LABGOLD: We would like the opportunity to  
13 confirm that Mr. Lipsey has represented that the order of  
14 documents are changed, we would like the opportunity to  
15 confirm whether this is, in fact, the original document  
16 itself before it's received into evidence.

17 MR. LIPSEY: It seems, Your Honor, we can always  
18 rearrange the pages to comport with reality without  
19 delaying its introduction into evidence.

20 THE COURT: Well, I'm going to receive the exhibit  
21 in evidence. And if you later want to change it, we can  
22 change it. I've been able to follow it quite easily.

23 (Defendant's Exhibit(s) 3354 received in evidence.)

24 Q. Would you turn, please, to Defendant's Exhibit 3381.

25 Do you recognize that as being in the handwriting of Howard

1 Goodman?

2 A. Yes.

3 Q. And do you recognize that as headed Insulin DNAs?

4 A. That is correct. Yes.

5 Q. And do you see there a concordance drawn in the first  
6 line between the plasmid pAU1 and the pBR322 clone number  
7 1/13; do you see that?

8 A. Yes.

9 Q. And in the second line there is a concordance drawn  
10 between the plasmid pAU2 and pBR322 clone number 3/9; do  
11 you see that?

12 A. Yes.

13 Q. And in the third line there is a concordance drawn  
14 between plasmid pAU3 and pBR322, clone number 3/10; do you  
15 see that?

16 A. I see that, yes.

17 Q. Does that refresh your recollection that the inserts in  
18 the pAU1 through 4 in the Science article are, in fact, the  
19 pBR322 inserts?

20 A. I cannot confirm that. They correspond by their  
21 features to these clones. But there is no proof that they  
22 are identical, that they are the same clones.

23 Q. My question was whether that refreshed your  
24 recollection. I gather it did not.

25 A. It corresponded, as you have established, corresponded

1 in their characteristics to previously isolated clones.

2 And as we know, and we have talked about that position --

3 Q. Dr. Ullrich --

4 A. -- we have spoke about that --

5 THE COURT: One at a time, please. Let him finish  
6 his answer.

7 A. We have spoken about this issue at length in my  
8 deposition, and I have tried to explain to you that happens  
9 very frequently, especially with cDNA preparation as good  
10 and well defined as the one that I used here, that one  
11 could obtain clones that have similar stops or the same  
12 stops, so they have the same features as others.

13 So it's not necessarily so that these clones are  
14 identical with those; the AU1 clones with the AU1/13 clone.  
15 There is no proof of that. And as I told you, the  
16 identification of the clones in the pMB9 experiments was  
17 taken over because of the situation that we were really  
18 trying to move forward very quickly, mostly by Howard and  
19 John, the coordination. John was doing the sequencing and  
20 isolation and characterization of the clones. So you will  
21 have to refer to his testimony.

22 Q. When you say "John," you mean John Shine?

23 A. John Shine, yes.

24 MR. LIPSEY: Your Honor, I'd like to offer  
25 Defendant's Exhibit 3381 into evidence.

1 MR. LIPSEY: Yes. It's the Bates number ending  
2 2471.

3 A. Yes, that is my handwriting.

4 Q. And that purports to describe a rat insulin DNA  
5 experiment with the plasmid pCR1; is that correct?

6 A. That's what it says, yes.

7 Q. And the plasmid pCR1 had been certified for use at all  
8 times relevant to your work cloning insulin cDNA; is that  
9 right?

10 A. That's what I recall, yes.

11 Q. And the date on this entry is February 1, 1977; is that  
12 right?

13 A. That is right.

14 Q. Now, in point of fact, that entry was made not on  
15 February 1 but on March 11, 1977; is that right?

16 A. I do not recall that.

17 Q. Would you take a look at Defendant's Exhibit 3420,  
18 please, which is the report to the NIH on the pBR322  
19 incident.

20 A. I'm sorry, which number?

21 Q. 3420.

22 MR. LIPSEY: Already in evidence, Your Honor.

23 Q. On page 3 of the report with the Bates number ending in  
24 the digit 72, you'll see that a question has been asked of  
25 U.C. relating to the log book. That's question 4. Do you

1 see that?

2 A. Response 4?

3 Q. The question relates to the log book, question 4. Do  
4 you see that?

5 A. Yes.

6 Q. And then response 4 continues over onto the next page.  
7 If you turn to the next page with the Bates number ending  
8 73, about halfway down in that paragraph it is stated: "In  
9 fact, no entry was made in the log book until March 11,  
10 1977. On this date the retroactive entry for an insulin  
11 cloning experiment involving plasmid pCR1 was made. These  
12 experiments were initiated prior to the institution of the  
13 log book; i.e., sometime in January.

14 "There is no explanation why this entry was not made on  
15 February 4. No request was made or approved to enter an  
16 insulin cloning experiment using pBR322." You don't have  
17 any reason to quarrel with any of that, do you?

18 A. No. But the way it looks is that this time was a very  
19 uncertain time, and especially with regard to the notebook  
20 which was established around that time. We used to keep  
21 notes for these experiments in our notebooks. And as you  
22 can see, the first entry in this log book is February 4 and  
23 then mine comes February 1. And obviously I would not be  
24 that dumb to not notice that if I wanted to do something  
25 improper. I just entered, you know, transferred an entry

1 from my notebook into the now established log book of the  
2 P3 facility. That's what I would reconstruct the situation  
3 as.

4 Q. Well, I asked you at your deposition to go through your  
5 notebook, which we have gone through this morning as  
6 Defendant's Exhibit 3339, and you were unable to find in  
7 there any entry for a pCR1 rat insulin cloning experiment;  
8 is that correct?

9 A. I do not recall that, but if you say so, and you also  
10 recall that this notebook was not a hardbound notebook,  
11 that there were probably -- you know, after all this time  
12 it was not complete or parts were copied and retrieved from  
13 Howard Goodman's files.

14 Q. Would you turn to the tab you have in your book,  
15 Defendant's Exhibit 3742, which are some excerpts from your  
16 deposition.

17 A. 3742?

18 Q. It should be at the very back of the book or close to  
19 the back of the book.

20 A. I don't find that. I'm sorry.

21 MR. LIPSEY: I see it coming up again. I will  
22 hand out copies of Defendant's Exhibit 3742. Do you have  
23 it, Your Honor?

24 THE COURT: I have it.

25 Q. Dr. Ullrich, in case it's not in yours, here's a copy.

1       These are excerpts from your deposition from November 18,  
2       1991.  And on page 243, starting at line 19, I asked you:  
3       "I'm going to ask you to do this:  At the lunch break today  
4       will you flip through that exhibit and satisfy yourself  
5       that there is no reference to any pCR1 cloning in there?"  
6       And you answered, "Okay.  I'll do that."  Did you give that  
7       answer to that question?

8       A.  Yes.  My answer was, "The fragments of my laboratory  
9       notes that were found in Howard Goodman's files did not  
10      contain any papers that documented any PCR cloning  
11      experiments."  So I said "the fragments," exactly as I'm  
12      saying now.

13      Q.  So that's the answer that you gave at page 383 of the  
14      transcript of your deposition on November 19th, which also  
15      appears in this exhibit; is that right?

16      A.  Yes.

17                 MR. LIPSEY:  I'd like to offer into evidence  
18      Exhibit 3742.

19                 MR. LABGOLD:  No objection.

20                 THE COURT:  It will be received.

21                 (Defendant's Exhibit(s) 3742 received in evidence.)

22      Q.  Now, it is your recollection that you did, in fact,  
23      attempt to do an insulin cloning experiment with pCR1 after  
24      you found out that pBR322 wasn't certified; is that right?

25      A.  Yes.

1 Q. And that experiment that you tried was before the pMB9  
2 cloning which you say underlies the Science article, right?

3 A. That's what I recall, yes.

4 Q. And you recall that that pCR1 experiment failed,  
5 correct?

6 A. That's correct.

7 Q. Now, going back to your original pBR322 experiment, the  
8 various documents we've looked at suggest that started in  
9 early January 1977. Does that comport with your  
10 recollection, just a general time when they started?

11 A. It started at the time when I got the phone call from  
12 Mary Beltech --

13 Q. And it's correct that you had been waiting for  
14 certification of pBR322 in order to start those  
15 experiments?

16 A. That's correct.

17 Q. And is it correct that in February, in January and  
18 early February, as we saw in your notebook, you were doing  
19 pBR322 cloning experiments, correct?

20 A. I don't remember. It was February, I guess.

21 Q. That's what we just established going through your  
22 notebook, remember?

23 A. Yes.

24 Q. Is that right?

25 A. I think so. All these dates, you have worked on this

1 for much longer than I have, so you remember these things  
2 much better than I do.

3 Q. It's clear from the record. And in those pBR322  
4 experiments you were enjoying success in early February  
5 1977; isn't that correct?

6 A. That's right.

7 Q. And you didn't learn according to the records that the  
8 pBR322 was not certified until February 4, 1977, three days  
9 after the date on the entry in this log book; isn't that  
10 right?

11 A. That's what this one document said, but I don't recall  
12 that.

13 Q. So in point of fact, there was no logical reason for  
14 you to be doing a pCR1 cloning experiment on February 1,  
15 1977, was there?

16 A. Why not? I don't understand that question.

17 Q. Isn't it true that the only rat insulin cDNA that was  
18 available at the time of your failed pCR1 cloning  
19 experiment was the DNA from the pBR322 experiment?

20 A. There was plenty of cDNA left, yes.

21 Q. No, I'm talking about -- let me rephrase that. Isn't  
22 it true that the only sequence information about rat  
23 insulin DNA that was available at the time of your failed  
24 pCR1 experiment was from the pBR322 experiment; is that  
25 right?

1 A. As I said, the sequence and the dates are far back in  
2 the past, and I cannot honestly confirm what you're saying.  
3 But there may be a good basis for that, yes.

4 Q. Let's not guess at it. Would you turn in your  
5 deposition of 18 November, 1991, to page 354. Starting at  
6 line 121 and extending onto the next page, did you give the  
7 following answers to the following questions:

8 "Question: Okay. But your -- you told me earlier and  
9 you still believe that the pCR1 experiments were attempted  
10 before the pMB9 experiments, right?

11 "Answer. Yes. Yes.

12 "Question: And you told me earlier and you still  
13 believe that the PCR experiments, no matter how many there  
14 were, failed; is that correct?

15 "Answer: That's correct.

16 "Question: So that the only information which was  
17 available following the failure of all of the PCR  
18 experiments that were attempted relating to cDNA sequence  
19 information for rat insulin was information gleaned from  
20 the pBR322 experiments; is that correct?

21 "Answer: That appears to be that way, yes."

22 Did you give those answers?

23 A. That is correct. But you asked the question  
24 differently and I misunderstood you.

25 Q. Okay. I'm sorry. I didn't mean to. Would you turn to

1 Defendant's Exhibit 3367, please.

2 MR. LIPSEY: Your Honor, if I have not already  
3 offered into evidence Defendant's Exhibit 3346, which was  
4 the log book, I would do so at this time.

5 MR. LABGOLD: No objection.

6 THE COURT: It will be received. How about 3381?

7 MR. LIPSEY: I think we offered it, but I'll offer  
8 it again. Offer 3381.

9 MR. LABGOLD: You already did that. No objection.

10 THE COURT: It will be received.

11 (Defendant's Exhibit(s) 3346, 3381 received in  
12 evidence.)

13 MR. LIPSEY: I fear that the exhibit may not be in  
14 the book. Out of an abundance of caution, I will hand out  
15 copies of DX3367.

16 Q. Dr. Ullrich, we looked at a copy of this in your  
17 deposition also. Do you recall that we found in Howard  
18 Goodman's files a manuscript describing a pCR1 cloning  
19 experiment, which instead of being a failure was reported  
20 successful results?

21 A. I have never seen before the deposition this document  
22 which we described as a draft of the manuscript, not the  
23 manuscript.

24 Q. Well, the fourth page of the document with the Bates  
25 No. 1954 states in the first complete paragraph, "We used

1 the bacterial plasmid pCR1." Do you see that?

2 A. Yes, I see that.

3 Q. And if you flip to the back of the exhibits, you see  
4 DNA sequence information on page 1971, for example, for  
5 pAU1, pAU2, pAU3 and pAU4, right?

6 A. That's correct, yes.

7 Q. And at first glance, without comparing it page by page,  
8 it appears to be in substance identical to the data  
9 ultimately published in Science, right?

10 A. Yes.

11 Q. Do you have any information as to how this manuscript  
12 came to be prepared?

13 A. Not at all. You will have to ask Howard Goodman about  
14 that.

15 MR. LIPSEY: Offer Exhibit 1951 -- I'm sorry, I've  
16 got the wrong page. 3367.

17 MR. LABGOLD: No objection.

18 THE COURT: The exhibit will be received.

19 (Defendant's Exhibit(s) 3367 received in evidence.)

20 Q. Now, when this whole matter came to a head before the  
21 NIH and before the U.S. Senate, you told Drs. Goodman and  
22 Rutter that you had disposed of the pBR322 clones on March  
23 19; is that right?

24 A. I don't know how this date was established, but you  
25 remember my position, we tried to figure out the exact

1 date. But around that time, yes, definitely the plasmids  
2 were destroyed.

3 Q. Would you turn back to Exhibit 3420 already in  
4 evidence. That's the report to the NIH.

5 A. As I told you, I was not the co-author of that  
6 document.

7 Q. Would you turn specifically to page 4 of the report  
8 with the Bates number ending 73, question 5 there is  
9 soliciting information about the destruction the pBR322  
10 clones; do you see that?

11 A. Yes.

12 Q. And the last line of the response 5 states, "Dr.  
13 Ullrich told Drs. Goodman and Rutter that he disposed of  
14 the clones on March 19th." Do you see that?

15 A. I see that.

16 Q. You've got no reason to believe that Drs. Goodman and  
17 Rutter would misrepresent this matter to U.C. Biosafety  
18 Committee, to the NIH and to the U.S. Senate, do you?

19 A. It doesn't have to be a misrepresentation. There are  
20 other possibilities, like an error. But as I said, I  
21 cannot confirm this date. The only thing I know as a fact,  
22 that clones were destroyed.

23 Q. Well, what you know as a fact is that the DNA that was  
24 in your possession was destroyed; is that your testimony?

25 A. That is correct. Yes.

1 Q. And it is true that DNA inserts could have been in the  
2 possession of John Shine who was responsible for sequencing  
3 them; isn't that right?

4 A. That is possible.

5 Q. And you can't state one way or the other what happened  
6 to those inserts, right?

7 A. No.

8 Q. No, you can't?

9 A. I cannot.

10 Q. Isn't it correct, Dr. Ullrich, that you viewed the  
11 success of your career as hinging on the outcome of these  
12 rat insulin experiments?

13 A. I wouldn't phrase it that extremely -- that  
14 exclusively, no. But like every important experiment, for  
15 a scientist every experiment is critical, yes.

16 Q. Do you have your deposition transcript from November  
17 18, 1991, there?

18 A. November 18, 1991?

19 Q. Yes. November 18, starting at page 272, I'm going to  
20 start reading with an answer that you gave because the  
21 answer does not seem, at least to me, to bear much relation  
22 to the question. Starting at line 22 you stated, "I mean,  
23 it was more than glamorous. It was very risky. I could  
24 have ended my career right at that point, as you know,  
25 because if I had not, all that would have developed in a

1 different way.

2 "Question: I've highlighted the sentence in about the  
3 middle of the page.

4 "Answer: Well, you know writers, but I obviously  
5 cannot deny that that was one aspect of it but not the sole  
6 aspect.

7 "Question: Okay. And indeed, another aspect of it was  
8 that you felt that the success of your professional career  
9 hinged on the outcome of that experiment, as you just  
10 indicated; is that right?

11 "Answer: As that point that was certainly a  
12 consideration, I have to admit that, yes."

13 Did you give that testimony at that time?

14 A. Yes, I did. And I said it was a consideration, it was  
15 one consideration. So it was not -- you don't know what  
16 the future brings. But I would have continued to work as a  
17 scientist if this would have not worked.

18 Q. Would you turn to Exhibit 3212.

19 A. Sorry, again?

20 Q. 3212. It should be towards the front of the book.

21 THE COURT: The very front of the book.

22 Q. There was more than glamour and the ending of your  
23 career at stake in this experiment; wasn't there, Dr.  
24 Ullrich?

25 A. I tend to exaggerate sometimes.

1 Q. In fact, there was the opportunity to acquire stock in  
2 Genentech; isn't that right?

3 A. Yes.

4 Q. And we have here as Exhibit 3212 a letter agreement  
5 signed by you with Genentech on April 14, 1977; is that  
6 correct?

7 A. That is correct.

8 Q. And that's your signature on the second page?

9 A. That is correct.

10 Q. And among the provisions of this agreement are the  
11 opportunity to purchase shares of Genentech's stock below  
12 the market value of the stock; is that right?

13 A. No, that's not right.

14 Q. There were opportunities to purchase Genentech stock  
15 with money borrowed from Genentech; isn't that right?

16 A. Maybe. At that time Genentech stock was not traded;  
17 therefore, there was no market value.

18 Q. Oh, okay. I'm sorry. I didn't mean to misrepresent  
19 that.

20 A. It was a fair value at that time.

21 Q. And they were going to lend you the money to buy that,  
22 right?

23 A. That's what it says.

24 Q. And this agreement was contingent upon the delivery as  
25 soon as they are available to Genentech of plasmids

1 containing the entire gene coding for rat insulin. And it  
2 goes on, right?

3 A. Yes.

4 Q. And this agreement was entered into after the discovery  
5 that the original experiment had been done in an  
6 uncertified plasmid and before any attempt to repeat it in  
7 pMB9; is that correct?

8 A. That is correct. And about the same time Eli Lilly was  
9 in negotiations with the University also to acquire these  
10 plasmids.

11 Q. And isn't it true that Eli Lilly learned of this  
12 because Howard Goodman, seven days after learning that the  
13 plasmid had not been certified, called Lilly to tell them  
14 that he had the rat gene and could prove it; isn't that  
15 right?

16 A. I don't know the details about that, but I know that  
17 there were negotiations between Lilly and Howard Goodman.

18 Q. Lilly didn't call Howard Goodman first, did they?

19 A. They couldn't because they didn't know that.

20 Q. And Howard Goodman didn't tell Lilly what plasmid the  
21 work had been done in, did he?

22 A. I really don't know.

23 Q. Dr. Ullrich, if we can refer for a moment to the  
24 Science article already in evidence, a particular copy of  
25 it -- the rat insulin Science article, a particular copy

1 being at tab 3179 in your book. We spoke -- oh, I'm sorry.  
2 It should be right in front.

3 A. Yes, I have it.

4 Q. We spoke earlier this morning about the front end of  
5 pAU4. Do you remember?

6 A. Yes.

7 Q. And we spent a lot of time at your deposition arguing  
8 about the front end of pAU4. And you contended, correct me  
9 if I'm wrong, that you thought that piece of DNA was a  
10 HaeIII restriction fragment that went from a HaeIII  
11 restriction site in the rat 2 DNA to another HaeIII  
12 restriction site in the rat 2 DNA. Do you generally  
13 remember that discussion we had?

14 A. I remember we had an extensive discussion about that,  
15 yes.

16 Q. And do you recall that I showed you in your deposition  
17 a publication that had what the actual DNA sequence was for  
18 the rat 2 DNA from which we could figure out where the  
19 HaeIII site was?

20 A. Not exactly, but I'm sure you will show it to me.

21 Q. Yes, I will. Would you turn in your deposition to --

22 A. The one from November 18th?

23 Q. Just a second and I will tell you. It's page 585,  
24 which I believe is in your November 19th, which you don't  
25 have yet. So I will hand you your transcript from November

1 19.

2 A. There is no 585.

3 Q. Did I do that wrong? Do we have the next one? Just a  
4 second. We'll get the right one.

5 MR. LIPSEY: Would the Court care for a copy?

6 THE COURT: I don't need one.

7 MR. LIPSEY: I apologize, Dr. Ullrich. It's  
8 Volume 4 from February 3, 1992.

9 THE COURT: Page what?

10 MR. LIPSEY: Page 584.

11 Q. You see there right at the bottom of the page starting  
12 at line 19 -- I'm not going to read this, I'm trying to  
13 refresh your recollection -- you had an opportunity to read  
14 this Science article that we had and figure out what the  
15 missing DNA was. And you testified down at line 14 of  
16 page 585 that had the plasmid DNA pAU4 been a HaeIII  
17 fragment, it would have had the extra nucleotides GCCC  
18 moving towards the 5' end in addition to what was reported  
19 there; is that right?

20 A. I cannot really -- I mean, HaeIII is GCCC, so this  
21 could have been a HHA1 site which could be a contamination.  
22 I don't remember.

23 Q. Let's me get at it this way: At page 584 and 585 of  
24 your deposition did you give the following answers to the  
25 following questions:

1           "Question: Okay. Dr. Ullrich, in our discussions off  
2 the record were you able to satisfy yourself as to what the  
3 six nucleotides preceding the beginning of pAU4 would have  
4 been had the plasmid been longer?

5           "Answer: Well, I cannot answer the question like that.  
6 I can only refer to what is written down. And I can't  
7 confirm that the plasmid does not contain these sequences.

8           "Question: Okay.

9           "Answer. It rather means what I believe is that these  
10 sequences were not always reflecting exactly what the --  
11 what the plasmid contained. And I explained to you last  
12 time that the sequencing method, the Maxam and Gilbert  
13 sequencing method, makes it sometimes very difficult to  
14 read the first nucleotides. And the sequence that is  
15 missing that is not written down in our figure 7 of the  
16 Science paper is GCCC.

17           "Question: That's reading backwards?

18           "Answer: Reading backwards towards the 5' end and then  
19 the next two nucleotides would have been GG and that would  
20 make a HaeIII site, which confirms my interpretation of our  
21 last deposition."

22           Did you give those answers to those questions?

23           A. I assume the reporter was correct, yes.

24           Q. I'd like to show a demonstrative exhibit, Defendant's  
25 Exhibit 4067. And is it correct that what we have listed

1 on the top line of data is what is actually reported in  
2 your Science article as the sequence for pAU4 with the  
3 HindIII linker remnant attached to it?

4 A. Yes.

5 Q. And is it correct that what we have on the second line  
6 under "Expected" is what would have been in that piece of  
7 DNA had it been a HaeIII fragment with the remnant of the  
8 HindIII linker attached?

9 A. That was my speculation at the time of the deposition,  
10 yes.

11 MR. LIPSEY: Offer into evidence DX4067.

12 MR. LABGOLD: No objection.

13 THE COURT: I'll receive it in evidence provided  
14 somebody will tell me what HindIII is and also a HaeIII.

15 MR. LIPSEY: Let me address that right now.

16 Q. In order to make recombinant DNA of the sort described  
17 in your rat insulin publication, you have to be able to cut  
18 the plasmid open and insert the DNA into it; is that right?

19 A. You have to cut it open at a specific position, yes.

20 Q. And there were available at the time special enzymes  
21 called restriction enzymes which would cut DNA at specified  
22 DNA sequences; is that right?

23 A. That is correct.

24 Q. And one of those was called, for reasons which have  
25 been lost on every lawyer in this case, HindIII, H-I-N-D

1 III; is that right?

2 A. That is right, yes. It comes from Haemophilus  
3 influenzae. It's the name of the microorganisms that  
4 contain these enzymes which were used to extract them and  
5 purify them.

6 Q. And the particular DNA sequence recognized by the  
7 restriction enzyme HindIII is depicted in figure 1 of your  
8 Science article, which is at tab DX3179; is that right?

9 A. That is right.

10 Q. And a different one of these restriction enzymes which  
11 cuts DNA at a different sequence of bases is called HaeIII,  
12 H-A-E III; is that right?

13 A. That is right.

14 Q. And do you recall offhand what the pattern of bases is  
15 that's recognized by HaeIII?

16 A. GGCC.

17 Q. And where does that enzyme cut in that sequence?

18 A. Between the G and the C.

19 Q. And I gather, to explain the protocol of your  
20 experiment, you did two experiments, two types of  
21 experiments with the rat DNA, right?

22 A. That's correct.

23 Q. One where you took the total rat DNA, everything you  
24 had, and put DNA sequences on the end of that which would  
25 be recognized by the restriction enzyme HindIII so that you

1       could insert it into a plasmid cut with the enzyme HindIII  
2       for cloning; is that right?

3       A.   That was the idea at that time, yes.

4       Q.   And the second type of experiment was one where you  
5       took the total cDNA that you had made and you first cut it  
6       up with the restriction enzyme HaeIII, right?

7       A.   That's correct.

8       Q.   And that yielded what you thought at the time were two  
9       prominent sizes of DNA that seemed to be created by cutting  
10      the total DNA with that enzyme, right?

11      A.   That is right.

12      Q.   And one of those sizes that resulted from that  
13      treatment you thought was about 180 bases long, right?

14      A.   That's right.

15      Q.   And one of them you thought was about 80 bases long,  
16      right?

17      A.   That's right.

18      Q.   And so you took those fragments that you had cut with  
19      HaeIII and you put the HindIII linker on them so you could  
20      put them in the plasmid and clone them; is that right?

21      A.   That is correct.

22                 MR. LIPSEY:  I would again offer 4067 in case it  
23      didn't get in.

24                 MR. LABGOLD:  No objection.

25                 THE COURT:  It will be received.

1 (Defendant's Exhibit(s) 4067 received in evidence.)

2 MR. LIPSEY: And unless we get too far away from  
3 it, I think I did not offer Exhibit 3212, which I will  
4 offer at this time also.

5 MR. LABGOLD: No objection.

6 THE COURT: It will be received.

7 (Defendant's Exhibit(s) 3212 received in evidence.)

8 Q. Isn't it true, Dr. Ullrich, that if, in fact, the DNA  
9 sequence at the beginning of clone pAU4 is as it is  
10 reported in Science, the chances of getting that piece of  
11 DNA twice in two experiments even starting with the same  
12 cDNA is extremely small?

13 A. As I said, I don't know how the sequence was generated.  
14 You will have to talk to John Shine or maybe Dr. Goodman  
15 about that. If it's a defined site, it would not be  
16 unlikely. If it's something that was a result of a  
17 sequencing limitations or limitation arising from the  
18 limitations of the sequencing procedure, it would not be  
19 unlikely.

20 Q. But if it is what it is reported to be, it would be  
21 extremely unlikely; isn't that right?

22 A. I don't understand what you mean by that, "if it is  
23 what it's reported to be."

24 Q. If the piece of DNA in clone pAU4 is the piece of DNA  
25 described in the Science article, it has the structure

1 given in the Science article, the chance of getting that  
2 twice in two independent experiments are extremely small,  
3 aren't they?

4 A. I don't recall that we established that this pAU4 was  
5 already characterized before in the same form. But I  
6 really can't say anything about it for the reasons that I  
7 stated already several times because the characterization  
8 of the clones sequencing and the preparation of these  
9 figures was not in my hands.

10 Q. Would you turn to page 594 of your deposition, please.  
11 This is again in February 3, 1992. And you can see  
12 extending over from 593 starting at line 21, we were  
13 talking about pAU4. Do you see that?

14 A. Yes, 21.

15 Q. Starting at page 593 at line 21, did you give the  
16 following answers to the following questions?

17 "Question: Sequence depicted for pAU4 is --

18 "Answer: You're talking about logic. There is a  
19 HaeIII site in the sequence. There a HaeIII site after the  
20 stop codon, gives an 80 base pair fragment. That's exactly  
21 what we did so there is no other way it was created.

22 "Question: Other than by random chance, right?

23 "Answer: No.

24 "Question: You don't believe in random chance?

25 "Answer: In this case, I don't believe it was by

1 random chance because the HaeIII digests -- I mean, it  
2 would be there is -- it would be highly unlikely that there  
3 by random chance was a deletion of three or four  
4 nucleotides in the DNA." Did you give that testimony?

5 A. It's very possible, yes. And I said, also I could  
6 probably read the answer before. I was just -- I just  
7 resent your attempts to lure me into a statement that I  
8 don't want to make.

9 Q. I understand that.

10 MR. LIPSEY: Your Honor, I'm at a point where I'm  
11 about to shift gears if the Court would like to take a  
12 mid-morning break.

13 THE COURT: All right. We'll be in recess for  
14 about ten minutes.

15 (The Court recessed from 10:40 a.m. to 10:50 a.m.)  
16  
17  
18  
19  
20  
21  
22  
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25

1 THE COURT: You may continue.

2 MR. LIPSEY: Thank you, your Honor.

3 Before it gets away from me, I would like to offer  
4 into evidence Defendant's Exhibit 3183, which is in the  
5 volumes that the Court has. That is the article which Dr.  
6 Ullrich used in his deposition to determine what the  
7 structure of the rat insulin 2 DNA was.

8 MR. LABGOLD: No objection.

9 THE COURT: All right. Defendant's Exhibit 3183  
10 will be received.

11 (Defendant's Exhibit(s) 3183 received in evidence.)

12 Q. Dr. Ullrich, you realized that the conduct of  
13 experiments in violation of NIH guidelines could be viewed  
14 as illegal, did you not?

15 A. I didn't know that.

16 Q. Would you take a look at Defendant's Exhibit 3443,  
17 which you should have in that volume. 3443. That should  
18 be in the first volume.

19 (Discussion off record.)

20 Q. That is a memorandum prepared by you while you were at  
21 Genentech; is that right? That's a memorandum written by  
22 you while you were at Genentech; is that right?

23 A. To be honest, I cannot remember that, but --

24 Q. It has your name on it?

25 A. I didn't have the habit to write down memos of that

1 sort. I have never done that, but yes.

2 Q. You don't have any reason to doubt the authenticity of  
3 this document, do you?

4 A. There's no signature on there. I really don't recall  
5 this.

6 Q. The subject matter relates to subject matter that you  
7 were, in fact, involved with at or about the time this is  
8 generated in February of 1979; isn't that right?

9 A. Yes.

10 Q. And in the memorandum in reference to cloning  
11 experiments, you state in about the middle of the first  
12 paragraph, "I explained to him that cloning experiments  
13 with material derived from this human tumor were illegal  
14 until the January 2nd change in the NIH guidelines." Do  
15 you see where I have read?

16 A. I see what you're saying, yes.

17 Q. And the change in the guidelines to which you refer was  
18 a change which in January of 1979 permitted for the first  
19 time doing human cDNA cloning experiments in so-called P3  
20 containment; is that right?

21 A. That is correct. And I assume you're aiming at the  
22 word "illegal," and I do not remember using that word. And  
23 the guidelines were, as far as I know, not a law, were  
24 guidelines.

25 Q. They were mandatory for researchers at the University

1 of California doing research with federal funds, weren't  
2 they?

3 A. But not the law.

4 Q. They were mandatory, weren't they?

5 A. But not the law.

6 Q. They were mandatory, weren't they?

7 A. But not the law. I guess there's a difference.

8 THE COURT: Okay. We can do this all morning.

9 MR. LIPSEY: Okay. I'm sorry.

10 Q. And the work you were doing on rat insulin cDNA was  
11 being funded with federal money; isn't that right?

12 A. Well, I was funded by a German company.

13 Q. But the work in Dr. Goodman's lab was --

14 A. Part of this was covered by other grants which I was  
15 not aware of in detail.

16 MR. LIPSEY: Offer Exhibit 3443.

17 MR. LABGOLD: No objection.

18 THE COURT: It will be received.

19 (Defendant's Exhibit(s) 3443 received in evidence.)

20 Q. Now, you indicated yesterday that there came a time  
21 when you did some human insulin cDNA cloning experiments in  
22 France, and that you got some fragmentary clones; is that  
23 right?

24 A. Yes. That's right.

25 Q. And one of those clones was called clone 5/2; is that

1 right?

2 A. That could be, yes.

3 Q. Would you take a look in the second volume that's been  
4 handed up, at Defendant's Exhibit 3440. 3440. If it's  
5 missing, we can dig it out. It should be in the -- do you  
6 have a copy of it?

7 A. I have it.

8 Q. Do you recognize Exhibit 3440 as a letter sent by  
9 Genentech to U.C. relating to some materials which you had  
10 brought with you when you joined Genentech in early '79?

11 A. Yes, I see the note.

12 Q. And among the materials you brought with you under  
13 number 3 were plasmid pBR322 containing human insulin DNA  
14 fragments 5/2 and some others; do you see that?

15 A. I see them.

16 Q. Does that refresh your recollection that this clone 5/2  
17 was a human insulin DNA fragment from your work in France?

18 A. Yes, this document indicates that.

19 Q. And if you would turn backwards or back towards the  
20 front to Exhibit DX3439, that's a memorandum in the first  
21 section describing partial sequence information for clone  
22 5/2; is that right?

23 A. That's what it says, yes.

24 MR. LIPSEY: I'd like to offer into evidence  
25 Exhibits 3440 and 3439.

1 MR. LABGOLD: No objection.

2 THE COURT: They will be received.

3 (Defendant's Exhibit(s) 3440, 3439 received in  
4 evidence.)

5 Q. Now, among the materials that you took with you from  
6 U.C. when you left to go to Genentech was the rat insulin  
7 cDNA plasmids; is that correct?

8 A. That is correct.

9 Q. And did you also bring some raw messenger RNA isolated  
10 from a human insulinoma tumor?

11 A. Yes.

12 Q. Did you feel you were doing anything wrong when you  
13 brought those materials from U.C. to Genentech?

14 A. No, I did not, because it was the consequence of an  
15 agreement between myself and Howard Goodman to the effect  
16 that we would continue collaboration.

17 MR. LABGOLD: Objection. Your Honor, this subject  
18 matter post-pBR322 is not related to any defense the  
19 Defendant is now raising. It relates to defenses which  
20 they have dropped. It is no longer relevant, an issue in  
21 the case.

22 MR. LIPSEY: Your Honor, we're concerned -- Dr.  
23 Ullrich did some of the work that lead ultimately to the  
24 plasmid that Lilly got from Genentech. And we're concerned  
25 that there's going to be an allegation in a post-trial

1 brief that somehow or other the use of these materials was  
2 somehow wrong and somehow should affect the infringement  
3 analysis. And I simply wanted to get on the record that  
4 Dr. Ullrich didn't feel there was anything wrong with what  
5 he did there in using those materials.

6 MR. LABGOLD: I don't believe that we have raised  
7 any issues such as that in our brief. And I would suspect  
8 that if we try to bring it up in the post-trial briefing,  
9 you would point out that fact.

10 MR. LIPSEY: Well, to point it out with no  
11 evidence is not very satisfying, Your Honor.

12 MR. LABGOLD: I think the record is clear on that  
13 point now.

14 MR. LIPSEY: If the Court will bear with me, it  
15 will take just a couple minutes.

16 THE COURT: Go ahead.

17 Q. Did you complete your answer, Dr. Ullrich?

18 A. I did.

19 Q. And I gather that you did use the rat insulin DNA, for  
20 example, as a hybridization probe in subsequent experiments  
21 you did at Genentech; is that right?

22 A. Yes, I did.

23 Q. And I gather that the messenger RNA for the human  
24 insulinoma was used in reverse transcription experiments to  
25 make human insulin cDNA; is that right?

1 A. Yes. But it proved to be of poor quality and degraded;  
2 and therefore, was not used further.

3 Q. But whatever use was made of those materials you did  
4 not believe was wrongful at the time; is that right?

5 A. Was absolutely not wrongful.

6 Q. Would you turn to Exhibit 3480, please.

7 MR. LIPSEY: It's already in evidence, Your Honor.

8 Q. Did you understand that there came a time when,  
9 notwithstanding your view on your right to use these  
10 materials, Genentech nonetheless settled with the  
11 University in order to avoid a dispute about it?

12 A. I understand that, yes.

13 Q. And you were required to sign a waiver in connection  
14 with that settlement which is part of Defendant's Exhibit  
15 3480, is that right, the last page?

16 A. My employer asked me to sign that waiver, that's  
17 correct.

18 Q. And in so doing, you didn't feel you were acknowledging  
19 wrongdoing in any way, did you?

20 A. That's correct.

21 Q. And you understood that the University was going to get  
22 money from Genentech's insulin royalties it was receiving  
23 from Lilly as a result of this settlement; is that right?

24 A. I did not really understand that at that time. I  
25 didn't know anything about it. I just found out later.

1 Q. But when you found out later, did you learn that  
2 Genentech, in fact, paid the University nearly \$3 million  
3 under the settlement agreement?

4 A. This is news to me.

5 Q. Do you have an understanding as to how much the  
6 University got under this settlement agreement?

7 A. You've just told me.

8 Q. If the Court would let me testify, I would be happy  
9 about that.

10 THE COURT: Well, you do a pretty good job of it.

11 (Laughter)

12 Q. Would you turn to Defendant's Exhibit 3233, please.

13 MR. LABGOLD: Objection. Once again, this issue  
14 Mr. Lipsey is proceeding, I think he's established the fact  
15 that there was no wrongdoing and the fact that he wanted to  
16 establish. The issues that he's going into now have no  
17 relationship to any issue which they are asserting in the  
18 case.

19 MR. LIPSEY: They have everything to do with it,  
20 because if the Court will bear with me, I will show that in  
21 this declaration Dr. Ullrich swore that the European patent  
22 application of Itakura and Riggs basically taught  
23 everything you needed to know to make polypeptides and  
24 microorganisms, which goes directly to our validity  
25 defense.

1 THE COURT: Well, of course, I haven't had time to  
2 read the affidavit yet, but if that's what it says, I will  
3 overrule the objection.

4 Q. Dr. Ullrich, do you recognize Exhibit 3233 as an  
5 affidavit subscribed and sworn to by you on the 10th day of  
6 August, 1984?

7 A. I remember that you presented this to me in my  
8 deposition; and that I could have sworn I had never seen  
9 it, but my signature is there, yes.

10 Q. And you would not have subscribed and sworn to this  
11 document without believing that the statements you  
12 contained in it were true and correct; is that right?

13 A. It is very clear that this was an affidavit that I was  
14 asked by my employer at that time to sign. And it's also  
15 clear that I am not a patent attorney, so I really did not  
16 fully understand what I was signing, but I signed it.  
17 That's all I can say.

18 Q. In paragraph 9 you state, "My understanding upon  
19 reading reference 1 is that it discloses the general  
20 concept that the DNA insert may be comprised of DNA from  
21 any source, including chemically synthesized DNA and cDNA.  
22 For example, in reference 1, explicit mention is made to  
23 the use of cDNA under the heading 1, Preparation of Genes  
24 Coding for Heterologous Peptides. And in the paragraph  
25 preceding 'summary of invention'.

1 "In referring to the paper of myself and co-workers,  
2 reference 3, they are clearly stating that cDNA can be  
3 expressed in a similar fashion to the chemically  
4 synthesized DNA. I entirely agree that the source of the  
5 DNA coding sequence is not a determining factor in  
6 achieving expression in the Itakura, et al. system."

7 Do you see where I have read? Do you see where I have  
8 read?

9 A. I see what you have read, yes.

10 Q. Do you know what reference 1 is that you're talking  
11 about here? Do you remember?

12 A. No.

13 Q. Do you see this is a notice of opposition against a  
14 European patent 12494; that's at the very top of the first  
15 page?

16 A. Yeah.

17 Q. And if you turn to Defendant's Exhibit 3235, which is  
18 the next exhibit, you will see there an excerpt from the  
19 notice of opposition to European patent 12494. Do you see  
20 that?

21 A. I see that, yes.

22 Q. And if you turn to the second page, you see the  
23 identification of reference 1, and among those is EP-1929;  
24 is that right?

25 THE COURT: Second page of what?

1 MR. LIPSEY: Of Exhibit 3235.

2 A. Yes, I see that.

3 Q. And that's the published European patent application of  
4 Itakura and Riggs; is that correct?

5 A. I don't know that. I have heard it before.

6 Q. Now, the application, the European patent application  
7 against which you were filing this declaration, was a  
8 patent application filed by U.C., right?

9 A. Could you repeat the question?

10 Q. The patent application you were opposing with your  
11 affidavit was one filed by the University of California;  
12 isn't that right?

13 A. That is the Riggs and Itakura?

14 Q. No, the one you were trying to invalidate, the one you  
15 were opposing. Number 12494.

16 A. I don't remember what patent that is.

17 Q. Would you turn to Defendant's Exhibit 3046, please.

18 A. 3046.

19 Q. That's the European patent application you were  
20 opposing, right?

21 A. I don't think I have ever seen this one --

22 Q. Let me --

23 A. -- this application.

24 Q. You can see the number there, you know it's the same?

25 A. I can see.

1 Q. And you recognize that that's a patent application  
2 filed originally by Drs. Goodman, Rutter and Baxter on the  
3 expression of eukaryotic genes in microorganisms, right?

4 A. That's what it says, yes.

5 Q. And in fact, the fact that you had not been named as a  
6 co-inventor on this application when it was originally  
7 filed was a factor in your deciding to leave the University  
8 of California and go to Genentech; isn't that right?

9 A. As I said, I didn't know anything about this particular  
10 patent application, and I --

11 Q. No, I'm talking now about the originally U.S. one.

12 A. -- and I have to admit about the patent history of all  
13 this. I was completely confused. I didn't know really  
14 what was going, still don't know until today. So this is  
15 the first time I see this.

16 Q. Separate and apart from the European patent  
17 application --

18 A. Yes.

19 Q. -- at your deposition we discussed the factors for your  
20 leaving U.C., and one of them was that you hadn't been  
21 included as a co-inventor on this basic expression patent  
22 application that U.C. had filed; is that right?

23 A. That was a factor that included that. The confusion  
24 about patents and authorship, yes.

25 Q. And isn't it true that at the time you filed your

1 declaration opposing the issuance of that patent  
2 application in Europe, you had been notified by U.C. that  
3 they had determined that you should be a co-inventor on  
4 that patent?

5 A. I really don't remember.

6 Q. Would you take a look at Defendant's Exhibit 3479,  
7 please. Do you recognize that as a letter to you from  
8 U.C.'s patent letter, Lorange Greenlee?

9 A. Yes, I see that.

10 Q. The first paragraph states, "As we have already  
11 discussed, it appears appropriate to me for a variety of  
12 interrelated reasons to include you as an inventor in this  
13 case, which is the combined insulin growth hormone  
14 expression patent application."

15 Do you see where I have read?

16 A. Yes, I see.

17 Q. And that's the patent application that you were upset  
18 about when you left U.C., right?

19 A. Was one of the factors, yes.

20 Q. Now, while you were at Genentech, is it correct that a  
21 Mr. Thomas Kiley was acting as patent counsel for  
22 Genentech?

23 A. That is correct.

24 Q. And is it correct that from time to time during your  
25 employment at Genentech you had occasion to meet with

1 Mr. Kiley on matters that he was handling for Genentech?

2 A. Yes, that's correct too.

3 Q. And did you have occasion during those meetings to  
4 provide him with information to the extent he requested it  
5 from you?

6 A. He asked me questions; I answered when I could.

7 MR. LABGOLD: Objection. Again, Your Honor, this  
8 is another defense. This goes to their 102G defense which  
9 they have dropped.

10 MR. LIPSEY: Your Honor --

11 THE COURT: I am interested in everything that  
12 happened. So I overrule your objection.

13 Q. And in those circumstances when you met with Mr. Kiley  
14 and he solicited information from you, did you endeavor to  
15 provide accurate and complete information, to the best of  
16 your ability?

17 A. Obviously I tried.

18 Q. Obviously.

19 MR. LIPSEY: Your Honor, at this point I would  
20 like to move into evidence Exhibits 3046, 3233, 3235 and  
21 3479.

22 MR. LABGOLD: No objection.

23 THE COURT: They will each be received in  
24 evidence.

25 (Defendant's Exhibit(s) 3046, 3233, 3235, 3479 received

1 in evidence.)

2 Q. I gather, Dr. Ullrich, that you had occasion to publish  
3 the results of the human insulin cDNA cloning work you did  
4 at Genentech; is that right?

5 A. That's correct.

6 Q. And is that publication Defendant's Exhibit 3173 that  
7 you have before you?

8 THE COURT: Is that 3173 in evidence?

9 MR. LIPSEY: Not yet. It's about to be, Your  
10 Honor.

11 THE COURT: Okay.

12 Q. Is that your publication?

13 A. That's correct. Yes.

14 MR. LIPSEY: Offer Exhibit 3173.

15 MR. LABGOLD: No objection.

16 THE COURT: It will be received.

17 (Defendant's Exhibit(s) 3173 received in evidence.)

18 Q. And the next exhibit in the book, DX3180, which I  
19 believe is already in evidence, is another publication on  
20 which you're named as a co-author; is that right?

21 A. Yes, I am the first author on that paper.

22 Q. And the experiments described there relate to efforts  
23 to express pieces of the rat insulin DNA which you had  
24 earlier isolated in bacteria?

25 A. That is correct.

1 Q. And in those efforts no attempt was made by you to  
2 tailor the DNA, the rat insulin DNA, so that it started  
3 right at the beginning of proinsulin; is that right?

4 A. Did you say "no efforts"?

5 Q. Let me rephrase the question. The experiments reported  
6 in this article did not involve the use of rat insulin DNA  
7 that had been tailored to start specifically right at the  
8 beginning of proinsulin; is that right?

9 A. That is not right. If I remember correctly, there were  
10 efforts to use linkers to tailor this DNA so that it  
11 produces proinsulin.

12 Q. There were --

13 A. But also you should -- you are aware obviously that  
14 this is not a reviewed article. This is a book chapter.

15 Q. I am trying to establish what the underlying work is.

16 A. I see.

17 Q. Okay. And there were two experiments you did: One was  
18 to take the piece of DNA that was in pAU4 in the Science  
19 article and try to express it in bacteria, right? It may  
20 not be recorded --

21 A. I honestly don't remember, no.

22 Q. I beg your pardon?

23 A. I don't remember that.

24 Q. Okay.

25 A. Is it described in that article?

1 Q. No, it is not in that level of detail. I was hoping  
2 you would remember.

3 A. PAU4? Why would I express pAU4?

4 Q. Did I say 4? I'm sorry. I thought I said 1. I meant  
5 to say 1.

6 A. So certainly not pAU4. PAU1?

7 Q. Right.

8 A. I am sorry, I would have to study the details. But  
9 clearly the intention of these experiments described in  
10 this manuscript, in this published are in -- published in  
11 book paper, were to tailor the DNA so that one would get  
12 initiation at the correct site and production of a protein  
13 that contained insulin sequences. And we have actually  
14 done that and demonstrated that we did produce insulin in  
15 microorganisms.

16 Q. We are passing in the night --

17 A. Well, I just give you the summary of that what you are  
18 asking.

19 THE COURT: You're no longer passing. You're  
20 talking together.

21 MR. LIPSEY: I'm sorry.

22 THE WITNESS: I'm sorry.

23 Q. It is correct that the pieces of insulin DNA used in  
24 that experiment were not trimmed so that the insulin coding  
25 sequence started precisely at the beginning of proinsulin;

1 is that correct?

2 A. Again, I would have to study and recall all these  
3 experiments. I can't just tell you by looking at the -- I  
4 have not in depth read this paper recently. Not in the  
5 last 15 years probably.

6 Q. Okay. Would you refer, please, to Defendant's Exhibit  
7 3028A already in evidence, which is the original text of  
8 the application for the '525 patent. Do you have that  
9 before you?

10 A. Could you tell me the number again?

11 Q. 3028A.

12 A. Yes.

13 Q. And specifically turn to the second to last page of the  
14 exhibit, page 44, RP00044.

15 A. 44?

16 Q. Yes. Is that your signature on that page?

17 A. Yes.

18 Q. And that is the last page of a declaration, power of  
19 attorney and petition, is that correct, which starts on  
20 page 42?

21 A. Yes.

22 Q. And in that declaration on page 42, you swore that you  
23 had read the foregoing specification and claims; isn't that  
24 right? Three lines above the title of the invention in the  
25 middle of the page.

1 A. Yes.

2 Q. And you would not have signed this oath had you not  
3 done so; is that right, Dr. Ullrich?

4 A. I have read this, yes, at that time.

5 Q. And in fact, if you turn to page 7 of the patent  
6 application, which has the Bates number ending 12, your  
7 initials appear next to a change there, don't they?

8 A. Yes.

9 Q. Would you turn to Exhibit 3571, which should be all the  
10 way at the back of the book. Do you recognize that as the  
11 assignment agreement between yourself and U.C. relating to  
12 the '525 patent; is that right?

13 A. That's what it seems to be.

14 Q. And that's your signature on the third page of the  
15 document; is that right?

16 A. That is right.

17 Q. And you expect to share in the proceeds if any are  
18 derived by the University of California in this lawsuit in  
19 accordance with the University's patent policy; is that  
20 correct?

21 A. Yes.

22 MR. LIPSEY: Your Honor, the next group of  
23 materials which I have relate to Genentech. And I received  
24 a letter shortly before the trial began from Genentech  
25 asking that the materials not be used in open court or be

1 received under seal. And what I have is a volume  
2 containing those materials, which I will describe to my  
3 opposing counsel. It contains a handwritten sheet from a  
4 Genentech laboratory notebook of Dr. Ullrich's. It  
5 contains some notes of an interview by Genentech's patent  
6 lawyer. It contains a chronology prepared by Genentech's  
7 patent lawyer. It contains the deposition testimony of the  
8 Genentech patent lawyer establishing how those documents  
9 were made and authenticating them. It contains an excerpt  
10 from a Genentech laboratory notebook of Dr. Goeddel about  
11 which the witness testified in his deposition; an excerpt  
12 from a laboratory notebook from Genentech that belonged to  
13 the witness about which he testified; and then the pages of  
14 his deposition where he described what that work was.

15 And I would propose to offer into evidence the package  
16 under seal so that we need not interrogate the witness in  
17 open court on the matter, subject to supplementation with  
18 such other materials as U.C. feels should be added to make  
19 it complete.

20 MR. LABGOLD: We have multiple objections to this,  
21 Your Honor. First of all, the documents that are in here,  
22 as Mr. Lipsey says, relate to handwritten documents by  
23 Genentech's patent attorney. These documents are hearsay.  
24 There's no reason why we have to go through it with this  
25 witness at this time. There are issues, other notebooks by

1 Dr. David Goeddel. Once again, this is not this witness'  
2 notebook.

3 As far as the deposition transcript, the witness is  
4 here. I think the witness should be interrogated on  
5 whatever documents are appropriate to use.

6 And the other issue is that, once again, this whole  
7 matter relates to an issue which is a 103 issue of  
8 obviousness which Lilly is no long asserting. It's our  
9 fear that they are saying that in their brief there are six  
10 issues. They're raising those six issues. And in our case  
11 we're going to defend against those six issues.

12 Our fear is that we're not going to put in evidence in  
13 our case to respond to the issues which they say they have  
14 dropped. And then in post-trial briefing they're going to  
15 raise those issues. And we will not be given an  
16 opportunity to address them because they are issues which  
17 Lilly says were not issues in the case.

18 MR. LIPSEY: We are not contending that any of the  
19 issued patent claims is invalid under 35 USC Section 103.  
20 It is important for us to prove up the origins of the  
21 materials and information that found their way into our  
22 construction. That's part of our case. And Dr. Ullrich  
23 had one foot in both worlds. He was with U.C. when the  
24 '525 patent was filed; he was with Genentech when Lilly's  
25 material was developed.

1           And there are certain matters which we would like to  
2 prove. We believe they are not hotly contested, and that's  
3 why we would like to offer this into evidence.

4           MR. LABGOLD: Your Honor, the matters here of what  
5 Genentech's patent attorney said or did not say are not at  
6 issue with this witness. Furthermore, Lilly took a  
7 deposition, a 30(b)(6) deposition, of Genentech to verify  
8 all of the records as to how the plasmid that they used was  
9 constructed. That will be, I'm sure, admitted into  
10 evidence. And I think that's a much more appropriate way  
11 of proceeding on this matter.

12           MR. LIPSEY: Perhaps we can simplify the issue.  
13 If I withdraw from the proffer the notes of Mr. Kiley and  
14 his deposition and we deal with those separately, would  
15 that solve U.C.'s problem?

16           MR. LABGOLD: I think if the only matter is -- if  
17 the only thing you're concerned about here is the origin of  
18 the plasmid, then I think that that evidence could be more  
19 readily admitted to this Court. I don't think you'll have  
20 any dispute to the 30(b)(6) deposition of Dr. Dennis Kleid  
21 who is a Genentech representative. And if you're  
22 representing to the Court that that's the only matter that  
23 you want to go into on this, that's fine. I don't think  
24 we're going to have a problem with that. I think that's a  
25 much easier way for the Court to deal with it. I think we

1 can just move in those deposition transcripts and that will  
2 satisfy your needs.

3 MR. LIPSEY: Your Honor, I have to be the arbiter  
4 of what evidence I feel needs to come in to support my  
5 client's position. I am prepared to wade through this with  
6 the witness. I was hoping -- I don't know how we'll  
7 accommodate Genentech's request other than by sealing the  
8 courtroom, if the Court so orders.

9 THE COURT: Well, some of the things that you  
10 mentioned in there, such as an attorney's opinion, I don't  
11 see how that would be admissible through this witness.

12 MR. LIPSEY: What if I remove those materials,  
13 Your Honor?

14 THE COURT: Well, why don't we take an early lunch  
15 and come back at 1:00, and in the meanwhile, see if you  
16 can't work that out.

17 MR. LABGOLD: One thing, Your Honor, if we could  
18 do here: If we could work this out in a timely fashion, I  
19 would ask the indulgence. Dr. Ullrich, if possible, had  
20 hoped to try to make a 1:30 plane to go back to Germany.  
21 If it's not possible, then we'll have to accommodate the  
22 Court in that regard.

23 And Mr. Lipsey, as I say, I think that if the only  
24 matter here is authentication here of these pages, if  
25 that's the issue, then I think that once again we can come

1 to an agreement on that.

2 MR. LIPSEY: May I discuss directly with Mr.  
3 Labgold? I think there is a quick way to work this out  
4 here. I am sensitive to the plane problem.

5 THE COURT: Well, you don't need to have this on  
6 the record, do you?

7 MR. LIPSEY: No. Perhaps we can take a  
8 five-minute break and then finish up.

9 THE COURT: Okay.

10 MR. LIPSEY: Thank you, Your Honor.

11 MR. LABGOLD: Thank you.

12 (The Court recessed from 11:30 a.m. to 11:35 p.m.)

13 THE COURT: Well, did we decide to get Dr. Ullrich  
14 back to Germany or not?

15 MR. LABGOLD: Thank you for your indulgence in  
16 that regard, Your Honor. We talked during the break about  
17 our position. Mr. Lipsey tells me this goes to the issue  
18 of copy on non-infringement. That's how they intend to use  
19 it.

20 We have several documents in here which are in Dr.  
21 Ullrich's handwriting, and we have corresponding deposition  
22 transcript in that regard. We understand Genentech's  
23 sensitivity. We would suggest those documents go in with  
24 the deposition testimony. There is a subsequent document,  
25 may I? Which is Defendant's Exhibit 3241A that is a

1 notebook of Dr. Goddel. We don't believe that this  
2 testimony, the testimony of this witness is critical to Dr.  
3 Goddel's notebook. Dr. Goddel's testimony will be  
4 available in that regard as well as that 30(b)(6).

5 And so we would just ask that if pages that are  
6 directly relevant to this witness, those in his hand or  
7 involve his work directly, that that should be admitted  
8 through the testimony of his deposition. We would not  
9 object to that.

10 MR. LIPSEY: Your Honor, the only bone of  
11 contention is this excerpt from the Goeddel notebook which  
12 describes certain work in which the witness was involved  
13 and which is apparent from the references on the pages,  
14 themselves, and about which the witness testified in his  
15 deposition. Counsel concedes that the notebook itself is  
16 going to come into evidence through the deposition of Dr.  
17 Goddel.

18 And what I would propose to do is to show these items  
19 to the witness, have him confirm that certain of them are  
20 in his handwriting, have them confirm -- have him confirm  
21 he knew Dr. Goddel, and have him confirm that he gave the  
22 deposition testimony that is attached. And I would then  
23 close, Your Honor.

24 THE COURT: Well, that seems reasonable. Go  
25 ahead.

1 BY MR. LIPSEY:

2 Q. Dr. Ullrich, do you have before you the volume labeled  
3 Ullrich 2? Should be a small one.

4 A. Yes, I do.

5 Q. Would you turn to Defendant's Exhibit 3226 and confirm  
6 that that is a sheet of notes in your handwriting?

7 A. Yes, that's my handwriting.

8 Q. Would you turn to exhibit 3241A and confirm that you  
9 knew a Dr. David Goeddel at Genentech?

10 A. I knew Dr. David Goeddel.

11 Q. And did you from time to time work on projects with Dr.  
12 Goddel?

13 A. Yes.

14 Q. And in fact, Dr. Goddel is a co-author on your article  
15 describing the human insulin cDNA cloning experiments you  
16 did at Genentech, right?

17 A. That's correct.

18 Q. Would you turn to exhibit DX3243A and confirm that your  
19 handwriting appears on the pages of that exhibit which have  
20 handwriting?

21 A. Yes, that's my handwriting.

22 Q. And do you recall, at least generally, that we talked  
23 about these documents in your deposition?

24 A. Yes, we did.

25 Q. Would you confirm that what we have here as Defendant's

1 Exhibit 3743 is the testimony you gave on that occasion?

2 A. Yes, that is.

3 MR. LIPSEY: Your Honor, we would offer into  
4 evidence DX3226, 3241A, 3243A, 3743 at this time.

5 MR. LABGOLD: No objection.

6 THE COURT: Now are these supposed to be offered  
7 straight out or are they offered --

8 MR. LIPSEY: I apologize, Your Honor. I was  
9 offering them into evidence on the condition, in order to  
10 accommodate Genentech, that they be received under seal.

11 MR. LABGOLD: We have no objection to that.

12 THE COURT: All right. The court will receive  
13 DX3226, 3241A, 3243A and 3743 under seal.

14 (Defendants' Exhibit(s) 3226, 3241, 3243, 3743 received  
15 in evidence.)

16 MR. LIPSEY: If I may briefly check, Your Honor,  
17 and make sure I have offered everything into evidence, I  
18 think I am done.

19 Your Honor, Lilly has no further questions for Dr.  
20 Ullrich at this time. Thank you very much, Dr. Ullrich.

21 MR. LABGOLD: Your Honor, I have about two minutes  
22 worth of questions.

23 THE COURT: Go ahead.

24 MR. LIPSEY: I have about two minutes of clean up  
25 here, Your Honor.

1 REDIRECT EXAMINATION

2 BY MR. LABGOLD:

3 Q. For ease of the Court and the witness, I would ask that  
4 we just bring these exhibits up on the monitor briefly so  
5 we can see their identification.

6 I'd like to refer you to Defendant's Exhibit 3420 which  
7 is a document which has been received in evidence and this  
8 was a report to the NIH.

9 Dr. Ullrich, did you assist in the preparation of this  
10 document?

11 A. Not directly.

12 Q. I'd like to bring up onto the screen 3340. These were  
13 some notes which you identified as being from your files.  
14 Did you see on that page there, and I have blown it up for  
15 clarity, any reference to a plasmid 3/13?

16 A. No.

17 Q. And I'd like to go to the next page on that document.  
18 Once again I'll blow it up for clarity. If you can see  
19 that, whether you see any reference there to a clone  
20 denominated as 3/13?

21 A. No, I don't.

22 Q. Did Mr. Lipsey show you any documents which identify as  
23 a plasmid 3/13 as isolated in pBR322?

24 A. No, he didn't.

25 Q. Did Mr. Lipsey show you any evidence that pAU 4 was

1 prepared in pBR322?

2 A. No, he didn't.

3 Q. I'd like to direct your attention to Defendant's  
4 Exhibit 3346. This was the P3 logbook. If you will allow  
5 me to page through here, I believe this was the document  
6 which Mr. Lipsey referred to you. Do you recall that?

7 A. Yes, I do.

8 Q. And I'd like to focus in down at the approval line.  
9 You recognize whose name is set forth there?

10 A. This is the name of Brian McCarthy.

11 Q. Was he a member of Dr. Goodman's group?

12 A. No, he was not.

13 Q. Was he a member of U.C. Biosafety Committee?

14 A. Yes, he was.

15 Q. Did you seek his approval for making this entry into  
16 the logbook?

17 A. He must have been the one, yes.

18 Q. I'd like to refer to Defendant's Exhibit 3339.

19 MR. LABGOLD: All of these have been accepted into  
20 evidence, Your Honor.

21 Q. This was referred to as a notebook found in Dr.  
22 Goodman's files. And looking at the monitor I don't think  
23 really helps us all that much, but I don't think we can  
24 clarify.

25 THE COURT: Can't read it.

1 MR. LABGOLD: Exactly. I don't think we can read  
2 the copy either, Your Honor, I apologize for --

3 A. It doesn't look much worse than my copy here.

4 Q. Did this document come from your files?

5 A. It looks like that, yes.

6 Q. Is this a complete copy of your notebook?

7 A. No, this was a heterogeneous collection of pages from  
8 my notebook.

9 Q. I'd like to refer to Defendant's Exhibits DX3212 also  
10 in evidence. This was a document that related to our  
11 conversations with Genentech. Did you acquire the  
12 Genentech stock referred to in this exhibit?

13 A. No, I did not.

14 Q. And why didn't you?

15 A. The negotiations did not come to completion because, I  
16 believe, parallel negotiations with Eli Lilly led to an  
17 abortion of this process here.

18 MR. LABGOLD: We have no further questions, Your  
19 Honor.

20 MR. LIPSEY: I have just a couple, Your Honor.

21 RE-CROSS-EXAMINATION

22 BY MR. LIPSEY:

23 Q. You did get in that hybridization experiment in the  
24 pBR322 work a positive result for a 90 base pair clone for  
25 which there was no clone number given. Do you remember

1 seeing that?

2 A. I vaguely remember. But I also know that there were  
3 many clones from in that cloning fraction.

4 Q. And now your counsel asked you whether this was a  
5 complete copy of your notebook. Do you have records of the  
6 pMB9 cloning experiment?

7 A. Not that I know where they are, no.

8 Q. And isn't it true that the agreement with Eli Lilly was  
9 entered into sometime in 1978?

10 A. If you say so, I don't recall it.

11 MR. LIPSEY: We have no further questions, Your  
12 Honor.

13 MR. LABGOLD: We have no questions, Your Honor.

14 THE COURT: All right, God speed.

15 THE WITNESS: Thank you very much.

16 THE COURT: And we'll be in recess till 1:30.

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