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UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA

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HONORABLE MARIANA R. PFAELZER. JUDGE PRESIDING

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GENSCI REGENERATION LABORATORIES, INC.,  
Plaintiff,

-vs-

NO. SACV 99-10111-MRP  
VOLUME 1

OSTEOTECH, INC.,

Defendant.

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REPORTER'S TRANSCRIPT OF PROCEEDINGS

Santa Ana, California

Wednesday, October 25, 2000

Kathleen Haaland, CSR, RPR  
192 US Courthouse  
411 W. 4th Street  
Santa Ana, CA 92701  
714 558-3858

BY MR. BROWN:

Q. Dr. Eisch, let's talk for awhile about polyhydroxies.

You relied on the the dictionary and your own experience to arrive at a definition for polyhydroxy; is that correct?

A. Those would be -- the dictionary was exemplary. I looked at many other documents, textbooks and so on, yes.

But, yes, that would be exemplary and my experience too, yes.

Q. But in terms of your actual testimony, the only exhibit that you specifically referred to with respect to polyhydroxies to support your position was a dictionary reference, I believe, from Hawley's; was it?

A. That's correct.

Q. Did you survey the other technical dictionaries or references to determine whether they all say that a polyhydroxy has three or more hydroxyl units?

A. I looked at a number of dictionaries, but I tended to concentrate not on what you what call chemical technological dictionaries, but on chemical dictionaries.

Q. And in your review of those chemical dictionaries, isn't it true that in substantial number of them define polyhydroxy as containing two or more hydroxyl units?

A. No, it's not true, in my impression, of what I

surveyed.

Q. Let's turn to Exhibit 319.

A. (The witness complied.)

Q. Are you familiar with the dictionary of biochemistry and molecular biology?

A. Yes, I think I've seen the title.

Q. Okay. Focus in on polyhydroxy, would you agree with me Dr. Eisch, that this reference defines polyhydroxy as containing two or more hydroxyl units?

A. Yes, but I would add to the fact that this is not a chemistry dictionary. It's a biochemistry and biology dictionary, which I would not take as authoritative.

Q. But for people who are working with bones, would you agree that bone biology is in the area covered by this textbook, this reference book?

A. I would say to that that people in whatever field, they're dealing with chemical terms ought to seek chemical definitions.

Q. So I don't think it would be appropriate for a person working in the field of bone biology to rely on this reference?

A. I don't think so, for chemical answers.

Q. Let's look at the exhibits 321.

A. (The witness complied.)

Q. Are you familiar with Webster's dictionary?

A. Yes, in its many manifestations.

Q. Let's see what Webster's dictionary has to say about polyhydroxy.

And am I correct that it refers to polyhydroxy that is containing more than one hydroxyl group in the molecule?

A. Yes, but I would add that if you look at the word poly, which means many, I don't think two in any language is considered many.

And so I would not -- and I certainly wouldn't go into a collegiate dictionary to get a definitive active answer on chemical nomenclature.

Q. Now, when you testified about the meaning of polyhydroxy, you didn't allude to the patent as a basis for your definition of polyhydroxy, did you?

A. No, I did not.

Q. Is that because you didn't rely on the language in the patent in formulating your opinion as to what the term polyhydroxy means?

A. Well, I think if you're looking for the meaning of a word in chemistry, it should be in an authoritative context.

And naturally a patent is the product of some people writing it and whether they have based themselves on authoritative sources in using their language, I

What testimony are you talking about?

Q. On polyhydroxy, the term polyhydroxy.

A. Well, as I see, in the use in the patent, I was not clear from the intrinsic evidence on what it ought to mean.

Q. All right. Well, let's turn to the '558 patent, Trial Exhibit 175 at column 6, lines 53 to 68.

Do you have that in front of you, doctor?

A. (The witness complied.)

Yes, I can see it here.

Q. Now, am I correct that it contains the language polyhydroxy compound is selected from the group consisting of acyclic polyhydric alcohols, non reducing sugars, sugar alcohols, sugar acids, monosaccharides disaccharides, water soluble or water dispersible, oligosaccharide, polysaccharides, polyalkylene glycols, and mixture thereof, correct?

Q. Now, you testified that we can all agree that a glycol means two hydroxyl groups; is that correct?

A. A glycol, with the proviso that in calling something a glycol, you are naming the two hydroxyl group as being the most prominent functional group in the molecule.

Q. And would you agree that the term polyalkylene glycol refers to compounds that may contain two hydroxyl

wouldn't know a priori, and so therefore I would always refer to some authoritative outside source in getting the meaning of that word.

Q. So you would look first to an outside authoritative source to interpret a term in the patent rather than to the patent itself, right?

A. No, I didn't say that. I said if you wanted to find out the meaning of the word -- I'm not talking about construing a patent now. I'm talking about the meaning of the word. And that is different than construing.

I certainly am construing a patent, look at the patent first, yes, sir.

Q. In connection with your definition of polyhydroxy, did you look at the patent?

A. Yes, I did.

Q. And did you construe the term polyhydroxy based on your review of the patent?

A. Well, after looking at the intrinsic evidence in the claims and the patent and even the trial history of the patent, which would be the intrinsic evidence, one can in doubt turn to extrinsic evidence, I understand, and that is where one would resort to chemical dictionaries to help one in one's understanding.

Q. But in your testimony you did not direct us to any intrinsic evidence, as you used that term; correct?

groups and only two hydroxyl groups?

A. It may refer to that. That is in the usage that is fostered by Osteotech. Yes, that is the usage.

Q. Now, you gave -- let me rephrase the question.

THE COURT: Well, that isn't the question that was asked; is it?

That isn't the answer to the question that was asked. So ask it again.

MR. BROWN: All right.

BY MR. BROWN:

Q. You would agree that polyalkylene glycols may include two and only two hydroxyl units; correct?

A. As that term is used, yes.

Q. As that term is used by you and by others; correct?

A. As I say, I have trouble with the terminology polyalkylene glycols. As I think I showed to at least my satisfaction yesterday, it is a vague term and when it comes right down to it, it is an incorrect term for the class of compounds which people who use it seem to be referring to.

Q. All right. But there are people in this field who use the term polyethylene glycol; correct?

A. By my patent search, maybe two percent.

Q. And among the polyethylene glycols are compounds that contain two and only two hydroxyl units; correct?

- 1 A. Yes.
- 2 Q. Then it follows that the group of polyhydroxy  
3 compounds identified in Claim 4 would include at least  
4 some compounds that contain two and only two hydroxyl  
5 groups; correct?
- 6 A. Well, sir, I think --
- 7 Q. Can you answer that simply yes or no?
- 8 A. I want to explain my answer. I don't agree with  
9 it, and I would like to explain it.
- 10 Q. May I have a yes or no first?
- 11 A. No, I don't agree with it. I gave it your no --
- 12 THE COURT: But that isn't what he asked you.  
13 Ask the question again.
- 14 MR. BROWN: Yes, your Honor.
- 15 BY MR. BROWN:
- 16 Q. Am I correct that the group of polyhydroxy  
17 compounds identified in Claim 4 includes at least some  
18 compounds that contain two and only two hydroxyl groups?
- 19 A. And you're referring to, sir, the -- which terms?
- 20 Q. The polyalkylene glycol term?
- 21 A. As it stands there, yes.
- 22 Q. So it is your construction of the patent claim that  
23 the term polyhydroxy compound includes polyalkylene  
24 glycols, some of which contain two and only two hydroxyl  
25 units; correct?

- 1 than two.
- 2 And then a certain subclass of polyalkylene  
3 glycols would have two. And the rest, I think, are  
4 multiple.
- 5 Q. So would you agree with me that the patent itself  
6 refers to those compounds, that is compounds containing  
7 two and only two hydroxy groups, is as polyhydroxy  
8 compounds?
- 9 A. Well, I would -- no, I would not agree with you,  
10 sir.
- 11 Q. All right, so when you read the word polyhydroxy  
12 compound includes ethylene glycol, you've acknowledged  
13 that ethylene glycol contains two hydroxyl groups;  
14 correct?
- 15 A. May I explain it?
- 16 Q. Yes or no, doctor.
- 17 A. It does contain two hydroxyls.
- 18 Q. And isn't it clear from the specification, the  
19 passage that we've read, that the author is referring to  
20 ethylene glycol as a polyhydroxy compound?
- 21 A. Yes, it is true, but I --
- 22 Q. Dr., thank you.
- 23 A. I would like to explain that.
- 24 Q. If you think that followup is necessary, I'm sure  
25 counsel for GenSci will do so.

- 1 A. No, sir, that is not my construction.
- 2 Q. Let's turn to the specification of '558 patent to  
3 see how the term is used there.
- 4 Did you look at the specification of the '558  
5 patent to see how the term is used?
- 6 A. Yes, sir.
- 7 Q. Let's look at Exhibit 175, column 4, lines 2 to 14.
- 8 A. (The witness complies.)
- 9 Q. Do you see in that passage, Dr. Eisch, reference to  
10 specific polyhydroxy compounds?
- 11 A. Yes, I do.
- 12 Q. That passage lists as series of polyhydroxy  
13 compounds, beginning at about line 2 and extending  
14 through line 14; correct?
- 15 A. Yes, sir.
- 16 Q. Now, can you list for me in that passage those  
17 compounds that would contain two and only two hydroxyl  
18 units?
- 19 A. Yes, I could.
- 20 Q. Would you please do so.
- 21 A. Starting with ethylene glycol, that would have two,  
22 diethylene glycol would have two, triethylene glycol  
23 would have two, propanediol would have two --
- 24 Q. How about erythritol at all?
- 25 A. No, that has four. And the next one also has more

- 1 A. Okay.
- 2 Q. If your definition of polyhydroxy were adopted,  
3 that is, a compound having three or more hydroxyl groups,  
4 can you identify for us, which of the compounds in that  
5 passage would have to be deleted from the patent?
- 6 A. Ethylene glycol, diethylene glycol, triethylene  
7 glycol, one, two propanediol and then the polyethylene  
8 glycols.
- 9 Q. Thank you, Dr. Eisch.
- 10 Now, are you familiar with the term  
11 polysaccharides?
- 12 A. Yes, I am.
- 13 Q. How do you define the term?
- 14 A. Polysaccharide is a union of many monosaccharide  
15 units through the loss of water.
- 16 Q. Can you tell me how many carbon atoms are found in  
17 poly saccharides?
- 18 A. Well, it depends on which units you're talking  
19 about.
- 20 The most common unit in the monosaccharide is  
21 based upon glucose, six carbon atoms.
- 22 Q. And how many units are required for it to be a  
23 polysaccharide?
- 24 A. Well, there's a little, in contradistinction from  
25 other alcohols, for example, we talk about Mono

- 1 saccharides, disaccharides, trisaccharides. One even  
 2 hears tetrasaccharides, and somewhere in there one  
 3 switches over to the general name oligosaccharide, which  
 4 may take you up to ten or twenty units.  
 5 And then beyond that you are into  
 6 polysaccharides.  
 7 Q. So would you agree with me that polysaccharides  
 8 have and always have more than 18 carbons?  
 9 A. Yes, sir.  
 10 Q. Let's turn to Claim 4 of the '558 patent, Exhibit  
 11 175.  
 12 A. (The witness complies.)  
 13 Q. Am I correct that Claim 4 on the '588 patent lists  
 14 certain of the polyhydroxy compounds as carriers?  
 15 A. Yes, sir.  
 16 Q. And among the compounds it lists as carriers are  
 17 polysaccharides; correct?  
 18 A. Yes, sir.  
 19 Q. You've told us that polysaccharides always contain  
 20 more than eighteen carbon atoms; correct?  
 21 A. Yes, sir.  
 22 Q. But you testified that in your view the term  
 23 polyhydroxy is limited to compounds containing two to  
 24 eighteen carbon atoms; correct?  
 25 A. Yes, sir.

- 1 Q. So under your view, the category of polysaccharides  
 2 contained in Claim 4 literally would be stricken from the  
 3 claim?  
 4 A. If it is so construed, that's right.  
 5 Q. Similarly, would you agree that most polyalkylene  
 6 glycols contain more than eighteen carbon atoms?  
 7 A. Yes, sir.  
 8 Q. And if your view were to prevail, most polyalkylene  
 9 glycols covered from Claim 4 would be stricken from the  
 10 claim?  
 11 A. Yes, sir.  
 12 Q. Let's talk about the term liquid for awhile,  
 13 Dr. Eisch.  
 14 You've testified that pluronic in water is a  
 15 gel, not a liquid; is that correct?  
 16 A. Yes, sir.  
 17 Q. Am I correct that during your testimony on the term  
 18 liquid, you did not cite to any technical references that  
 19 contained definitions that supported your construction?  
 20 A. Yes, sir. I did not give any exhibits in support  
 21 of that definition.  
 22 Q. Are you familiar with the term paste?  
 23 A. Yes, sir.  
 24 Q. How do you use the term paste?  
 25 A. I use it if I'm putting things in a picture book.

- 1 Q. Do you normally think of paste as a liquid?  
 2 A. No.  
 3 Q. More viscous than a liquid?  
 4 A. Well, it has a number of things. It's not  
 5 transparent, it is not easily flowable.  
 6 Q. How about -- how does it compare in viscosity to a  
 7 gel?  
 8 A. Well, depends on how firm the paste is. If it were  
 9 very firm and could stand on its own with a little  
 10 quivering like a gel, I guess it would be then a  
 11 comparison. But you can think of paste that don't  
 12 resemble gels closely.  
 13 Q. And puddly more or less viscous than paste?  
 14 A. Is it more viscous?  
 15 Q. More or less.  
 16 A. What do you mean? Well, depends if you get a very  
 17 stiff paste and the puddly, they might be  
 18 indistinguishable. These are vague terms.  
 19 Q. Gel, puddly, paste?  
 20 A. No, gel is not vague term. Puddly and paste that  
 21 you bring up are.  
 22 Q. Well, you do you think of puddly and paste being  
 23 more or less viscous than gel?  
 24 A. It depends on their consistency.  
 25 Q. So it could be -- they could be more viscous than

- 1 gel or they could be less viscous?  
 2 A. Yes.  
 3 Q. You've testified that pluronic in water does not  
 4 flow; correct?  
 5 A. I'm sorry?  
 6 Q. You testified that a pluronic water mixture does  
 7 not flow?  
 8 A. And in so doing, I've always specified a  
 9 temperature at which that did not occur.  
 10 Q. At room temperature?  
 11 A. That's right.  
 12 Q. You concluded that because pluronic and water at  
 13 room temperature does not flow, it's a gel rather than a  
 14 liquid?  
 15 A. Yes, sir.  
 16 Q. Have you looked at what the patent says about the  
 17 term liquid?  
 18 A. Which patent, sir?  
 19 Q. The '558, for example.  
 20 A. Would you direct me to what you want me to look at?  
 21 Q. Well, I'm asking you in general terms in your study  
 22 of the '558 patent, did you focus on the language in  
 23 either the specification or the claims to give you  
 24 guidance as to how to construe the term liquid?  
 25 A. I certainly have examined the term liquid, yes.

- 1 Q. Would you agree that it did not form the basis for  
2 your testimony as to what the term means?  
3 A. I don't understand your question.  
4 Q. Well, you've defined liquid for us. Was that on  
5 the basis of how the patent used the term liquid or how  
6 you and authoritative references used the term liquid?  
7 A. That would be extrinsic evidence. I certainly did  
8 examine how, what information, if any, the patent gave me  
9 about a liquid. But, again, finding that inadequate, I  
10 turned to other sources.  
11 Q. Well, let's see how inadequate it is.  
12 Let's turn to Claim 7 of the '558 patent,  
13 column 7, line 25.  
14 A. (The witness complies.)  
15 Q. Am I correct, Dr. Eisch, that Claim 7 of the '558  
16 patent refers to various kinds of liquid carriers?  
17 A. Yes, sir, you are.  
18 Q. And these carriers in Claim 7 are selected in six  
19 categories?  
20 A. Yes, that's right.  
21 Q. Two of those categories are Roman numeral IV and  
22 Roman numeral V; correct?  
23 A. Yes.  
24 Q. And those two categories of liquid carriers are  
25 flowable solutions or pastes; correct?

- 1 A. Yes, sir.  
2 Q. So one or more of the liquid carriers is a flowable  
3 solution or paste?  
4 A. Yes, sir.  
5 Q. And in your terminology, a paste is more viscous  
6 than a liquid?  
7 A. Yes, sir.  
8 Q. Now, are you aware that the patent, the '558 patent  
9 defines the term flowable?  
10 A. Yes, I am.  
11 Q. And do you recall that it defines the term flowable  
12 as shape sustainable, but readily deformable?  
13 A. Yes.  
14 Q. So a flowable solution, according to the patent, is  
15 something that is shaped sustainable, but readily  
16 deformable; correct?  
17 A. Sir, if I may correct you, it talks about not a  
18 flowable solution, but a flowable composition.  
19 Q. Would you agree that the term flowable is used as  
20 shapes sustainable but readily deformable?  
21 A. Yes, sir.  
22 Q. So in the context of a solution, flowable means  
23 shape sustainable, but readily deformable; correct?  
24 A. No, sir.  
25 Q. I see. But you would at least acknowledge that the

- 1 A. Yes, sir.  
2 Q. So the claim itself has defined liquid to include  
3 flowable solutions or pastes; correct?  
4 A. I don't see that, sir.  
5 Q. The claim sets forth liquid carriers; is that  
6 right?  
7 A. No, it sets forth flowable compositions.  
8 Q. The claim describes carriers as being selected from  
9 a member of the group consisting of liquid polyhydroxies,  
10 liquid polyhydroxy compound esters, liquid solutions of  
11 solid polyhydroxy and liquid solutions of solid  
12 polyhydroxy compound esters; correct?  
13 A. Yes, sir.  
14 Q. Those are all liquids?  
15 A. Yes, but we start with the --  
16 Q. Dr. Eisch, I haven't asked?  
17 A. We start with the flow.  
18 THE COURT: Excuse me.  
19 MR. BROWN: Yes, ma'am.  
20 THE COURT: Go on.  
21 BY MR. BROWN:  
22 Q. Now, the claim proceeds to refer to these carriers,  
23 the carriers identified as liquid carriers, and it  
24 identifies among those carriers flowable solutions or  
25 pastes; correct?

- 1 liquid carrier includes pastes; correct?  
2 A. Yes, sir.  
3 Q. And paste can be more viscous than gels, correct?  
4 A. I said before, it depends on what composition you  
5 have. It could be more or less.  
6 Q. All right. So would you agree that the claim  
7 itself defines liquid to include materials such as  
8 pastes?  
9 A. Yes, sir.  
10 Q. Let's turn to the specification of the '558 patent,  
11 column 3, lines 40 to 45.  
12 A. (The witness complies.)  
13 Q. And do you see there a discussion of liquid  
14 polyhydroxy compounds?  
15 A. Yes, sir.  
16 Q. And does it in that passage refer to liquid  
17 polyhydroxy compounds as flowable liquids?  
18 A. Yes, sir.  
19 Q. Flowable is defined as shaped sustainable, but  
20 readily deformable; correct?  
21 A. That's how you define it in the patent, yes.  
22 Q. And flowable in the patent can range from materials  
23 that are puddies or pastes to materials that are rummy,  
24 correct?  
25 A. Yes, sir.

- 1 Q. So the patent itself defines liquid to constitute a  
2 range of materials that may extend from running materials  
3 to paste-like materials; correct?  
4 A. Yes, sir.  
5 Q. Let's also look at the discussion of liquid  
6 solution of solid polyhydroxy compounds which is found in  
7 the '558 patent at column 4, lines 33 to 38.  
8 A. (The witness complies.)  
9 Q. Perhaps we could extend the window up just a  
10 little.  
11 Now, do you see in that passage, Dr. Eisch,  
12 reference to where the polyhydroxy compound is a solid?  
13 A. Yes, sir.  
14 Q. A solvent such a water may be mixed with it to  
15 provide a, quote, flowable solution or paste, end quote,  
16 of the compound?  
17 A. Yes, sir, I see that.  
18 Q. So again, the patentee has addressed the term  
19 liquid and has referred to or defined the term liquid as  
20 a flowable solution or paste; correct?  
21 A. I'm not sure, sir.  
22 Q. Am I correct that Gensci advocates a definition for  
23 liquid that would exclude a mixture of pluronic in water?  
24 A. For a liquid, sir? No, they do not advocate that.  
25 Q. So is it your testimony that a mixture of pluronic

- 1 A. Yes, sir.  
2 Q. Does Gensci advocate a definition for liquid that  
3 would exclude a mixture of pluronic and water at 4  
4 degrees centigrade?  
5 A. I don't know, sir.  
6 Q. Do you have any idea what the consistency of  
7 pluronic water at 4 degrees centigrade?  
8 A. By my own observation, it looks a lot like glycerol  
9 at room temperature.  
10 Q. Rummy?  
11 A. Well, I wouldn't call it rummy. There's a definite  
12 viscous nature to it.  
13 Q. Readily deformable?  
14 A. If you want to call it that, yes.  
15 Q. Now, your opinion as to the meaning of the term  
16 liquid is based largely on your experience as an academic  
17 chemist?  
18 A. And consultation of technical dictionaries.  
19 Q. Did you offer any of those technical dictionaries  
20 during your testimony?  
21 A. No, sir. I much admit I didn't. I thought it was  
22 such a straightforward term.  
23 Q. And would you agree that your definition of the  
24 term liquid is not based on a survey on how those who  
25 work with bone graft materials day in and day out use the

- 1 in water at room temperature is a liquid?  
2 A. No, it is not.  
3 Q. Right. So then perhaps if I -- you misunderstood  
4 my question or I miss phrased it, but am I correct that  
5 you and Gensci take the position that the term liquid  
6 would exclude from its scope a mixture of pluronic in  
7 water?  
8 A. At room temperature.  
9 Q. All right.  
10 THE COURT: Stop now. We're going to take a  
11 break.  
12 MR. BROWN: Very well, your Honor.  
13 THE COURT: You had best ask that questions  
14 again when we come back.  
15 MR. BROWN: We'll heed the Court's advice,  
16 your Honor.  
17 (Recess.)  
18 THE COURT: Go on.  
19 MR. BROWN: Thank you, your Honor.  
20 I hope I remembered the right question. Let  
21 me try this, Dr. Eisch.  
22 BY MR. BROWN:  
23 Q. Am I correct that you and Gensci advocate a  
24 definition for liquid that would exclude a mixture of  
25 pluronic in water at room temperature?

- 1 term; correct?  
2 A. That's correct, yes.  
3 Q. Am I correct that you don't work with bone graft  
4 materials?  
5 A. That's correct.  
6 Q. Did you attempt to determine whether Gensci, as a  
7 participant in the field of bone graft materials, uses  
8 the term liquid in a way that is consist with its  
9 definition of the term in this litigation?  
10 A. No, I have no knowledge on that.  
11 Q. Well, you mentioned during testimony, Dr. Coleson  
12 and Dr. Clochi; do you recall that?  
13 A. Yes, sir.  
14 Q. Would who's Dr. Coleson?  
15 A. He is, I believe, a director of research for Gensci  
16 and Dr. Camron Clochi, I believe, is an oral surgeon.  
17 Q. Affiliated with Gensci?  
18 A. I think he was at one time had some affiliation. I  
19 don't know if that is ongoing or not.  
20 Q. And is it your understanding go he's the individual  
21 responsible for the pluronic and water mixture?  
22 A. Yes, that's my understanding.  
23 Q. And so you would agree that both Dr. Coolson and  
24 Dr. Clochi work in the field of bone graft materials?  
25 A. Yes, I think that's correct.

1 Q. Now, based on your definition of the term liquid,  
2 you've said that pluronic and water at a room temperature  
3 would not be a liquid; right?

4 A. Yes, sir.

5 Q. But when Dr. Coleson and Dr. Clocki and Gensci  
6 refer to pluronic and water, they refer to it as a  
7 liquid; correct?

8 A. Yes, sir, they do.

9 Q. Let's look at some of those examples. Trial  
10 Exhibit 34.

11 A. (The witness complies.)

12 Q. If we can focus in on the abstract left-hand column  
13 about ten lines down that starts with when dissolved in  
14 water?

15 Do you have that passage in front of you?

16 A. Yes, I do.

17 Q. Would you direct me to which line it is?

18 Q. Yes, it's eight lines down.

19 A. Yes, I have -- when dissolved in water, yes.

20 Q. And it read, quote:

21 "When dissolved in water the poloxamer  
22 demonstrates reverse --

23 I apologize, your Honor

24 THE COURT: That's all right.

25 MR. BROWN: All right, now you and I can read

1 talked about here.

2 Q. All right. But it indicates that poloxamer, which  
3 we know as pluronic in water is a fluid liquid at room  
4 temperature.

5 A. And let's not forget sol. They do call it a sol,  
6 sir.

7 Q. But it uses the term liquid; correct?

8 A. And also the term sol, yes, sir.

9 Q. A fluid liquid sol, but at higher body  
10 temperatures, it's a viscous liquid, but in both cases,  
11 it is a liquid; correct?

12 A. That is the usage here, yes.

13 Q. And that's the usage by those who work in this  
14 field day in and day out; correct?

15 A. Well, this is one instance of it, sir. I have not  
16 the information of the survey of which you speak.

17 Q. So would you agree that Gensci even recognizes that  
18 is gels are liquids?

19 A. If we take these two gentlemen as being of  
20 representative of Gensci, yes.

21 Q. Let's turn to Exhibit 93.

22 A. (The witness complies.)

23 MR. BROWN: Backing up for a minute, your  
24 Honor, I offer Exhibit 34 in evidence.

25 THE COURT: Yes.

1 this.

2 It read, quote:

3 "When dissolved in water the poloxamer  
4 demonstrates reverse thermal behavior, since at low  
5 ambient temperature, it is a fluid liquid, but at  
6 higher body temperatures it forms a viscous liquid  
7 gel." End quote.

8 A. You omitted word sol.

9 Q. You're quite right, and I apologize for that.

10 But other than that, did I read that passage  
11 correctly?

12 A. I got that right, yes.

13 Q. And that passage comes from an article that was  
14 prepared by Drs. Coleson and Clochi of Gensci; correct?

15 A. Yes, sir.

16 Q. And that are in that article talking about the  
17 poloxamer pluronic F127; correct?

18 A. Yes, sir.

19 Q. They're talking about the very material that is  
20 used in their dynagraph product?

21 A. I'm not sure, sir, if they're talking about the  
22 very same concentration. I'm under the impression that  
23 the dynagraph product is 25 percent by weight of pluronic  
24 and water.

25 I don't know what concentrations are being

1 BY MR. BROWN:

2 Q. Now, turning to Exhibit 93, Dr. Eisch, are you  
3 familiar with that patent?

4 A. Yes, I am.

5 Q. That is the 555 -- '558 patent by Camron Clochi?

6 A. Yes.

7 Q. And you understand that that patent is directed to  
8 the use of pluronic in water?

9 A. Yes, sir.

10 Q. Or in this case an application involving dental  
11 implants?

12 A. Yes, sir.

13 Q. And am I correct, Dr. Eisch, that in this patent  
14 Dr. Clochi refers to -- let's see if I can find the  
15 precise language. He says that:

16 "The carrier is a liquid which will gel  
17 at about 37 degrees."

18 A. Could you show that to me, please.

19 Q. I will try to do so, Dr. Eisch. I apologize for  
20 the quality of this copy.

21 If we look -- this isn't precisely the  
22 passage, but if we look at column 2, line 18.

23 A. Can you blow that up? Okay.

24 Q. I'm sorry, that's not -- that's not the right  
25 passage.



1 MR. BROWN: May I have a moment, your Honor?  
 2 THE COURT: Yes, certainly.  
 3 (Pause in the proceedings.)  
 4 MR. BROWN: Thanks to my able assistant, we  
 5 found it.  
 6 We'll look at the abstract, which appears on  
 7 the cover page of the patent. Now, that's not it.  
 8 All right. Well, I won't take any further  
 9 time with this exhibit.  
 10 BY MR. BROWN:  
 11 Q. Could you please turn to Exhibit 517, page 6, lines  
 12 23 to 32.  
 13 Well, first of all, do you recognize Exhibit  
 14 517, Dr. Eisch?  
 15 A. Yes, I do.  
 16 Q. And do you recognize that as an European patent  
 17 application filed by Gensci?  
 18 A. Yes, sir.  
 19 Q. With Dr. Clochi as the inventor?  
 20 A. Yes, sir.  
 21 Q. And do you understand that patent is directed to an  
 22 invention that includes within its scope the products die  
 23 graph products?  
 24 A. Yes.  
 25 Q. Now, this passage reads, quote:

1 "In proffered embodiments of a  
 2 composition of a present invention, the carrier is a  
 3 liquid diluted in a solvent or a solid dissolved in  
 4 a solvent --  
 5 Now, that's not the passage either. We're on  
 6 the wrong page, it's page 40, lines 19 through 15.  
 7 THE COURT: Now, let me see what we're doing  
 8 here. This is? This is?  
 9 MR. BROWN: We're focusing on a patent  
 10 application file by Gensci with Dr. Clochi as the  
 11 inventor directed to the dynagraph product.  
 12 Q. And on page 4 of that document do you see a  
 13 description of that's called preferred modes?  
 14 A. Yes, sir.  
 15 Q. And it says when referring -- when describing the  
 16 dynagraph product, that the composition of the present  
 17 invention is a flowable liquid when applied it a bony  
 18 defect.  
 19 Do you see that language?  
 20 A. Yes, sir, I do.  
 21 MS. WAACK: We have an objection to this  
 22 document for lack of foundation.  
 23 THE COURT: This is?  
 24 MR. BROWN: The witness has identified it as  
 25 an European patent application.

1 THE COURT: Yes, he has. Has seen he ever  
 2 seen it before?  
 3 BY MR. BROWN:  
 4 Q. Have you ever seen it before, Dr. Eisch?  
 5 A. Yes, sir, I have.  
 6 THE COURT: And you studied it?  
 7 THE WITNESS: Yes, ma'am.  
 8 THE COURT: All right, go on.  
 9 MS. WAACK: Excuse me, the foundation  
 10 objection is directed to whether or not that represents  
 11 the accused patent, the dynagraph product. He hasn't  
 12 established that.  
 13 MR. BROWN: He's testify that it does.  
 14 THE COURT: He did, didn't he?  
 15 THE WITNESS: I'm sorry, I certainly did not  
 16 yet from this document say that it's clear to me from the  
 17 reading of it that we're talking about the dynagraph  
 18 product.  
 19 Could you direct me to a passage in this  
 20 document that would make that clear?  
 21 THE COURT: Just ask him the question.  
 22 BY MR. BROWN:  
 23 Q. Is the preferred embodiment the dynagraph product?  
 24 A. I don't know.  
 25 Q. Do you recall that this patent describes dynagraph?

1 A. (No response.)  
 2 Q. I'm sorry, doctor --  
 3 A. Oh, I'm sorry, was that question?  
 4 Q. Yes.  
 5 THE COURT: Yes, it was.  
 6 THE WITNESS: I'm sorry, ask it again.  
 7 BY MR. BROWN:  
 8 Q. Do you recall that this patent is directed to  
 9 dynagraph?  
 10 A. It's directed to that kind of product, but whether  
 11 this is the dynagraph product, I don't recollect.  
 12 Q. All right. Let's turn to page 9, column -- about  
 13 column 20 to 25. I'm sorry, lines 15 to 25.  
 14 A. (The witness complies.)  
 15 Q. And do you see at line 20 the statement, quote, a  
 16 competition of the invention is available as dynagraph  
 17 gel?  
 18 A. Yes, sir, I see that.  
 19 THE COURT: Go on.  
 20 BY MR. BROWN:  
 21 Q. And it says that the composition has a gel  
 22 consistency, correct?  
 23 A. Yes, sir.  
 24 Q. And this is described as one of the preferred  
 25 embodiments?

1 A. Yes, sir.  
 2 Q. And the preferred embodiments refer to a  
 3 composition that is a flowable liquid when applied to a  
 4 bony defect; correct?  
 5 A. Yes, sir.  
 6 Q. Before this -- let's move to trial Exhibit 106.  
 7 To page -- well, backing up, I'm sorry.  
 8 MR. BROWN: The last exhibit was 517. We  
 9 would offer that in evidence at this time.  
 10 MS. WAACK: We have an objection about that --  
 11 THE COURT: Pardon me?  
 12 MS. WAACK: We have an objection to moving  
 13 that document into evidence.  
 14 THE COURT: What is it?  
 15 MS. WAACK: Lack of foundation.  
 16 MR. BROWN: It's the European PCT patent  
 17 application filed by GenSci with Dr. Clochi as the  
 18 inventor.  
 19 THE COURT: Have you ever seen this before?  
 20 THE WITNESS: Yes, your Honor.  
 21 THE COURT: And you studied it?  
 22 THE WITNESS: Yes, your Honor.  
 23 THE COURT: Go on.  
 24 BY MR. BROWN:  
 25 Q. All right, turning to Exhibit 106, page -- well,

1 Q. And have you seen this document before?  
 2 A. Yes, I have.  
 3 Q. And, in fact, this is one of the documents that you  
 4 alluded to before when you acknowledged that Drs. Clochi  
 5 and Paulson used the term liquid when referring to a  
 6 pluronic and water solution?  
 7 A. I would like to correct you, sir. I used it in  
 8 referring to the word solution.  
 9 Q. Oh, so in your testimony you did not acknowledge  
 10 that they used the term liquid?  
 11 A. Not to my recollection, that's right.  
 12 Q. All right.  
 13 Q. Well, based on the documents we've seen so far,  
 14 Exhibit 517, Exhibit 93, Exhibit 34, would you agree that  
 15 doctors Clochi and Paulson would describe a gel as a  
 16 liquid?  
 17 A. You'll have to refresh me on the context. Did they  
 18 use it in connection with liquid solution? Or did they  
 19 use it freestanding? I don't recollect.  
 20 Q. All right, we've covered those exhibits. Let's try  
 21 to move on to -- all right, we're focusing on Exhibit 106  
 22 on page 5 and on the second paragraph.  
 23 **And in the context of discussing pluronic F127**  
 24 **if water, do you see in the last sentence Drs. Clochi and**  
 25 **Paulson say:**

1 first, can you identify Exhibit 106?  
 2 A. Is that what's on the screen now.  
 3 Q. That's the first page of it.  
 4 Do you recall having seen an article or  
 5 document prepared --  
 6 A. Could you show me -- is this the first -- doesn't  
 7 give the authors here or anything, so I have trouble with  
 8 it.  
 9 Q. That's fair enough. I was just about to describe  
 10 the document. It appears to have been prepared by  
 11 doctors Clochi and Coldson. Let's go to page 6, which I  
 12 believe identifies the authors, and focus in on the  
 13 bottom of the page.  
 14 A. (The witness complies.)  
 15 Yes, I see that.  
 16 Q. So does that indicate to you that this article was  
 17 prepared by Drs. Clochi and Paulson?  
 18 A. Yes.  
 19 Q. And this document is directed to the use of  
 20 pluronic F127 as a medium to demineralized bone  
 21 particles; correct?  
 22 A. Are you reading that from somewhere, sir?  
 23 Q. The title, let's go back to page 1.  
 24 A. Yes, I see the title, and that does agree with your  
 25 reading.

1 **"Thus a mixture can be prepared which**  
 2 **will be a liquid or flowable gel at ambient or room**  
 3 **temperature in a solid or rigid gell like body**  
 4 **temperature."**  
 5 A. Yes, I see that, sir.  
 6 Q. And they define ambient or room temperature as 15  
 7 to 25 degrees?  
 8 A. Yes, sir.  
 9 Q. So they would acknowledge that pluronic in water at  
 10 room temperature is a liquid or flowable; correct?  
 11 A. According to this statement, yes.  
 12 Q. Now, before this litigation, were you familiar with  
 13 the literature on bone graft materials?  
 14 A. No, sir, not at all.  
 15 Q. Were you familiar with the patents in the art of  
 16 bone graft materials made from demineralized bone --  
 17 A. No, I had no occasion to.  
 18 Q. Before this litigation, had you ever seen the '558  
 19 or '655 patent?  
 20 A. No, I had not.  
 21 Q. As between you and Drs. Clochi and Paulson, would  
 22 you agree that they are closer to the typical person  
 23 reading the '558 patent and the '655 patent than you?  
 24 A. Yes, I would.  
 25 Q. So in terms of how a person of ordinary skill in

- 1 the art would read this patent, you would defer to them; correct?
- 2 A. Well, ordinary skill in the art insofar as I
- 3 wouldn't put in on simply bone material, but certainly
- 4 polymer chemistry and general chemistry enters into the
- 5 material embodied in these patents. And so I think a
- 6 person of ordinary skill in the art in chemistry,
- 7 including polymer chemistry would certainly have
- 8 something to say about how these terms are to be used.
- 9 Q. But Drs. Clochi and Coleson clearly considered gels
- 10 to be liquids at room temperature; correct?
- 11 A. That's what it says here, yes.
- 12 Q. So are you suggesting that they're not persons of
- 13 ordinary skill in the art?
- 14 A. Not in an ordinary skill in the art of chemistry,
- 15 in polymers chemistry, sir.
- 16 Q. Even though they are the ones who are making the
- 17 product; correct?
- 18 A. That's right, sir.
- 19 Q. Let's turn to the term solution.
- 20 As with liquid, your definition of a term
- 21 solution is based on your experience?
- 22 A. And textbook knowledge thereof such as the
- 23 textbooks in physical chemistry which were cited earlier
- 24 in my testimony.
- 25

- 1 and Gensci have defined it, excludes pluronics in water?
- 2 A. Yes, sir.
- 3 Q. Let's see if your definition and Gensci's is
- 4 consistent with Gensci's own usage of the term as a
- 5 participant in the field of bone graft materials. Let's
- 6 turn to Trial Exhibit 410.
- 7 Have you seen Exhibit 410 before, Dr. Eisch?
- 8 A. Yes, sir.
- 9 Q. Do you understand that it is what's called an SOP
- 10 or a standard operating procedure at Gensci?
- 11 A. Yes, I understand that.
- 12 Q. And that standard operating procedure is used in
- 13 this case to -- for the production of dynagraph gel and
- 14 pudgy?
- 15 A. Yes, sir.
- 16 Q. So this is a document that would evidence how
- 17 Gensci uses the term solution, if, in fact, that term is
- 18 found in the document; correct?
- 19 Yes, sir, to a certain audience.
- 20 Let's turn to paragraph 4 of Exhibit 410.
- 21 And am I correct that in paragraph four Gensci
- 22 describes a GPX solution and then defines that GPX
- 23 solution as a, quote:
- 24 "Solution containing a mixture of
- 25 pluronic F127 and sterile water for irrigation or

- 1 Q. You don't rely at all in language in the patent to
- 2 construe the term solution; do you?
- 3 A. One certainly takes that into account.
- 4 Q. During your testimony, did you indicate in what
- 5 way, if at all, you relied on the language in the patent
- 6 to construe the term solution?
- 7 A. I said that I took the use of the word solution in
- 8 its ordinary technical sense, and hence I thought it
- 9 based upon what would be in a physical chemistry
- 10 textbook.
- 11 Q. So in other words, you did not rely on the patent
- 12 to give you any guidance as to how to construe the term
- 13 solution; correct?
- 14 A. No, that's not correct.
- 15 Q. Does your opinion on the term solution take into
- 16 account how those who work in the field of bone graft
- 17 materials use the term solution?
- 18 A. No, it does not.
- 19 Q. And you and Gensci advocate a definition for the
- 20 term solution that would exclude a mixture of pluronic in
- 21 water; is that correct?
- 22 A. It would make a distinction from them, clearly,
- 23 based upon known principles of solution and colloid
- 24 chemistry, yes, sir.
- 25 Q. Is it your position that the term solution, as you

- 1 equipment." End quote.
- 2 Correct?
- 3 A. Yes, sir.
- 4 Q. So am I correct that Gensci in this document has
- 5 ascribed or given the meaning -- has given the term
- 6 solution a meaning that would include within its scope a
- 7 mixture of pluronic in water?
- 8 A. Yes, sir, to the limited audience for which it was
- 9 meant.
- 10 Q. And that limited audience is those people actively
- 11 engaged in the practice of making bone graft materials
- 12 for the industry; correct?
- 13 A. No, sir, it is the technicians with high school
- 14 educations who are carrying out a procedure.
- 15 MR. BROWN: We offer at this time Exhibit 410
- 16 in evidence, your Honor.
- 17 THE COURT: Yes.
- 18 BY MR. BROWN:
- 19 Q. Let's turn to trial Exhibit 25?
- 20 A. (The witness complies.)
- 21 Q. Do you recognize Trial Exhibit 25, Dr. Eisch?
- 22 A. Yes, I do.
- 23 Q. This is a page out of Dr. Poleson's notebook?
- 24 A. Yes, sir.
- 25 Q. And am I correct -- well, let's focus in on the top

1 of the page.

2 And you clearly had read this passage before  
3 you gave testimony yesterday, right?

4 A. Yes, sir.

5 Q. And that was what prompted you to say that the --  
6 that the individuals such as doctors Coleson and Clochi  
7 used the term solution in a way with which you don't  
8 agree; correct?

9 A. I said they use it in a man-on-the-street way as a  
10 shorthand, instead of going and writing out the whole  
11 phrase, colloidal suspension or dispersion.

12 Q. So Dr. Coleson, the man, the proverbial man on the  
13 street, has referred to a lot of PLF127 as a solution in  
14 that passage; correct?

15 A. Yes, sir.

16 Q. And PLF127 refers to pluronic 127; correct?

17 A. Yes, sir, I think so.

18 Q. Now, Dr. Coleson isn't a lab technician; is he?

19 A. Well, when it comes to the chemical background, he  
20 might be on that level, yes.

21 He's really, I understand, a biologist, and in  
22 that level, he's not the man on the street. But when  
23 he's talking chemical language, he might appear like a  
24 man on the street.

25 Q. So are you suggesting that the people who read the

1 Q. We're not on the right page. I apologize, let's  
2 see if we can find it -- page 2.

3 And at page two, line 5, let's focus in.

4 All right, backing up for a minute, you  
5 understand that this is a standard operating procedure  
6 for Gensci?

7 A. Yes, sir, I do.

8 Q. And it's prepared for the purpose of producing the  
9 product dynagraph gel and puddy?

10 A. Yes, I do.

11 Q. So this is the way that the people actively  
12 involved in making the product use the term such as  
13 solution; correct?

14 A. Right, the technician, yes, sir.

15 Q. And in this case, in line 5 it says, quote:

16 "Keep solution at one to ten degrees  
17 centigrade. Disregard GPX solution if it turns  
18 cloudy or is passed expiration date," end quote.  
19 Correct?

20 A. Yes, sir.

21 Q. And so we have another example where Gensci is  
22 using the term solution to describe pluronic in water --

23 A. Right, for audience of technicians.

24 Q. You referred earlier in your testimony to starch in  
25 water as a solution; do you recall that?

1 patents directed to bone graft materials must approach  
2 them with a Ph.D. in order to give proper meaning to the  
3 terms used in the patent?

4 A. Well, they must approach him with ordinary skill in  
5 the art; must they not?

6 Q. And you don't think that Dr. Coleson has ordinary  
7 skill in the art when he uses the term solution?

8 A. He has more than ordinary skill in the art when it  
9 comes to bone preparation. But when we're talking about  
10 the chemical aspects of his background, he might not be  
11 one of ordinary skill in the art.

12 Q. We'll see what Dr. Coleson has to say about that  
13 later.

14 Let's refer to --

15 MR. BROWN: I'm sorry, did I offer Exhibit 25  
16 in evidence?

17 I do so at this time, your Honor?

18 THE COURT: These may come in.

19 BY MR. BROWN:

20 Q. Please turn to Trial Exhibit 23.

21 Do you realize trial Exhibit 23?

22 A. Yes, sir.

23 Q. And am I correct that Exhibit 23 is another --  
24 well, that appears to be --

25 A. We've seen this before; have we not?

1 A. I said in common parlance, starch, it's called a  
2 starch solution, but in actuality, it's really an  
3 colloidal dispersion.

4 Q. Starch with a polysaccharide; correct?

5 A. Oh, yes, sir.

6 Q. So starch in water is an example of a  
7 polysaccharide in water that is called a solution;  
8 correct?

9 A. You misquote me. I said it's called an colloidal  
10 dispersion in technical language.

11 The man on the street might call it a solution  
12 but only the man or woman on the street.

13 Q. And someone such a Dr. Coleson?

14 A. I don't know what he calls it. I had no occasion  
15 to see what he calls it.

16 Q. Would you acknowledge that it's common even in  
17 technical publications to refer to polysaccharides in  
18 water as solutions?

19 A. In what kind of publications, sir?

20 Q. Technical publications.

21 A. Only in rather loosely written technical -- you  
22 would never find that, for example, in articles to be  
23 published in the Journal of the American Chemical Society  
24 or in Journal of Organic Chemistry or in Journal of  
25 Physical Chemistry, to name just a few. Because that

1 kind of language would be caught by the referee system  
2 and would not be permanented to emerge in print.

3 Q. Are you familiar with a treatise called the  
4 foundations of colloid science?

5 A. Yes, I believe that's one of those.

6 Q. And Dr. Hunter is the primary author of that  
7 publication?

8 A. Yes, sir.

9 Q. And, in fact, isn't that one of the exhibits that  
10 you selected for this hearing?

11 A. Yes, sir.

12 Q. Would you please turn to Exhibit 1549, tab X, in  
13 Gensci's notebook.

14 A. Oh, I'm sorry, yes, I do. Which tab was that, I'm  
15 sorry?

16 THE COURT: 1549.

17 MR. BROWN: X.

18 THE WITNESS: X.

19 MR. BROWN: Your Honor, do you have a copy?

20 THE COURT: No.

21 MR. BROWN: May I hand the Court.

22 We do not have the visual on that, your Honor,  
23 because it has a Gensci exhibit.

24 THE COURT: I have the book right now.

25 MR. BROWN: Let me see if I can proceed

1 MR. BROWN: For the middle of the page it  
2 reads, quote:

3 "There are of course some molecules that  
4 are individually larger than one nanometer in size.  
5 These macro molecules can often be uniformly  
6 dispersed through a fluid medium, and they then form  
7 a colloidal solution or dispersion. Proteins,  
8 polysaccharides, like in starge and many synthetic  
9 polymers fall into this category," end quote.

10 BY MR. BROWN:

11 Q. So here's an example, Dr. Eisch, of the learned  
12 treatise that refers to starch in water as a solution;  
13 correct?

14 A. Oh, you forget the adjective colloidal that must  
15 modify it.

16 Q. So you're saying that colloidal must always be used  
17 in conjunction when referring to a starch solution?

18 A. I'm saying that that's what is done here.

19 Obviously, the editor of a treatise is not  
20 going to get caught in sloppy language. He does not call  
21 it simply a solution. He calls it a colloidal solution,  
22 and then to be more correct in accordance with, he then  
23 says in place of a solution, we will be reading  
24 dispersion. So he's really talking about a starch in  
25 water as being a colloidal dispersion.

1 with - no.

2 BY MR. BROWN:

3 Q. Would you please turn to page 441 of that exhibit,  
4 Dr. Eisch.

5 A. Yes, sir, I have it.

6 Q. And toward the middle of the page do you see the  
7 paragraph that starts with the words "There are of course  
8 some molecules..."

9 A. Yes, sir.

10 Q. Allow me to quote that paragraph. It reads, quote:

11 "There are, of course, some molecules  
12 that are individually larger than one manometer in  
13 size. These macro molecules are often be uniformly  
14 dispersed through a fluid medium. And they then  
15 form an colloidal solution or dispersion, proteins,  
16 polysaccharides, like starch, and many polymers fall  
17 into that category. End quote.

18 Did I read that passage correctly?

19 A. Yes, sir, you got it right.

20 Q. It's Exhibit 1549, tab X.

21 MR. CODDING: What was what name. Page 441 of  
22 diversion of this exhibit we were initially given as  
23 Exhibit 68 to the Grant declaration.

24 It should be the third page of the exhibit.

25 THE COURT: Quote it again, please.

1 Q. Well, isn't it quite common to hear people describe  
2 colloidal dispersions a solutions?

3 A. Not in correct speech.

4 Q. I'm not talking about correct speech, Dr. Eisch.

5 I'm talking about whether it's common for  
6 people who work with chemicals. Whether they be bench  
7 people or Ph.D.'s, don't they in every day language refer  
8 to many colloidal dispersions as simply solutions?

9 A. Well, if you're in a position of such a survey,  
10 sir, I'd like to share it with you.

11 I would say that careful language in  
12 scientific discussions uses proper terminology. There's  
13 always a jargon or casual reference that could occur in  
14 discussions. But in formal discussions and in writing  
15 one uses proper terminology.

16 Q. Is pluronic in water a colloidal dispersion?

17 A. Yes, sir.

18 Q. Isn't it common to refer to pluronic in water as a  
19 solution?

20 A. I would like to have the survey results on that.

21 Q. Do you have any knowledge of whether it is common  
22 to refer to pluronic in water as a solution?

23 A. I have no results of a survey that I've taken to  
24 offer into evidence.

25 Q. Well, let's look at one of the exhibits that you

1 did select for this hearing. It's Trial Exhibit 1666 at  
 2 tab CC.  
 3 A. (The witness complied.)  
 4 Q. Do you have that in front of you, Dr. Eisch?  
 5 A. Yes, sir, I do.  
 6 MR. BROWN: Does the Court have that exhibit,  
 7 your Honor?  
 8 THE COURT: Yes, I do. Where are we looking?  
 9 MR. BROWN: Let's look at page 2, the first  
 10 column under experimental section.  
 11 BY MR. BROWN:  
 12 Q. And do you see the language, quote:  
 13 "Commercial samples of ethyleneoxide  
 14 slash propylene oxide, block copolymers available  
 15 from BASF Corporation under the registered trademark  
 16 pluronic were used without further purification."  
 17 A. Yes, sir.  
 18 Q. End quote. So what they're talking about here is  
 19 pluronic in a solvent; correct?  
 20 A. Yes, sir.  
 21 Q. And if we go to the next column, column 2 on  
 22 page 2, we see in the second, the first full paragraph, a  
 23 reference to, quote, stock solutions of EO slash PO,  
 24 block copolymers in water were prepared in aliquant of  
 25 these solutions were added to the Q vat, end quote.

1 A. Yes, sir. He could do so, because pluronics will  
 2 form solutions under certain concentrations and under  
 3 certain conditions.  
 4 Q. And, in fact, he refers to dissolving pluronic in  
 5 solution on page --  
 6 A. Have you directed me to that?  
 7 Q. I am in the process of doing so.  
 8 THE COURT: He's doing that now.  
 9 MR. BROWN: Page 4, I'm sorry -- it's two more  
 10 pages, bottom of the right-hand column.  
 11 BY MR. BROWN:  
 12 Q. Do you see he refers to the fact that all  
 13 ingredients are dissolved and in solution?  
 14 A. Yes, sir.  
 15 Q. Are you -- backing up to the cover page of  
 16 deposition -- I'm sorry, its Exhibit 36.  
 17 Backing up to the cover page of Exhibit 36, is  
 18 this an article that you have seen before, Dr. Eisch?  
 19 A. Yes, I have.  
 20 Q. And you understand that it was written by  
 21 Dr. Smulka?  
 22 A. Yes, it's so written.  
 23 MR. BROWN: We offer Exhibit 36 in evidence,  
 24 your Honor.  
 25 THE COURT: Yes.

1 Do you see that?  
 2 A. Yes, sir, I do.  
 3 Q. So this is a scientific publications. It's the  
 4 Journal of Physical Chemistry, which you would recognize  
 5 as a distinguished publications?  
 6 A. Yes, sir.  
 7 Q. And in this publications by these scientists who  
 8 also happen to be associated with BASF, the founder of  
 9 pluronic, they refer to pluronic in water as simply a  
 10 solution; correct?  
 11 A. Yes, sir. May I add to that?  
 12 Q. If your counsel thinks it's necessary to followup,  
 13 you're free to do so.  
 14 Now, do you know -- are you familiar with or  
 15 aware of Dr. Irving Smulka?  
 16 A. I'm aware of the name of several publications that  
 17 have been produced in this matter.  
 18 Q. Now, do you understand that Dr. Smulka was one of  
 19 the pioneers in the development of pluronics?  
 20 A. Yes, sir, I do.  
 21 Q. And Dr. Smulka has written extensively on the use  
 22 of pluronics; correct?  
 23 A. Yes, sir.  
 24 Q. Are you aware that Dr. Smulka refers to dissolving  
 25 pluronic in water as a solvent?

1 MR. BROWN: At this time we also offer  
 2 exhibit -- Exhibit 23 in evidence. It was the standard  
 3 operating procedure.  
 4 THE COURT: Yes.  
 5 BY MR. BROWN:  
 6 Q. Now, yesterday you refer to Hawley's chemical  
 7 dictionary?  
 8 A. Yes, sir.  
 9 Q. And did you happen to, when you were preparing your  
 10 testimony on the terms solution, look in Hawley's to see  
 11 whether Hawley's had a definition?  
 12 A. No, I did not.  
 13 MR. BROWN: May I approach the witness, your  
 14 Honor?  
 15 THE COURT: Yes.  
 16 BY MR. BROWN:  
 17 Q. Dr. Eisch, I'm handing you Hawley's condensed  
 18 chemical dictionary, 13th edition.  
 19 A. What year?  
 20 Q. From 1997.  
 21 A. Okay.  
 22 Q. Is that sufficiently current?  
 23 A. Sounds fairly current.  
 24 Q. All right. And you'll see on page --  
 25 MS. WAACK: Objection to this document, no

1 foundation. The witness just testified he hasn't seen in  
before. And we haven't been provided a copy.

3 THE COURT: You'll have to ask him some  
4 foundational questions.

5 BY MR. BROWN:

6 Q. Well, I think you testified yesterday, Dr. Eisch,  
7 that you recognized Hawley's as one of references that  
8 you would refer to in formulating or construing terms of  
9 art, is that --

10 A. Terms of chemical nature.

11 Q. Terms of a chemical nature?

12 A. Right.

13 Q. Right. So you have used this treatise before?

14 A. That's right. I just would add, of course, that  
15 the term solution is not of a chemical nature. It's of a  
16 physical nature.

17 Q. Well, with that qualification, you've used the book  
18 before; haven't you?

19 A. Sure.

20 Q. And you used it, in fact, in part as a basis for  
21 your testimony on the polyhydroxy?

22 A. That's correct.

23 MR. BROWN: May I hand it to the witness?

24 THE COURT: Show it -- do you want to see it?  
25 Well, you look at it, and we'll stop now.

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UNITED STATES OF AMERICA  
UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA  
WESTERN DIVISION

- - -  
HONORABLE MARIANA R. PFAELZER  
UNITED STATES DISTRICT JUDGE PRESIDING  
- - -

GENSCI ORTHOBIOLOGICS, INC., )  
 )  
Plaintiff (s), )  
vs. ) CV 99-10111-MRP  
 )  
OSTEOTECH, INC., )  
 )  
Defendant (s). )  
\_\_\_\_\_ )

REPORTER'S TRANSCRIPT OF PROCEEDINGS

WEDNESDAY, OCTOBER 25, 2000

LOS ANGELES, CALIFORNIA

MARKMAN HEARING-DAY 2

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I N D E X P A G E

WITNESSES

PAGE

JOHN EISCH

Cross-examination (cont'g) by Mr. Brown	4
Redirect examination by Ms. Consalvi	35

A F T E R N O O N S E S S I O N

(COURT IN SESSION at 1:00 p.m.)

THE COURT: Will the witness take his seat.

MR. BROWN: May I'm take care of some housekeeping matters?

THE COURT: Yes.

MR. BROWN: I'd like to offer some documents in evidence that I overlooked. First is Exhibit 175, the '558 Patent. Second is Exhibit 319 which is the excerpt from The Dictionary of Biochemistry and Molecularbioloby.

The third is the Websters Ninth New Collegiate Dictionary, Exhibit 321. The fourth is the Clokie 5,503,558 Patent which was marked as Exhibit 93.

THE COURT: I don't remember that. What is that?

MR. BROWN: That is the Patent by Cameron Clokie directed to pluronic in water mixture.

THE COURT: Yes.

MR. BROWN: And the last is Exhibit 106 which is an article prepared by the Drs. Clokie and Coulson entitled Justification for the use of Poloxamer 407.

THE COURT: Yes.

MR. BROWN: I've placed up on the Bench, your Honor, a copy of Exhibit 719 and provided the witness with one as well.

THE COURT: Condensed to the Hawley's?

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1 MR. BROWN: Yes, it is.

2 BY MR. BROWN:

3 Q. Have you had an opportunity to -- let's bring up  
4 Exhibit 710. And turn to the colloidal solution page and  
5 highlight that passage.

6 Do you see page 1034 of Hawley's Chemical Condensed  
7 Dictionary reference to colloidal solutions?

8 A. Solutions Colloidal, yes, sir.

9 Q. Right.

10 And that's interesting. It's under the term solution  
11 followed by the term, Colloidal, correct?

12 A. That's correct.

13 Q. And then immediately beneath that definition, there's  
14 another reference to solution, but followed by the term,  
15 true, correct?

16 A. Yes, sir.

17 Q. So Hawley's is referring to both of these as solutions,  
18 true solutions and Colloidal solutions, correct?

19 A. Yes.

20 But I suggest that the text of the definitions be  
21 read through.

22 Q. All right. Let's do that.

23 Colloidal Solution.

24 Quote: A liquid Colloidal dispersion is often called  
25 a solution since Colloidal particles are larger than

1 1 molecules, it is strictly incorrect to call such dispersions  
2 solutions, however, this term is widely used in the  
3 literature, end quote.

4 Did I read that correctly?

5 A. Yes, sir.

6 Q. And would you agree with Hawley's statement that that  
7 term solution is widely used in the literature to refer to  
8 Colloidal dispersions?

9 A. I have no direct knowledge of that, sir.

10 Q. Now, this morning, you testified that polysaccharides  
11 have more than 18 carbons in them, correct?

12 A. Yes, sir.

13 Q. Are most polysaccharides at room temperature solids?

14 A. Yes, sir. Invariably.

15 Q. And would it also be true that those polysaccharide  
16 solids, when placed in water, would form a Colloidal  
17 dispersion?

18 A. Most would, yes, sir.

19 Q. All right.

20 Let's turn back to claim four of the '558 Patent.

21 And again, Claim Four refers to various liquid  
22 carriers, correct?

23 A. Yes, sir.

24 Q. And among the liquid carriers within the scope of the  
25 claim are polysaccharides, correct?

1

1 A. Yes, sir.

2 But I don't see the phrase, liquid carriers, as such.  
3 I see liquid solutions or liquids. I don't see liquid  
4 carriers.

5 Q. Well, the preface to the Wherein clause refers --  
6 reads: ...the carrier being selected from a member of the  
7 group consisting of liquid polyhydroxy compound, liquid  
8 polyhydroxy compound ester, liquid solution of solid  
9 polyhydroxy compound, and liquid solution of solid  
10 polyhydroxy compound esters and mixtures thereof.

11 Right?

12 A. Yes, sir.

13 Q. All right.

14 And we've established that polysaccharides at room  
15 temperature are typically solids, correct?

16 A. Yes, sir.

17 Q. So if one were to use a polysaccharide within the scope  
18 of claim four, it would be in the form of a liquid solution  
19 of a solid polyhydroxy, correct?

20 A. No, sir.

21 Q. Claim four specifically recites examples of  
22 polysaccharides as being carriers, correct?

23 A. Yes, sir.

24 Q. If polysaccharides are carriers, and polysaccharides  
25 are solids at room temperature, and carriers are liquids,

1           1       the only way a polysaccharide can be a carrier is if it  
2           2       dissolved in water, correct?

3           3       A.    No, sir.

4           4       I -- I differ with your use of dissolved.

5           5       Q.    Would you agree that a polysaccharide in water is not a  
6           6       liquid polyhydroxy compound?

7           7       A.    Say that again, sir.

8           8       Q.    Would you agree that a polysaccharide dissolved in  
9           9       water is not a liquid polyhydroxy compound?

10          10       A.    You mean the resulting composition?

11          11       Q.    Right?

12          12       A.    Well, the resulting composition we, I guess, have  
13          13       agreed is a liquid.

14          14       Q.    It's your position that as this claims reads, there's  
15          15       no way that one can use a polysaccharide as a liquid  
16          16       carrier; isn't that the bottom line?

17          17       A.    Yes, sir.

18          18       Q.    All right.

19                 19       Let's look at the '176 Patent.

20                 20       And backing up, that's your position even though  
21          21       polysaccharides uniformly have more in than 18 carbons,  
22          22       correct?

23          23       A.    Yes, sir.

24          24       Q.    Let's go to Exhibit 176, column seven, line 60 to 68.

25                 25       What is dextran?

1 A. It's a polysaccharin.

2 Q. And it's a solid at room temperature?

3 A. Yes, sir.

4 Q. So in examples four and five, the Patentee is  
5 describing a dextran solution; is that correct?

6 A. Would you put on, also, the top of the next column  
7 which gives the composition and for the first time mentions  
8 that water is involved here.

9 Q. Sure.

10 A. Now, again your question was. . .

11 Q. Is this passage referring to dextran in water?

12 A. Dextran with water, yes, sir

13 Q. Right.

14 And we know that dextran alone is a solid?

15 A. Yes, sir.

16 Q. So this use of dextran in water is an example --

17 A. With water, sir.

18 Q. It's In water, right?

19 THE COURT: No. He said with water.

20 BY MR. BROWN:

21 Q. It's mixed with water, isn't it?

22 A. Yes.

23 But I would agree that what you get is dextran with  
24 water. When you say, in water, that somehow implies that it  
25 is in solution.



2

1 Q. All right. It's dextran mixed with water?

2 A. Yes, sir. We can agree n that.

3 Q. And the patentee has chosen to give an as an example of  
4 his invention a mixture of dextran in -- with water used  
5 with demineralized bone powder, correct?

6 A. Yes, sir.

7 Q. But you would take the position that dextran with water  
8 is not a liquid solution of a solid polyhydroxy compound?

9 A. Yes, sir, I would take that position.

10 Q. So it's your position that examples four and five of  
11 the '655 Patent are examples that don't fall within the  
12 scope of the patent, correct?

13 A. That's correct, the way I read or construe the patent.

14 Q. So you think the patentee chose to give an example that  
15 isn't within the scope of the claims because of the way the  
16 term solution is defined, correct?

17 MS. CONSALVI: Objection; foundation.

18 Are you referring to the pending claims as filed?

19 MR. BROWN: I withdraw the question.

20 BY MR. BROWN:

21 Q. Let's turn to acyclic polyhydric alcohols, Dr. Eisch.

22 We're making progress. Maybe not as quickly as I had  
23 intended and I apologize for that.

24 In your testimony, I think you said, and I'm sure  
25 you'll correct me if I'm wrong, that polyhydric alcohol is

2

1 equivalent to polyhydroxy?

2 A. Yes, sir.

3 Q. Would you agree that the term polyol also is synonymous  
4 with the term polyhydroxy?

5 A. Yes, I would so agree.

6 Q. Do you agree that a polyol is an alcohol?

7 A. Yes. The ending, o-l, is indicative of that.

8 Q. Yes.

9 And in fact, isn't the origin of polyol from  
10 polyalcohol?

11 A. No. The origin of the o-l is from the German, uhl,  
12 which means oil.

13 Q. All right. I defer to you on that, Dr. Eisch.

14 You refer to Hawley's again for the proposition that  
15 a polyol is synonymous with the term polyhydric alcohol,  
16 correct?

17 A. Yes, sir.

18 Q. Have you ever heard pluronic referred to as a polyol?

19 A. No, I cannot recall seeing that.

20 Q. Let's look at trial Exhibit 475.

21 Q. Are you familiar with this treatise on Nonionic  
22 Surfactants by Martin Schick?

23 A. Yes, since this legal action.

24 Q. Have you examined this reference to see how -- what --  
25 the nature of the discussion of pluronics in this text?

2

1 A. I recall examining this in the index, especially as to  
2 the -- whether in fact this reference, as Osteotech asserts,  
3 makes synonymous polyoxyalkylene and polyalkylene glycols.  
4 That's the only context in which I recall.

5 Q. As between you and Dr. Schick, would you defer to  
6 Dr. Schick in terms of knowledge of pluronic?

7 A. I don't know the man's background. He's the editor of  
8 this and, hence, I don't know what his contribution to this  
9 collection is.

10 Q. Let's turn to the ninth page of Exhibit 475, and there,  
11 we're looking at a chapter by Irving Schmoka (ph.), correct?

12 A. I see his name on the top, yes, and somewhere within  
13 the chapter; is it not?

14 Q. And did you do know that Irving Schmoka was heavily  
15 involved in the developments of pluronics?

16 A. Yes, sir, I recognize that.

17 Q. Let's focus on page 313, middle paragraph. And do you  
18 see there Dr. Schmoka refers to pluronic polyols.

19 A. Yes, sir, I see it.

20 Q. So that's one example where someone with considerable  
21 knowledge of pluronics has chosen to refer to pluronic has a  
22 polyol, correct?

23 A. Right.

24 But it's at this point I would like to call attention  
25 to the date of this compilation. It's 1966, 34 years ago.

3  
1 Q. So you think it's out of date?

2 A. It could, conceivably.

3 Q. All right.

4 Well, then, let's then look at Exhibit 32.

5 MR. BROWN: Backing up, I offer Exhibit 475 into  
6 evidence.

7 THE COURT: Yes.

8 BY MR. BROWN:

9 Q. You've seen Exhibit 32 before, Dr. Eisch?

10 A. Yes.

11 Q. And you understand --

12 A. I think this -- is this an internal document of GenSci?

13 Q. Yes?

14 A. Yes.

15 Q. And if we focus on the second paragraph of the  
16 document, do you see that even GenSci refers to pluronic as  
17 a polyol?

18 A. Yes, sir, I see that.

19 Q. They refer to, quote, certain blocked copolymer polyols  
20 exhibit reverse phase properties, end quote?

21 A. Yes, sir.

22 Q. And they're referring to pluronic, correct?

23 A. Yes, sir.

24 Q. Let's look at Exhibit 70.

25 MR. BROWN: I offer Exhibit 32 into evidence.

3

1 THE COURT: Yes.

2 BY MR. BROWN:

3 Q. Do you recognize Exhibit 70, Dr. Eisch?

4 A. Yes, I have seen this. And when I examined it, I  
5 looked in vain for a date. Can you provide that.

6 Q. I can't unless it's on the document, itself.

7 But is there any question as to what this document  
8 is, Dr. Eisch?

9 A. It's technical data from the BASF Corporation whose  
10 brochure we gave testimony on earlier in which we could not  
11 find this term. And so that's why I wonder on such a  
12 document from the same corporation that now this terminology  
13 emerges.

14 Q. Well, now, your testimony this morning was that you  
15 couldn't find the term polyalkylene glycol, wasn't it?

16 A. Right.

17 I looked at the same time. I can now add for  
18 assurance that I looked for any variant of that, like,  
19 polyol.

20 Q. The title of this document is pluronic polyol gels; is  
21 that correct?

22 A. yes, sir.

23 Q. BASF is, as you know, is the manufacture of pluronic?

24 A. Yes, sir.

25 That's why I'm confused because in a very recent

3

1 brochure, the term is not used. And here, you produce a  
2 document where it was used. And I so I wonder about its  
3 date.

4 Q. All right.

5 Well, let me see if I we can deal with your concern  
6 about dates. Let's turn to turn to Exhibit 370.

7 Are you familiar with this treatise on Nonionic  
8 surfactants where Nace is the editor?

9 A. I believe that was submitted as part of your exhibits;  
10 was it not?

11 Q. Yes, it was.

12 A. That is in truth the first time I became acquainted  
13 with it.

14 Q. Did you review the exhibit?

15 A. Yes, I did.

16 Q. And did you understand that this treatise was directed  
17 to Nonionic Surfactants, including polyols?

18 A. I believe that's my understanding, yes.

19 Q. And the treatise further discussed pluronics as  
20 particular kind of nonionic surfactant?

21 A. Yes, sir.

22 Can you give me a date on this one?

23 Q. Yes. I think you have the exhibit. The seconds  
24 indicates it's page copyrighted 1996?

25 A. That's in this pile?

3

1 Q. It should be?

2 A. Which Exhibit number is it?

3 Q. Exhibit 60.

4 I'm sorry. Exhibit 370.

5 Is it the date that you want to look at, Dr. Eisch?

6 A. Well, I just wanted to look at the document, too, as  
7 long as we're on the subject.

8 Q. Sure. Sure.

9 A. Okay. I have it.

10 But you will note that in the title, in apposition to  
11 Nonionic Surfactants, it names them correctly by calling  
12 them polyoxyalkylene block copolymers. And that's the  
13 designation of greatest prominence on the title page.

14 Q. I'm not asking you about the title page, Dr. Eisch.

15 A. I know you're not. But I wanted to make that point.

16 Q. Have you confirmed that this is a treatise which was  
17 published in 1996?

18 A. Yes, sir.

19 Q. All right.

20 Now, let's turn to page 69 of this treatise.

21 A. Could you acquaint me with what that chapter is, as a  
22 start, and who the author of that chapter is?

23 Q. I'll try to do that.

24 The authors are Benjamin Chu (ph.) and Sue  
25 Kang (ph) from the Department of Chemistry, State University

4

1 of New York in Stoneybrook.

2 A. Okay.

3 Q. Do you happen to know whether they are recognized  
4 experts in the field of pluronics?

5 A. I know the name Benjamin Chu but I don't know his  
6 stature.

7 Q. All right.

8 And if we turn then to page 69, do you see that those  
9 authors refer to pluronic as polyols?

10 A. Yes, I see that.

11 Q. That is as of 1996?

12 A. Yes.

13 By all admissions, having no connection with the  
14 company.

15 Q. You know that pluronic has two hydroxyl groups,  
16 correct?

17 A. In most -- yes, pluronic, if it's been initiated with  
18 sodium hydroxide rather than alkoxide.

19 If it were initiated with alkoxide, it would have a  
20 maximum of one hydroxyl group.

21 Q. So if pluronic has two hydroxyl groups, and pluronic is  
22 a polyol, you have already acknowledged that a polyol is the  
23 same as a polyhydric alcohol, correct?

24 A. Sir, you're taking the --

25 Q. Correct or not?



4

1 A. You're taking this from two academicians rather than  
2 from the company itself.

3 Q. Am I correct, Dr. Eisch?

4 A. If you make that assumption --

5 Q. All right.

6 A. -- that these authors are the correct ones to designate  
7 a pluronic properly.

8 Q. And with that assumption that they know what they're  
9 talking about, and they know how to refer to pluronic; isn't  
10 it true that a polyhydric alcohol, which is a polyol, and  
11 pluronic is a polyol, and pluronic has two hydroxyl groups,  
12 doesn't it follow that a polyhydric alcohol may have as few  
13 as two hydroxyl groups?

14 MS. CONSALVI: Objection; lack of foundation, based  
15 on the assumption he's asserting.

16 THE COURT: He's cross-examining. He can do that.

17 If the witness doesn't agree, he can say that.

18 BY MR. BROWN:

19 Q. Am I correct?

20 A. From the -- the precondition -- let me add a  
21 pre-condition to it; that these two authors in the use of  
22 pluronic polyol are more authoritative than the company  
23 itself. And that is, to me, of small probability.

24 Q. So you don't like the way these authors, authors of a  
25 treatise from 1996, used the term polyol; isn't that it?

4 1 A. I wonder why they do it --

2 Q. -- all right --

3 A. -- when name pluronic is out there.

4 Q. Well, let's see what GenSci does with pluronic. Let's  
5 look at Exhibit 31.

6 Again, this is a somewhat different form of the  
7 publication that we were looking at this morning?

8 A. Yes, I've seen this.

9 Q. You should have a copy in front of you, Dr. Eisch.

10 A. Well, I can see it on the screen here.

11 Q. Exhibit 31.

12 In particular, I want to direct your attention to  
13 page GSL 000625, which appears to be the sixth page of the  
14 exhibit.

15 MS. CONSALVI: Objection here to the document. He  
16 said it's a different form than Exhibit 31.

17 THE COURT: I'm not following.

18 MS. CONSALVI: He's referring to Exhibit 31 but he  
19 said it was a says different form of that document.

20 MR. BROWN: It's not Exhibit 31.

21 It's Exhibit -- I'm sorry. It's not Exhibit 35,  
22 which is what's I used this morning. It's different 31.  
23 It's a different Exhibit because it has additional pages.

24 All right. Counsel has corrected me that the Exhibit  
25 I previously referred to was 106.

4

1 All right.

2 THE COURT: Instead of? Instead of 31?

3 MR. BROWN: I think I said 35 just a minute ago.

4 THE COURT: Exhibit 35.

5 BY MR. BROWN:

6 Q. All right.

7 So let's look at -- perhaps this is for what I'm  
8 using it for the same -- the same language, but I won't know  
9 without checking.

10 But let's proceed with this version of the document.

11 And you can see, am I correct, Dr. Eisch, that again,  
12 it indicates that the information was compiled by Dr. Clokie  
13 and Dr. Coulson.

14 A. Yes, sir, that's correct.

15 Q. And then if we look at the conclusions to this  
16 publication, you see in the next to last paragraph a  
17 reference to pluronic?

18 A. Yes, sir, I do.

19 Q. And Drs. Clokie and Coulson, when they refer to  
20 pluronic, refer to it as a polyol, correct?

21 A. A -- no.

22 I think my reading of the line that is now boxed in  
23 is that an extensive drug master file is on file at the  
24 FDA, and in that file it, is so referred to. That's a  
25 different thing than saying that they have referred to it as

4

1 such.

2 Q. Well, would you agree with me that this page indicates  
3 or uses the term polyol to describe pluronic?

4 A. This page does that have that term on it, yes, sir.

5 Q. I think in your testimony, you indicated if the number  
6 of hydroxyl groups are small in relation to the length of  
7 the molecule, it's not appropriate to call the molecule an  
8 alcohol. Did I fairly state that?

5

9 A. It is not appropriate to characterize the functional  
10 group that is in dominance as the alcohol group.

11 Q. Would you agree that those who use pluronic refer to it  
12 as a polyol?

13 A. You have shown me some examples of that usage, yes,  
14 sir.

15 Q. And even though -- and they do that even though it  
16 contains many more ether groups than it does hydroxyl  
17 groups?

18 A. Yes, sir.

19 Q. In connection with formulating your opinions on acyclic  
20 polyhydric alcohols, did you undertake any kind of review to  
21 determine if there were any treatises on acyclic -- or  
22 polyhydric alcohols?

23 A. Well, I'm aware of some treatises. I know there are  
24 treatises on glycerol by itself. That certainly is a  
25 example of an acyclic polyhydric alcohol.

5

1 Q. Did you come across any treatises on polyhydric  
2 alcohols?

3 A. I know that there are some, but I did not refer to  
4 them.

5 Q. Do you happen to know whether those -- whether one or  
6 more of those treatises refer to alcohols containing two and  
7 only two hydroxyl groups as polyhydric alcohols?

8 A. They might well do so.

9 Q. Are polyalkylenes a field in which you have  
10 specialized?

11 A. Polyalkylenes? You mean the polymer now, like,  
12 polyethelene and polypropylene. Yes, I have had a great  
13 deal of experience in that field.

14 Q. And have you with poly -- what you call  
15 polyoxyalkylenes?

16 A. No, I don't have direct experimental experience in  
17 making such polymers.

18 Q. Do you have any publications directed to  
19 polyoxyalkylenes?

20 A. No, sir.

21 Q. Do you have any publications that show you have used  
22 the term polyalkylene glycol consistent with the definition  
23 of you are now advocating before this Court?

24 A. No, sir.

25 Q. I think I heard you correctly say that you regard the

5

1 term polyalkylene glycoll as a pernicious term?

2 A. Yes, sir, in that it leads, if you follow its apparent  
3 prescription for writing a formula, to the wrong formula.

4 Q. So it bothers you to hear the term polyalkylene glycol  
5 applied to block copolymers such as pluronic?

6 A. No because already by the use of the words block  
7 copolymers, one is alerted to the fact that you have two  
8 different monomers by the word copolymer; and by the block,  
9 you're alerted to the kind of structure that you would have.

10 Q. I'm sorry, Dr. Eisch, that was not quite my question?

11 A. All right.

12 Q. It bothers you to hear the term polyalkylene glycol  
13 apply to pluronic which happens to be a block copolymer,  
14 right?

15 A. Yes, sir, that does bother me.

16 Q. And its use is pernicious because it's so commonly used  
17 to describe compounds in a way that in your view of chemical  
18 terminology is incorrect?

19 A. It's just sloppy terminology is what I would impute it  
20 to.

21 Q. Are you aware that the term is commonly used to refer  
22 to copolymers such as pluronic?

23 A. As we went through on the data base this morning, there  
24 are about 300 patents out there where it is possible tht  
25 they are used in some instances synonymous with each other.

5

1 As I said, that was a small percentage of my casting.

2 Q. Well, let's look at the compound polyethylene glycol.

3 Is that a compound that is commonly referred to by chemists?

4 A. Yes, it is.

5 Q. And you understand that that compound, polyethylene  
6 glycol, is also commonly referred to as PEG, P-E-G?

7 A. Yes, that's the acronym.

8 Q. And you are aware that the term polyethylene glycol --  
9 that the term polyethylene glycol is used all the time to  
10 describe a compound containing repeating carbon carbon  
11 oxygen units, correct?

12 A. Yes, sir.

13 In other words, a homopolymer of ethyleneoxide, yes.

14 Q. Nevertheless, even though you don't refer to the oxygen  
15 unit, the compound is commonly referred to as polyethylene  
16 glycol, correct?

17 A. That's correct.

18 Q. So whether we're talking about polyoxyethylene glycol  
19 on the one hand or poly ethylene glycol on the other, you  
20 would understand that one is referring to the same compound?

21 A. Yes, sir.

22 As with other --

23 Q. -- Thank you, Dr. Eisch --

24 A. -- terminology --

25 Q. -- you've answered the question.

5  
1           And would you it be true that chemists in the  
2 industry would have no trouble knowing what is being  
3 referred to when the term polyethylene glycol is used?

4     A.    Yes, by dentil repetition.

5     Q.    Now, why don't you don't like the usage of the term  
6 polyethylene glycol, would you at lease acknowledge that the  
7 term is frequently used to describe pluronic?

8     A.    No, would to the agree with that.

9     Q.    You would not.

10           Are you aware of a substantial body of patents that  
11 use the term to describe both the -- that are used to  
12 describe both homopolymers and copolymers, such as pluronic?

13     A.    As with what? As with this term, sir?

14     Q.    Polyethylene glycol?

15     A.    Yes, I admitted that there might be 298 since 1976 out  
16 there out of 13,000.

17     Q.    And Would you acknowledge that there are many patents  
18 that describe pluronic as a polyalkylene glycol?

19     A.    As I said, possibly, 300.

20     Q.    How many of those patents have you looked at,

21     Dr. Eisch?

22     A.    Out of those 300, sir?

23     Q.    Yes?

24     A.    I have read the abstract of every one of them.

25     Q.    How many of them have you read in their entirety?



6

1 A. Not -- the others -- what I would do after reading the  
2 abstract is to look through the detailed description of the  
3 invention for the terms pluronics and/or polyethylene  
4 glycol. And I did that with, I would say, almost all of  
5 them.

6 Q. How many did you read in their entirety?

7 A. None.

8 But the computer did that for me.

9 Q. Well, let's talk about that.

10 For your testimony on polyalkylene glycol, you're  
11 relying on a computer search by Dr. Reese?

12 A. That's correct.

13 Q. So is it he, not you, who characterized the patents  
14 that he found in the search?

15 A. No. He collected and culled out the patents. And I  
16 went through the stack of the 298.

17 Q. But out of 298, you didn't read in their entirety any  
18 of those, correct?

19 A. It wasn't necessary to do so.

20 Q. Now, he says in his report that there are fewer than  
21 -- that there are only two percent of the patents that  
22 support Osteotech's interpretation of the term?

23 A. He did not make that calculation, I did.

24 I took the number 298 over the sum of the occurrences  
25 of pluronic by itself and polyethylene glycol by itself and

6

1 came to about 13,000, and then did the division and  
2 multiplied by a hundred.

3 Q. But that number two per cent is a result of doing a  
4 search based on looking for the term pluronic copolymer and  
5 polyalkylene glycol?

6 A. No, sir, just the term pluronic. That was the search  
7 term.

8 Q. Well, as I read the report, the 289 patents was arrived  
9 at by doing a search on the term pluronic and the term  
10 polyalkylene glycol, correct?

11 A. Yes, sir, I can agree that.

12 Q. All right.

13 And then it's from there that a further search was,  
14 in effect, done to weed it down to six patents; and that  
15 search was based on using the term pluronic copolymer and  
16 polyalkylene glycol?

17 A. Right.

18 But you notice, I did not refer to that or use that  
19 in my testimony.

20 Q. Well, you may not have referred to it or used it, but  
21 that's how Dr. Reese says that he got to the six per cent?

22 A. Six patents.

23 Q. He says, in very few patents, six per cent, pluronics  
24 are described as polyalkylene glycol copolymers, correct?

25 A. Let me get to that. Can you direct me to the line?

6

1 I'm looking here --

2 Q. It's tab --

3 A. I have the QQ tab. But where is it within that?

4 Q. Page six, line 12?

5 A. Yes, I have it.

6 Q. So fast I understand it, what Dr. Reese did was, first,  
7 he did a search on pluronic and polyalkylene glycol and came  
8 up with 289 patents, right

9 A. Where they both occurred in the same patent, yes, sir.

10 Q. Right.

11 A. And then, he did a further search to look for a subset  
12 of those patents that refer to both pluronic copolymers and  
13 polyalkylene glycols, right?

14 A. But that six -- well, let's see. That six patents is  
15 out of the 280.

16 Q. We're getting there. Let's start --

17 Am I correct as I characterize the searches done by  
18 Dr. Reese?

19 A. Yes, sir.

20 Q. So he did a second search where he searched on pluronic  
21 copolymers from among the 289 patents, correct?

22 A. Yes, sir.

23 Q. And then you took those patents --

24 A. No, no, I started earlier. I started with the total  
25 number of hits on pluronic by itself, which is 8,000

6

1 something, way at the start of the search, sir.

2 And then I took the total number of hits of  
3 polyalkylene glycol written as one or two words by itself.  
4 And that was 5,000.

5 And so then I looked -- used this his number of 279  
6 or 289 where he found both of these terms in the same patent  
7 and then to say where these would be cases where maybe they  
8 might be used synonymously, I took that 279 over 13,000,  
9 times 100, to arrive at my two per cent.

10 Q. All right.

11 That's not part of Dr. Reese's report?

12 A. No, that's my calculation. But that's simple  
13 arithmetic.

14 Q. All right.

15 Now, am I correct, Dr. Eisch, that you contend  
16 pluronic, which has two hydroxyl groups, is not a glycol  
17 because it's so large in relation to the number of hydroxyl  
18 groups?

19 A. Because of the preponderance of ether linkages over  
20 those two hydroxyl groups. And the preponderance is 125  
21 ether linkages for every one hydroxyl group.

22 Q. And yet, you're familiar with polyethylene glycol which  
23 in many cases is larger and perhaps much larger than  
24 pluronic, correct?

25 A. It could be, yes, sir.

7

7

1 Q. Nevertheless, chemists refer to polyethylene glycols as  
2 glycols even though they have many, many more carbon carbon  
3 oxygen units than they have hydroxy units, correct?

4 A. As I say that's not formal nomenclature.

5 Q. You don't approve of that nomenclature?

6 A. I just recognize it as casual nomenclature.

7 Q. In formulating your opinion, Dr. Eisch, on the term  
8 polyethylene glycol, did you attempt to identify any  
9 treatises or dictionaries that define the term polyethylene  
10 glycol?

11 A. Yes, I looked in a number of places where these  
12 polyethylene glycols are discussed.

13 Q. Did you happen to look at the Kirk Othmer Enclyclopedia  
14 of Chemical Technology?

15 A. Yes.

16 MR. BROWN: Please bring up Exhibit 324.

17 BY MR. BROWN:

18 Q. You recognize that as a reference text for chemists?

19 A. Yes, sir.

20 Q. And if we turn to page 489 of Exhibit 324?

21 A. May I have your date on this one? Do you have the date  
22 on which this was published?

23 Q. Yes, it's in your book. It was published in 1998?

24 A. Okay. Yes, I see it.

25 Q. If we go to page 489, the bottom two paragraphs, am I

7

1 correct that the authors of this text refer to polyalkylene  
2 glycols that are copolymers?

3 A. I don't see the word copolymers.

4 Q. Well, doesn't it say that polyalkylene glycols are  
5 usually prepared either from propylene oxide or up to 50  
6 per cent ethylene oxide?

7 A. Right. But that's not a definition. That's a  
8 prescription of how they are prepared. I wouldn't call that  
9 definition.

10 Q. Well, if only 50 per cent is ethylene oxide, wouldn't  
11 you agree that rest of it has to result in a copolymer?

12 A. I would call your attention to the first part of that  
13 phrase; they are usually prepared either from propylene  
14 oxide, as a water insoluble type, meaning that that is the  
15 the homopolymer propylene oxide.

16 And then they go on to say, as another preparation,  
17 that sometimes, they are copolymers of propylene oxide and  
18 ethylene objection.

19 So again, we have a case where we're talking about  
20 polyalkylene glycols and they go on to distinguish the two  
21 classes of homopolymers and heter-- copolymers.

22 Q. Would you agree that under the term polyalkylene  
23 glycols, this text indicates that they and include  
24 copolymers?

25 A. Yes, they do.

7

1 MR. BROWN: Offer Exhibit 324 into evidence?

2 THE COURT: Yes.

3 BY MR. BROWN:

4 Q. Let's look at Exhibit 681. This is Ashford's  
5 Dictionary of Industrial Chemicals; are you familiar with  
6 this reference book?

7 A. I have not had occasion to use it, no.

8 Q. You understand, though, that it's a reference book  
9 commonly used by industrial chemists?

10 A. If you say so.

11 Q. It's copyrighted in 1994?

12 A. Yes, sir.

13 Q. Let's look at page 724 and you see a there a definition  
14 for polyalkylene glycol.

15 Have you had a chance to read that passage,  
16 Dr. Eisch?

17 A. Yes.

18 Q. Would you agree with me that these authors have used  
19 the determine polyalkylene glycol so as to refer to  
20 copolymers?

21 A. In a preparative sense, yes, sir.

22 Q. Well, the result of the process they describe is a  
23 copolymer which they refer to as a polyalkylene glycol,  
24 correct?

25 A. Yes, sir.

7 1 MR. BROWN: May I approach the witness, your Honor.

2 THE COURT: Yes.

3 BY MR. BROWN:

4 Q. Dr. Eisch, I'm handing what's been marked as  
5 Exhibit 4002. Take a minute to look at it.

6 Now, that Exhibit 4002 is pluronic in water, correct?

7 A. Yes, sir, 25 per cent by weight, pluronic.

8 Q. And pluronic in water is a dispersion

9 A. It's a colloidal dispersion, yes, sir.

10 Q. All right.

11 And that exhibit is at room temperature?

12 A. Yes.

13 Q. Has that exhibit, or the contents of that exhibit  
14 changed in shape since this morning?

15 A. Perhaps, you would direct me to the change. It looks  
16 the same to me.

17 Q. Well, don't you recall yesterday that all of the  
18 contents were on the bottom of the container?

19 A. They still are.

20 Q. So are you saying -- are you testifying that the  
21 contents of Exhibits 4002 have not changed in shape?

22 A. Well, certainly, they're still on -- all on the bottom,  
23 and --

24 Q. Dr. Eisch, have the contents of Exhibit 4002 changed in  
25 shape?



8

1 A. Are you talking about the surface now as I hold it  
2 upright?

3 Q. I'm talking about any aspect of the pluronic water  
4 mixture, has it changed in shape since you used that exhibit  
5 yesterday?

6 A. Frankly, when I obtained the exhibit, all I noticed was  
7 that it filled the container. I didn't notice anything  
8 about anything else.

9 Q. Can you determine from looking at the exhibit that in  
10 fact there has been some flow of the contents down the side  
11 of the container?

12 A. To be honest with you, I did not notice the surface  
13 when the sample was handed to me yesterday.

14 MR. BROWN: All right.

15 I have no further questions, Dr. Eisch.

16 THE COURT: Do you have anything else?

17 MS. CONSALVI: Yes we do.

18 MR. BROWN: I'm sorry, your Honor. May I just as a  
19 housekeeping matter offer a couple more exhibits?

20 THE COURT: Yes.

21 MR. BROWN: They are Exhibits 710.

22 THE COURT: Yes.

23 MR. BROWN: Exhibit 176.

24 THE COURT: Yes.

25 MR. BROWN: Exhibit 70. Exhibit 31. Exhibit 681.

8

1

THE COURT: Yes.

2

MS. CONSALVI: I don't think 31 is right.

3

THE COURT: Exhibit 31 is not right. It's 35, isn't

4

it?

5

MR. BROWN: Well, we'll take care of that.

6

THE COURT: There's no reason to sort it out right

7

now.

8

MR. BROWN: And in addition, Exhibit 370 was used so

9

we offer that, at this time.

10

THE COURT: Yes.