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Transcript of Daniel Gil

Date: December 31, 2023

Case: Lumify, In Re:

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

Transcript of Daniel Gil
Conducted on December 31, 2023

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UNITED STATES DISTRICT COURT DISTRICT OF NEW JERSEY - - - - - x : IN RE LUMIFY : : CIVIL ACTION NO. : 21-16766(RK)(RLS) : (CONSOLIDATED) - - - - - X REMOTE VIDEOTAPED DEPOSITION OF DR. DANIEL GIL Sunday, December 31, 2023 9:03 a.m. PST Job No. 520167 Pages: 1 - 185 Reported By Susan S. Klinger, RMR-CRR, CSR	A P P E A R A N C E S ON BEHALF OF THE PLAINTIFF: MATTHEW LUNEACK, ESQUIRE FINNEGAN 901 New York Avenue, NW Washington, DC 20001-4413 202.408.4436 ON BEHALF OF THE DEFENDANT: ROBERT FREDERICKSON, III, ESQUIRE GOODWIN PROCTER 100 Northern Avenue Boston, Massachusetts 02210 617.570.1000 ALSO PRESENT: Kristi McIntyre, Esquire - Bausch & Lomb Jeffrey Martin, Esquire Merinda Evans, Videographer John Gugarty, PD Tech	
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Remote Videotaped Deposition of DR. DANIEL GIL, held remotely: Pursuant to notice, before Susan S. Klinger, RMR-CRR, CSR in and for the states of Texas and California	I N D E X WITNESS DR. DANIEL GIL EXAMINATION BY MR. FREDERICKSON E X H I B I T S No. Description Page Exhibit 7 Burke 1996 reference 134 Exhibit 36 U.S. Patent 6,294,551 B1 71 Exhibit 41 Final Written Decision 32 Exhibit 62 Acheampong 2002 reference 143 Exhibit 63 Alphagan labels 179 Exhibit 200 Declaration 20	

5 1 PROCEEDINGS 2 VIDEOGRAPHER: Here begins media 1 in the 3 videotaped deposition of Dr. Daniel Gil in the 4 matter of In re Lumify, in the United States 5 District Court, District of New Jersey, Cause 6 Number 21-16766-RJ. Today's date is December 7 31st, 2023 and the time on the video monitor is 8 9:03 Pacific Standard Time. 9 The remote videographer today is Merinda 10 Evans representing Planet Depos. All parties of 11 this video deposition are attending remotely. 12 Would counsel please voice identify 13 yourselves and state whom you represent? 14 MR. FREDERICKSON: Robert Frederickson 15 from Godwin Procter representing the defendants. 16 Also on the line is Jeffrey Martin, in-house 17 counsel for Dr. Reddy's laboratories. 18 MR. LUNEACK: Matthew Luneack of Finnegan 19 Henderson on behalf of plaintiffs and witness. 20 Also with me is Kristi McIntyre, in-house counsel 21 for plaintiff, Bausch & Lomb. 22 VIDEOGRAPHER: The court reporter today is 23 Susan Klinger representing Planet Depos. The 24 witness will now be sworn. 25 DR. DANIEL GIL,	7 1 to reveal any confidential information. If you 2 are able to answer, feel free to do so. 3 A Yeah, I mean, I think I can generally say 4 it was -- there was litigation related to the 5 glaucoma product Lumigan. 6 Q And you were -- it involved your work when 7 you were at Allergan? 8 A Yes. 9 Q Do you know who the other party was? 10 A I think it may have been Pharmacia. 11 Q And do you know were you testifying as a 12 expert witness, did you prepare a report and were 13 you offering opinions or were you more of a fact 14 witness if you -- if you appreciate the 15 difference? 16 A I think you would probably call that a 17 fact witness. I was being asked to talk about lab 18 notebooks and research that had been done. 19 Q Were you a named inventor on the patent 20 that was being litigated? 21 A I don't believe so. 22 Q Okay. So you have likely gone over some 23 of this with your counsel leading up to today's 24 deposition, but I will go over some of the basics 25 just to make sure that we're on the same page.
6 1 having been first duly sworn testified as follows: 2 EXAMINATION 3 BY MR. FREDERICKSON: 4 Q Good morning. Would you please state your 5 name for the record? 6 A Daniel Gil. 7 Q What is your home address? 8 A 1101 White Sails Way in Corona del Mar, 9 California 92625. 10 Q Dr. Gil, have you ever been deposed 11 before? 12 A Yes, once. 13 Q When was that? 14 A About 20 -- some 20 years ago. 15 Q And I take it that wasn't a Zoom 16 deposition at that time? 17 A No, it was not. 18 Q What kind of case was that for? 19 A That was -- that was for a patent case for 20 my employer Allergan. 21 Q Do you remember the product that was at 22 issue in that case? 23 A Am I -- am I able to -- I don't know 24 whether I'm able to say. 25 MR. LUNEACK: I would just caution you not	8 1 Most important thing -- one of the most 2 important things is that we have a court reporter 3 taking down everything that is being said today. 4 And so I'm going to do my best -- it is important 5 that we don't speak over one another. So I will 6 do my best to let you finish answering my question 7 before I start asking another question. If you 8 can do your best to let me finish asking my 9 question before you start answering, we will make 10 sure that we have a clean record. 11 Does that sound reasonable? 12 A That is fair. 13 Q Your attorney may object from time to time 14 to my questions, so that is all the more reason to 15 give it a little bit more time after I finish 16 asking before you start answering. But absent an 17 instruction by your attorney not to answer my 18 question, you understand that even if he does 19 object you still need to answer the question? 20 A Understood. 21 Q We will be going for a few hours at least. 22 I will try to take a break every hour or so, and I 23 will do my best to keep track of that. If you 24 want to take a break at any time, that is 25 completely okay with me. The only request that I

9 1 would have is that if I have asked a question and 2 the question is pending that you answer the 3 question before we go on break. Does that sound 4 reasonable? 5 A Yes. 6 Q Because we're doing this over Zoom and I'm 7 not in the room with you, I don't -- I can't see 8 what is going on at your location. So just a 9 couple of questions to see -- well, first, is 10 anyone in the room with you? 11 A No. 12 Q You're clearly communicating with a 13 computer that has the Zoom session open. Do you 14 have any other applications open on your computer, 15 like, email or things that aren't necessary for 16 participating in the Zoom? 17 A I do. I do have in the background email, 18 I can minimize it if you -- if you -- 19 Q Yeah, would you be able to close that, 20 just because I can't see if you are getting 21 inbound messages, so the safest course is just to 22 have everything shutdown. 23 A Okay. 24 Q Okay. And if anyone does reach out to you 25 to try to contact you when we're on the record,	11 1 Q Do you understand that that is the same 2 oath that you would take if you were testifying in 3 court in front of the judge? 4 A Yes, I do. 5 Q What did you do to prepare for today's 6 deposition? 7 MR. LUNEACK: Counsel, I would just -- you 8 can answer this question generally, but I would 9 just caution you not to reveal the substance of 10 any discussions with counsel. 11 A I reviewed my declaration and I reviewed 12 the -- some of the references that were cited in 13 the declaration. And -- and I did meet with -- 14 with Matt and Kristi and a few other of the 15 attorneys. They kind of walked me -- helped walk 16 me through the declaration. 17 Q And the other attorneys beyond Matt and 18 Kristi do you remember what their names were? 19 A Justin was one and then I'm blanking on 20 Diner's first name. 21 Q Brian? 22 A Brian, yes. 23 Q Other than attorneys employed by either 24 Bausch & Lomb or Finnegan, the law firm Finnegan, 25 did you speak with anyone else to prepare for
10 1 that is, when the video is recording and I'm in 2 question asking mode, whether it is through a chat 3 message or a text message or an email, will you 4 just let me know that that has happened? 5 A Sure. Yeah. If I get a text sometimes it 6 pops up on the screen, I don't know whether that 7 shows up or not. 8 Q I don't see any of that. So hopefully -- 9 are you able to shutdown those -- that text 10 application, too? 11 A I don't -- without taking a fair amount -- 12 I'm not sure how you would do that. 13 Q Okay. 14 A I would have to go into settings. 15 Q Don't worry about that now. If a text 16 message comes up, could you let me know and at 17 least confirm for me it is not related to the case 18 or your testimony in any way? 19 A Sure. 20 Q That would probably be the easiest way to 21 handle that. 22 A Okay. 23 Q All right. Do you understand that you are 24 under oath today? 25 A Yes.	12 1 today's deposition? 2 A No. 3 Q How long was that meeting -- how many 4 meetings with counsel did you have to prepare? 5 A I believe we had two meetings. 6 Q When was the first one? 7 A Well, so as you are aware this all came 8 upon us very fast. So we -- I believe we met -- 9 we met, I think, for a few hours on Friday and 10 then we met for a few hours yesterday. And we 11 just -- and we just touched base a little bit 12 ahead of today. 13 Q So other than the two meetings that you 14 had with counsel on Friday and yesterday, brief 15 touch base earlier this morning, anything else 16 that you did to prepare for today's deposition? 17 A Yeah. The hard copies were provided to me 18 of the -- of the exhibits that -- that are -- that 19 were cited in my declaration. And so I -- I spent 20 time refreshing, reviewing -- reviewing some of 21 those, yes. 22 Q And you currently have with you a binder 23 or multiple binders that contain your declaration 24 and the exhibits cited in there? 25 A Yes, I do.

13 1 Q Is that one binder or multiple binders? 2 A It is -- it is basically individual, you 3 know, documents that are in a -- in a -- in a 4 packet. 5 Q Okay. And are there any notes, notations 6 or anything on any of the exhibits or your 7 declaration? 8 A No, there are not. 9 Q You didn't write anything in the margin in 10 any of the exhibits or anywhere on your 11 declaration? 12 A No. 13 Q When were you first contacted about 14 serving as a witness in this case? 15 MR. LUNEACK: Objection. You may answer, 16 Dr. Gil, but again, I would just caution you in 17 this line of questioning not to reveal the 18 substance of any communications with counsel. 19 A I believe I was contacted sometime last 20 summer about filing a declaration. Well, there 21 was really -- yeah, about a declaration. Let's 22 leave it at that. 23 Q And who contacted you? 24 A I think Kristi may have been the initial 25 contact.	15 1 A I think it was probably in the September 2 timeframe. 3 Q At some point did Ms. McIntyre introduce 4 you to the outside counsel representing Bausch & 5 Lomb in this lawsuit at the Finnegan law firm? 6 A Yes. 7 Q And when did you first speak with 8 attorneys at Finnegan concerning this lawsuit? 9 A You know, I -- without -- if you need to 10 know, I can sort of review my calendar and figure 11 that out, but I don't recall. 12 Q Was it -- was it the summer, was it 13 towards September, do you have a sense just 14 directionally? 15 A I think at some -- it probably, again, 16 would have been in the fall, you know. So as -- 17 as the -- as we were working on the declaration at 18 some point Finnegan -- Finnegan attorneys got 19 involved. 20 Q Who wrote your declaration? 21 A So I -- I did -- the declaration 22 represents my thinking. What -- what typically 23 happened was that, and I believe it was -- I 24 believe it was that folks -- folks at Finnegan 25 were taking notes of what we were talking about
14 1 Q Is that Kristi McIntyre? 2 A Yes, Kristi McIntyre, yes, who is 3 listening in on the call. 4 Q That is in-house counsel at Bausch & Lomb? 5 A Yes. 6 Q Did you know Ms. McIntyre before her 7 outreach in connection with this case? 8 A No. 9 Q You said that was in the summer of 2023. 10 Do you remember when? 11 A I do not. 12 Q What did you do as it relates to your work 13 in this case after that initial outreach with 14 Ms. McIntyre? 15 MR. LUNEACK: Objection. You may answer 16 generally, but again, do not -- I would caution 17 you not to reveal the substance of any 18 communication with counsel. 19 A Yeah, in general, we prepared a 20 declaration. 21 Q And is that the declaration that you have 22 a copy in front of you now? 23 A Yes. 24 Q When did you start working on that 25 declaration?	16 1 and then drafting kind of turning that into text, 2 which then I would review and edit. 3 Q And you started working on this 4 declaration in September of 2023? 5 MR. LUNEACK: Objection, asked and 6 answered. You may answer, doctor. 7 A Yeah. Again, without -- without referring 8 to -- to calendars that is a guesstimate that it 9 would have been in that timeframe. 10 Q And do you have a copy of your declaration 11 in front of you? 12 A I do. 13 Q Okay. And that is entitled Declaration of 14 Dr. Daniel W. Gil, Ph.D. in support of plaintiff's 15 motion for a preliminary injunction, right? 16 A Yes. 17 Q And on page 24 is it signed and dated by 18 you, December 12th, 2023? 19 MR. LUNEACK: Counsel, can you drop the 20 exhibit into the chat or something so that others 21 can follow along? 22 MR. FREDERICKSON: Sure. John, are you 23 able to -- you should have the declaration in 24 there. 25 REMOTE TECHNICIAN: I have put that

17 1 document in the Zoom chat now, counsel. Would you 2 like me to mark it as an exhibit? 3 MR. FREDERICKSON: No, I don't think that 4 is necessary. 5 A I'm not -- did I -- you asked whether on 6 page 24 my signature is there, yes. 7 Q I will -- I will ask the question again. 8 On page 24 of your declaration that is 9 signed and dated by you, right? 10 A Yes. 11 Q And it is dated December 12th, 2023, 12 right? 13 A Correct. 14 Q Were you working on your declaration all 15 the way through December 12th of 2023? 16 A We were -- yeah, I mean we -- so I'm not 17 sure what -- I mean, was it not every day, not -- 18 you know, but -- but yeah, I would say there were 19 regular meetings in that between -- between 20 September and -- and December 12th. 21 Q And how long did you spend in total or 22 your best estimate working on your declaration? 23 A You know, I would say a guesstimate about 24 maybe 3 to 4 -- 3 to 5 hours a month. 25 Q And so --	19 1 many -- in many of these cases some of these are 2 my own publications and many of these cases these 3 are materials that I had or -- or, you know, 4 had -- had recalled and -- and accessed them from 5 the internet. Yes. 6 Q And you were -- you understand that in 7 your declaration you offer certain opinions that 8 you formed as for purposes of preparing your 9 testimony; is that fair? 10 A I would say probably opinions and fact. I 11 know there is some, you know, in terms of how you 12 describe these things there are some legal -- 13 legal definitions. So I think some of this is 14 opinions, but some of this is actual -- you know, 15 I lived and breathed a lot of this stuff in my 16 career. 17 Q Understood. And so what -- what was your 18 assignment? What were you asked to do in forming 19 your opinions in this case? 20 A I was really brought in and asked to help 21 -- to provide kind of a declaration around 22 obviousness in relation to the -- to the Lumify 23 patent. 24 Q But you yourself aren't offering an 25 opinion on obviousness, are you?
18 1 A Certainly a little more -- a little more 2 time at the end. 3 Q So starting in September of 2023 going 4 through to mid December of 2023, at 3 to 5 hours a 5 month, would you say between 9 and 15 or so hours 6 total putting together your declaration? 7 A That is probably a good guess, yes. 8 Q Now, Appendix B to your declaration 9 contains a list of materials considered. Do you 10 see that? 11 A Appendix B. B? 12 Q Yes. 13 A Yes. 14 Q And in this list of materials considered 15 you identified patent applications that you 16 reviewed as well as other materials. Do you see 17 that? 18 A Yes. 19 Q How was this material transmitted to you, 20 was it sent to you from the attorneys? 21 MR. LUNEACK: Objection. You can speak 22 generally to it, doctor, but I caution you not to 23 reveal the substance of any communications. 24 A Most of this material is material I'm 25 familiar with and was familiar with. And so in	20 1 A I am -- I am offering, I guess, as a -- if 2 you call it a person of ordinary skill in the art 3 who was working in the field at the time, what to 4 me was -- what to me and I believe what others -- 5 other persons working the field at the time would 6 have considered obvious. 7 Q And when you say "at the time," what time 8 period are you talking about? 9 A The time period preceding the 2008 filing 10 of the Lumify -- of the low dose brimonidine 11 patent application. 12 Q Can you turn to paragraph 14 of your 13 declaration? 14 MR. LUNEACK: Counsel, if you are going to 15 be questioning about his declaration, should you 16 not mark it as an exhibit or I mean, I'm happy to 17 mark it as an exhibit. 18 MR. FREDERICKSON: Sure. Let's -- if you 19 want to mark it as an exhibit, we will mark the 20 declaration of Dr. Daniel Gil as Exhibit 200. 21 (Exhibit 200 marked.) 22 REMOTE TECHNICIAN: Counsel, I already 23 have a document that has been marked as Exhibit 24 200. Do you want to call this 201? 25 MR. FREDERICKSON: Let's call it 200 and

21 1 we can rename that one if I decide to use it. 2 REMOTE TECHNICIAN: Understood, thank you. 3 MR. FREDERICKSON: Thanks. 4 Q All right. Are you looking at paragraph 5 14 of your declaration? 6 A Paragraph or page, sorry? 7 Q Paragraph? 8 A Paragraph, okay. Yes. 9 Q It begins with the phrase, Although I am 10 not opining on the legal conclusions of 11 obviousness. Do you see that? 12 A Yes. 13 Q Okay. So what exactly are you offering an 14 opinion on as it relates to the obviousness of the 15 patent at issue in this case? 16 MR. LUNEACK: Doctor, feel free to refer 17 to the rest of your declaration to the extent 18 necessary. 19 A Thank you. Yeah, can you give me a 20 minute? I need to review what is in -- in here. 21 (Reviewing document.) 22 Yeah, I mean, I think -- I think what I 23 have written here kind of captures pretty -- 24 pretty nicely what -- what it was and is that I've 25 been asked to do, which is really to consider the	23 1 of alpha-adrenergic pharmacology for -- I'm still 2 working in that area by the way. So I have -- I 3 have been working in that area for probably, well, 4 more than 30 years. And so I'm -- I have -- I am 5 fully aware there is a whole lot of background 6 literature, and certainly I haven't captured all 7 of that in here. 8 I think what we've tried to -- what I've 9 tried to do is really capture the most relevant 10 articles to the particular question at hand, but 11 of course, there is a ton of background in terms 12 of alpha-adrenergic pharmacology, you know, 13 that -- that I'm -- I'm certainly prepared to talk 14 about. 15 Q Okay. So you have been working in the 16 field of ophthalmology and alpha-adrenergic 17 receptors for a large part of your career; is that 18 fair? 19 A That is fair, yes. 20 Q In the course of that work, you have been 21 exposed to both learnings through your work in 22 industry as well as journal articles and other 23 publications that have come out over the period of 24 time that you have been working in the field; is 25 that right?
22 1 prior art taken as a whole, you know. And -- and 2 taken as a whole means also understanding, really 3 looking at prior art that teaches away. 4 And -- and in my mind and I'm happy to get 5 into this a little bit, you know, there is also a 6 -- as a -- as a scientist there is an 7 understanding about hierarchy of, you know, of 8 data and information and how you would, you know, 9 what -- what types of information you would weigh 10 more heavily. 11 And so taking into totality the prior art 12 that was available, you know, I'm providing -- I'm 13 providing my -- my opinion in terms of what is -- 14 what would have been prior art at the time. 15 Q So -- 16 A At the time meaning -- meaning, you know, 17 up to 2008. 18 Q So when you say the prior art as a whole 19 and the totality of it, you have only listed just 20 over a dozen journal articles and patents in your 21 list of materials considered, right? 22 MR. LUNEACK: Objection to the extent it 23 mischaracterizes. 24 A Yeah. And -- and certainly, you know, 25 again, I have worked my -- I've worked in the area	24 1 A That's correct. 2 Q And you're bringing some of that 3 experience and knowledge to bear in the opinions 4 that you are offering in this matter, right? 5 A Yes, that is correct, yes, yes. 6 Q For purposes of forming your opinions in 7 this case, you reviewed specific journal articles 8 and patent publications that you listed in your 9 Appendix B Materials Considered, right? 10 A Yes. So I reviewed, you know, the 11 material that is captured in here in Appendix B, 12 yes, I've reviewed, but in my memory bank there is 13 plenty of other -- there is plenty of articles 14 that I didn't feel necessary to review, but, you 15 know, I'm very familiar with the -- the background 16 literature. 17 Q Sure. And so Appendix B represents the -- 18 the articles and the literature and the patent 19 publications that you specifically reviewed for 20 purposes of preparing your declaration; is that 21 fair? 22 A Yeah. I think I -- yeah, some of the -- 23 some of the material listed in here, again, I 24 think I specifically reviewed. Some of it -- let 25 me -- let me just take a look at this.

25 1 You know some of the material that -- that 2 has been included here is material that, again, I 3 was -- I knew very -- I knew very well. I didn't 4 necessarily review all of it in detail, but I knew 5 that there were, there were parts of it. 6 So for instance, you know, one of my 7 patent applications is in here and there were 8 particular elements of it that I thought were 9 relevant although I didn't review the whole -- I 10 did not necessarily review the whole document in 11 preparing. 12 Q Okay. So for purposes of preparing your 13 declaration, you either cited or reviewed specific 14 material that you listed in Appendix B with the 15 caveat that you may not have read every word of 16 every document? 17 A I think that is -- 18 MR. LUNEACK: Objection to the extent it 19 mischaracterizes. You may answer. If you want to 20 just give me another moment, doctor, before 21 answering, but you may answer. 22 A Yeah. I mean, you know, I think that -- 23 yeah, I think -- I think what you have said 24 that -- that I have -- yes, I think everything in 25 Appendix B are material that -- I'm sorry, can	27 1 lots of documents that are kind of, I would say, 2 foundational documents in alpha-adrenergic 3 pharmacology that again I -- are in my -- in my 4 head. 5 And so I may have kind of pulled them up 6 just to remind myself when they were published to 7 help, again, recollect timeframes to -- to make 8 sure that when I was thinking, okay, this was 9 1998, that it was really 1998. So I would say 10 there are things like that that I looked at that 11 are not necessarily specifically cited here. 12 Q Okay. So you may have looked at some 13 foundational papers and documents about 14 alpha-adrenergic receptors as part of preparing 15 your declaration that may not be cited in Appendix 16 B? 17 MR. LUNEACK: Object to the extent it 18 mischaracterizes. 19 A Yes. 20 Q Other than those foundational papers, are 21 there any other documents, journal articles, 22 patents, that you looked at for purposes of 23 preparing your declaration that are not listed in 24 Appendix B? 25 A I don't -- I don't believe so.
26 1 you -- 2 Q Absolutely, absolutely. 3 A Can you repeat what you said, I'm sorry? 4 Q For purposes of preparing your 5 declaration, you either cited or reviewed the 6 specific material that you listed in Appendix B 7 with the caveat that you may not have read every 8 word of every document? 9 MR. LUNEACK: Same objection. 10 A Yeah. I'm -- I think that -- I think that 11 that is a fair summary of what I -- what I did. 12 Q Are there any documents that you 13 specifically reviewed as part of the preparation 14 of your declaration that you didn't cite in 15 Appendix B? 16 MR. LUNEACK: Objection. 17 A Sorry for speaking over you, Matt. 18 MR. LUNEACK: That is okay. Objection, 19 vague. 20 A Yeah. I was just going to say it is a 21 little bit hard to be absolute on this. You know, 22 I would say -- so if you are saying was there -- 23 is there something I may have looked at to -- that 24 is not cited. I would say, again, there are 25 things that I -- and again I have -- there are	28 1 Q How was Appendix B prepared? 2 A This -- this was, again, just like -- just 3 like the rest of the document, as -- as I was 4 calling out various materials that I thought was 5 pertinent typically. And again I want to be a 6 little careful not to violate privilege, but, you 7 know, typically the counsel, the attorneys 8 would -- would retrieve the documents, and then, I 9 suppose, were capturing a list of those. 10 Q And then at some point this version of 11 Appendix B that was attached to your declaration 12 was provided to you; is that fair? 13 MR. LUNEACK: Objection. 14 A Yes, sorry. 15 MR. LUNEACK: Caution you not to reveal 16 the substance of any privileged communications. 17 Q And you specifically identified these 18 documents as the documents that you had available 19 to you for purposes of forming your opinions, 20 right? 21 MR. LUNEACK: Objection, mischaracterizes, 22 vague. 23 A Can you repeat the question? 24 Q Sure. The documents identified in 25 Appendix B were the documents that were available

29 1 to you in forming your opinions, right? 2 MR. LUNEACK: Same objections. 3 A Yeah. I think the word available -- I 4 mean, the documents were the ones that I was using 5 as I would -- as I was preparing the declaration. 6 Q Are you familiar with proceedings before 7 the Patent Office that are referred to as inter 8 partes review? 9 A I am familiar with the term, although I 10 don't know all the details of how that works. 11 Q Are you aware that plaintiffs have 12 asserted that Dr. Reddy's generic Lumify product 13 infringes multiple patents owned by plaintiffs? 14 A I have -- I am aware of that, yes. 15 Q And the proceedings that brings us here 16 today, these preliminary injunction proceedings, 17 you understand that those relate to one of 18 plaintiff's patents? 19 A Yes, I do. 20 Q Do you have an understanding that a three 21 judge panel that was sitting at the Patent Trial 22 and Appeal Board as part of an inter partes review 23 proceedings found a patent that was related to the 24 one that is currently being litigated invalid? 25 MR. LUNEACK: Objection, form.	31 1 do look at the patent literature. So if I have, I 2 wouldn't know because I don't know what else is -- 3 is relevant here. 4 Q What do you mean by that? 5 A So from time to time I will, you know, I 6 will -- could I work in the alpha-adrenergic area 7 I will look at patents that come up in the 8 alpha-adrenergic area. But again, this was -- I 9 wouldn't know whether they were -- whether -- I 10 would have read them in a different context and I 11 would not have known that they were part of 12 this -- these proceedings. 13 Q Fair enough. So as part of just you being 14 a participant in this field, you follow patents 15 and publications that come out from time to time? 16 MR. LUNEACK: Objection to the extent it 17 mischaracterizes. 18 A Correct. Yeah, as part of what I do, I do 19 look and see what is going on in the patent, in -- 20 in the -- in the academic and the scientific 21 literature and -- and patents that are relevant to 22 what I do. 23 Q And your point is as part of that review 24 of academic and scientific and patent literature 25 you may have come across the other patents that
30 1 A So I'm actually not -- we didn't -- this 2 is not -- this is not -- I haven't paid attention 3 to the specific details of the -- of the 4 litigation process. So you know, I understand 5 given the fact that this is an appeal that there 6 must have been some prior -- prior -- prior 7 decision. 8 Q To clarify, technically this is not an 9 appeal, it is a separate proceeding, but I'm just 10 trying to get your baseline understanding. So if 11 the answer is I don't know, that is okay by me. 12 I'm not trying to trick you, I just want to 13 understand -- 14 A Okay, okay. 15 Q Okay. 16 A I really have -- I'm not -- I have not 17 familiarized myself with the details of -- of what 18 has gone on prior to this. 19 Q Have you looked at any of the other 20 patents that plaintiffs have asserted against 21 defendants in this litigation other than the '245 22 patent? 23 A No. 24 Q Have you -- 25 A If I -- if I have, I wouldn't -- I mean, I	32 1 were asserted in this case, right? 2 A I may have. And yeah, I just -- yeah, I 3 just wanted to make sure it was -- yeah, it could 4 have happened, but again, it wasn't as part of any 5 -- I wasn't -- I wasn't -- I haven't been 6 specifically going back and looking at the -- at 7 the, you know, the history around this litigation. 8 Q And so you don't know sitting here today 9 what those other patents that are currently being 10 asserted against Dr. Reddy's are? 11 MR. LUNEACK: Object to the form. 12 A Yeah, I believe that is true. I don't -- 13 yeah, other than the one specific '245, I think, 14 patent, I do not know the others. 15 Q And you're not offering any opinions about 16 the relation of those other patents to the one 17 '245 patent that is at issue in this proceeding, 18 right? 19 A Yeah, I have not been asked to do that. 20 Q Why don't we go ahead and introduce what 21 has previously been marked as Exhibit 41. 22 REMOTE TECHNICIAN: Hang on counsel one 23 moment. 24 (Exhibit 41 marked.) 25 Q Dr. Gil, this will -- couple of ways we

33 1 can do this with exhibits. Actually -- actually 2 this one is probably not in your -- your printed 3 set of materials, so you can either download the 4 document from the chat if you want to do that or, 5 John, I think can give you ball control when he 6 shares his screen and you can manipulate the 7 document and you can do it that way? 8 MR. FREDERICKSON: Do I have that right, 9 John? 10 REMOTE TECHNICIAN: You do indeed, 11 counsel. Stand by, just a minute. Exhibit 41 is 12 on screen now, and Dr. Gil, you also have control. 13 It is also available in the chat if you would like 14 to download it and look at it locally. 15 Q We've -- we've previously marked as 16 Exhibit 41, it is a document issued from the 17 Patent Trial and Appeal Board in the matter of 18 Slayback Pharma, Petitioner versus Eye Therapies, 19 Patent Owner, IPR2022-00142, judgment final 20 written decision, dated May 15th, 2023. 21 Dr. Gil, feel free to take a moment to 22 scroll through this document. My question is 23 simply going to be have you seen this document 24 before? 25 A I don't believe so.	35 1 you see that? 2 A Yes. 3 Q And do you understand that -- that 4 reference, the Gil reference, to be a patent 5 application that names you as the first inventor 6 on it that issued on September 25th, 2001? 7 A Yes. 8 Q And you offered some opinions in your 9 declaration about the circumstances and the 10 interpretation of that Gil patent reference, 11 right? 12 A Yeah. I -- I offered -- yeah -- what -- 13 you know, what I -- what I view as what that 14 patent was about, yes, what that invention was 15 about. 16 Q Underneath Gil there is a reference 17 Walters, Footnote 4, Walters, et al, a Pilot Study 18 of the Efficacy and Safety of AGN 190342-LF 0.02 19 percent and 0.08 percent in Patients with Elevated 20 Intraocular Pressure. Do you see that? 21 A Yes, by the way, you may have heard, a 22 text did just come through totally unrelated. 23 Q Okay, thank you. I didn't hear, but thank 24 you for letting me know. 25 A Okay.
34 1 Q And so in forming your opinions for 2 purposes of these proceedings, you have not seen 3 the final written decision issued by the Patent 4 Trial and Appeal Board relating to U.S. Patent 5 Number 8,293,742; is that right? 6 A That is correct. 7 Q Can you just turn to page 5 of the 8 document? Sorry, page 6, one more. 9 Do you see a section there that says, The 10 Asserted Grounds of Unpatentability? Do you see 11 that? 12 A No, I'm still looking. Is that down below 13 or -- 14 Q No, it is right in the middle, E, The 15 Asserted Grounds of Unpatentability. 16 A Okay, yeah, yeah, I see it now, yes. 17 Q Underneath that section there is a -- 18 there is a table. Do you see that? 19 A Yes. 20 Q And on the right column there is a -- the 21 column is references/basis. Do you see that? 22 A Yeah. 23 Q The first reference there is Gil. And if 24 you track the footnote you will see Gil, et al 25 U.S. 6,294,553 B1 issued September 25th, 2001. Do	36 1 Q So you see that Walters reference in 2 Footnote 4? 3 A Yes, I see it. 4 Q Have you reviewed the Walters reference in 5 forming your opinions in this proceeding? 6 MR. LUNEACK: Objection, vague. 7 A So this appears -- so I'm not sure whether 8 this is just an abstract or whether this is an 9 actual publication. I have certainly -- I have 10 certainly reviewed -- first off, I am familiar 11 with that. I was at Allergan at the time that 12 that study was -- initial dose -- dose response 13 safety study was -- efficacy and safety study was 14 being performed. And I'm certainly familiar with 15 other material that reported on that. 16 I'm not sure I -- it is hard for me 17 without -- if you could -- if you have a copy of 18 that you can pull that up and I could more clearly 19 tell you whether I'm familiar with it. 20 Q Well, my question is more I'm trying to 21 understand what went into the opinions that you 22 formed. You listed a list of materials that you 23 considered and I didn't see this Walters 24 reference. So my question is, did you consider 25 this Walters reference as one of the materials you

37 1 considered in forming your opinions? 2 MR. LUNEACK: Same objection. 3 A So, and I did note, by the way, and sorry, 4 I should have mentioned this before. There is 5 actually two Derick references, and I think the 6 '95 is included here. There is also a 1997 Derick 7 reference that actually summarizes, I believe, 8 some of the same data that talks about -- that 9 references a study looking at .08 percent, 2 10 percent and .5 percent. 11 And so again, I'm -- I'm quite familiar 12 with that study. I'm not sure whether that -- I 13 don't know whether that -- so yes. So if your 14 question is was some of my opinion forming -- the 15 forming of that opinion based on data that -- that 16 was generated in the dose, clinical dose response 17 study, yes. That is certainly something that -- 18 that I have relied on. But again, without better 19 understanding Walters I have not -- I believe it 20 is the one and the same study. 21 Q Okay. So an author, first author, last 22 name Derick published two articles in 1995 and 23 1997; is that right? 24 A Yeah, so the '95 is in here. There was 25 also a '97 article that talks about, I believe,	39 1 Norden, Effect of Prophylactic Brimonidine Or 2 Bleeding Complications and Flap Adherence After 3 Laser in Situ Keratomileusis. Do you see that? 4 A Uh-huh, yes. 5 Q And it is referenced as the Norden 6 reference, do you see that? 7 A Yes. 8 Q In submitting your declaration for 9 purposes of these proceedings, did you read the 10 Norden reference? 11 A I did not read the Norden reference. 12 Q Are you familiar with the Norden 13 reference? 14 A Would you -- is it possible that you could 15 show it to me and I can give -- tell you one way 16 or another? 17 Q Well, looking at the title, can you tell 18 me if that is a reference that you considered in 19 forming your opinions for purposes of your 20 declaration? 21 A It is -- yeah, it is not something that 22 I -- I used to -- to form the declaration, no. 23 Q Footnote 6 refers to Dean, et al, Patent 24 U.S. 6,242,442 B1 issued on June 5th, 2001. 25 Do you see that?
38 1 the same dose response study. 2 Q Okay. And did Derick in 1997 test 0.02 3 percent of brimonidine? 4 A I believe that Derick was not 0 -- not 5 0.02 -- this is -- I see, I'm sorry. This is -- 6 this is 0.02, I'm sorry. You know, I missed, I 7 missaid that. I thought that was .2, okay. So 8 yeah, this one, again, I would have to see -- I 9 would have to see it, but that one I'm not 10 remembering. 11 Q So at least sitting here today, you don't 12 remember considering the Walters publication 13 discussing a pilot study of the efficacy and 14 safety of AGN 190342-LF, 0.02 percent and 0.08 15 percent in patients with elevated intraocular 16 pressure? 17 A I believe that's correct. I'm going to 18 blow this up a little bit. 19 Q Sure. 20 A Yeah. I'm not -- I do not have a 21 recollection of this particular -- again, if -- 22 yeah, it would be nice to be able to see it to be 23 able to -- to for sure say one way or another, but 24 I don't recall the .02 percent data. 25 Q Footnote 5 references a publication R.A.	40 1 A Yeah. 2 Q And it is referred to as the Dean 3 reference in Exhibit 41, right? 4 A Uh-huh. 5 Q You have to say yes or no. 6 A I'm sorry, I'm sorry. 7 Q That is okay. I should have told you that 8 earlier. 9 A Yes. Yes, I see that. 10 Q Did you read the Dean reference in forming 11 your opinions for purposes of your declaration? 12 A Yeah, is there a title to that that you 13 can tell me? It is a patent. 14 Q Yes. Brinzolamide and brimonidine in 15 treating ocular conditions. 16 A And who are the -- and who is the -- I 17 don't -- I mean that doesn't sound familiar to me. 18 Q Thomas Dean, Louis DeSantis, Billie York 19 from Alkem Laboratories? 20 A Yeah, I'm not -- I'm not familiar. 21 Q Put that away. Take that down. 22 Dr. Gil, I would like to talk a little bit 23 about your work experience. We've touched on it 24 briefly, but you got your Ph.D. in pharmacology in 25 1988; is that right?

41 1 A Ph.D. was in 1985. 2 Q Okay. Ph.D. was in 1985, then you did 3 three years of post doc? 4 A Yes. 5 Q And following your postdoc that was at the 6 Albert Einstein College of Medicine; is that 7 right? 8 A That's correct. 9 Q And following your post doc at the Albert 10 Einstein College of Medicine, you began your 11 career with Allergan, right? 12 A Yes. 13 Q And you started as a scientist in 1988; is 14 that right? 15 A Yes, I came in. I was Allergan's first 16 molecular biologist, so I was really brought in to 17 kind of -- to -- to work across the different 18 discovery research programs to clone the different 19 receptor genes that we were trying to target drugs 20 to. And then developing assays where we would use 21 those genes in different cells to be able to, 22 really the whole focus was to be able to better 23 identify drugs that were receptor selective, 24 right. 25 Meaning -- and this was, frankly my whole	43 1 this point was across the different discovery 2 research programs within Allergan? 3 A Yes, so I worked in that time on we had -- 4 we had a retinoid program in -- in dermatology 5 that led to the drug Tazorac. We were -- we had 6 the alpha-adrenergic program that led to the 7 Alphagan drugs. We had a -- we had the program, 8 the prostaglandin program that led to the glaucoma 9 drug Lumigan. So these were all -- and there was 10 -- there were a couple of other programs as well. 11 Q Now, how long when you first started at 12 Allergan was your responsibility around these 13 assays to determine receptor activation, receptor 14 blocking and the like? 15 A So it is a bit of a vague question. So I 16 would say in some ways my -- I mean, my -- as I 17 said my career was around looking for receptor 18 selective drugs. As I -- my -- after a couple of 19 years, after about four years -- four to five I 20 became -- and again, all that -- to clarify just 21 how we work, everything there -- everything was 22 teams, right. 23 So basically what that meant is that on 24 any given drug development, drug discovery team, 25 you know, we were working -- I was working with --
42 1 career has kind of been based around that, around 2 really better identifying drugs that selectively 3 worked on one -- on the desired receptor target 4 without -- without interacting with so-called 5 off-target receptors. 6 Q And in your work in this area involved 7 designing the assays that allow you to determine 8 whether a target is hitting a particular receptor 9 or not; is that fair? 10 A Yeah. At that point my -- my work was 11 right around -- and -- and again, all of this, 12 yes, was -- was working. And first I'm taking 13 these -- these, you know, we were -- it was at the 14 point where we were first -- it was at the 15 beginning of doing where you could ice -- clone 16 the gene, sorry, if I'm using technical terms, but 17 basically get a cell to -- to convert that gene 18 into a -- into the receptor protein and then 19 develop the assays that we could test the 20 different molecules. 21 And say, yes, this one turns on this 22 receptor or blocks this receptor, but only at a 23 much higher concentration does it have an effect 24 on a different -- different receptor. 25 Q Okay. And you mentioned that your work at	44 1 there would be chemists who were -- who were 2 making the molecules, there would be -- there 3 would be the biologists who would be testing the 4 molecules in animal models. 5 My -- my role was around making the assays 6 and testing the drugs in the cell-based 7 pharmacology screens. You know, we were working 8 with pharmacokineticists who were the -- who were 9 measuring the, you know, the distribution of the 10 drug in the -- in the animal models. 11 So then over time actually I ended up 12 becoming leader of the alpha-adrenergic research 13 team that is at Allergan. So it was kind of as I 14 gained more experience and seniority, I was then 15 put in charge of determining the direction, the 16 research direction of that alpha-adrenergic team. 17 Q When did you -- when were you put in 18 charge of the alpha-adrenergic team at Allergan? 19 A I believe it was right around 1995 or 20 1996, in the mid '90s timeframe. 21 MR. LUNEACK: Doctor, there is a copy of 22 your CV at Appendix A of your report if you need 23 it. 24 A That is a good reminder, thank you. I 25 don't remember whether it got into that detail or

45 1 not. 2 Q Let me know if anything in there refreshes 3 your memory. 4 A Yeah. I mean, this doesn't specify 5 exactly when I came -- led the alpha-adrenergic 6 team. I kind of remember it because it -- it -- 7 to some extent it was right around the time that 8 brimonidine or that Alphagan received its 9 marketing approval, so that, I believe, was 1996. 10 Q Okay. And so what did it mean to be put 11 in charge of the alpha-adrenergic team at 12 Allergan? 13 MR. LUNEACK: Objection, vague. 14 A So my role, then, became to determine -- I 15 mean, one of -- one of the key things -- so we -- 16 we had been developing brimonidine for -- for -- 17 to treat glaucoma. And one of the things became 18 -- that it became my responsibility to determine 19 how do we utilize the -- the -- you know, how do 20 we -- how do we direct the research that we want 21 to do. 22 So what -- you know, one of the things we 23 were -- you know, I talk about in my declaration 24 right, as we were, Allergan as the company was 25 very focused on repurposing and thinking about,	47 1 going to -- where else should we test this. We 2 also, you know, I work closely with the chemists 3 in terms of saying, hey, you know, there are -- 4 brimonidine is pretty good, but, you know, we 5 think that it still has got side effect issues and 6 we want to work on new chemistry to come up with 7 more selective drugs. 8 There were -- we knew there were three 9 different alpha-2 receptors and brimonidine was 10 not particularly selective between the three 11 alpha-2 receptors. It was, you know, as I talk 12 about and as you know, it was very -- it was very 13 selective for the alpha-2 receptor versus the 14 alpha-1 receptors. But within the alpha-2 15 receptor family, there was not a lot of 16 selectivity. So I was working closely with the 17 chemists to do that. 18 And then -- and then right around that 19 time as well we made a decision that we wanted to 20 explore -- it was known that -- that one of the 21 old alpha-2 agonist Clonidine had utility in the 22 treatment of pain. And so we started to -- I 23 really drove the direction and worked with our 24 commercial group to make a proposal that we should 25 start to look at alpha-2 -- alpha-2 agonists
46 1 okay, we have now -- we have that drug that is on 2 the -- you know, that is on the market for one 3 indication for glaucoma, what else can we do with 4 it. 5 And I think we were particularly good at 6 that, because unlike a lot of large pharmaceutical 7 companies that where the research divisions are 8 kind of broken up into, there are folks who are 9 working on each therapeutic area and they don't 10 necessarily talk to each other. At Allergan, 11 we -- we were one core research group. 12 And so part of my job was to say, hey, 13 we've got -- you know, we've got brimonidine, 14 we've got some other analogs of brimonidine that 15 have different receptor selectivities. Let's 16 test -- let's go talk to the folks in the -- in 17 the dry eye, doing dry eye research and have a dry 18 eye model. Let's go talk to the folks doing 19 retinal disease. Let's go talk to the dermatology 20 group and let's -- you know, and let's think about 21 where else might these drugs -- we have already 22 made this investment in the -- in the chemistry 23 where else might these drugs be useful. 24 And so, what one of my roles became very 25 much helping to direct, you know, where are we	48 1 including brimonidine in terms of whether they 2 had -- whether we could use them for the treatment 3 of pain. And that was both ocular pain, but also 4 we were very interested in looking at the 5 potential of treating systemic pain, you know, 6 pain -- pain -- chronic pain by oral 7 administration. 8 Q When did Allergan make the decision to 9 pursue brimonidine for the treatment of pain? 10 A So the -- in the end based on research 11 data we decided not to pursue it, right. So you 12 probably know that, you know, in the process there 13 is lots of research that will get done to generate 14 data to make a decision whether or not we want to 15 take a particular drug forward into clinical 16 development for various indications. 17 So I think we concluded that brimonidine, 18 because of its -- some of its side effects, 19 systemic side effects such as sedative activity 20 and cardiovascular effects was not -- was not the 21 right molecule to take forward and to treat oral 22 treatments of pain. 23 And, you know, specific to ocular pain, as 24 you know we generated data that was -- that is in 25 the -- my -- my patent application, but I think we

49 1 decided -- and I can't remember exactly when or 2 how that -- that decision got made, but it was 3 decided not to pursue that indication. 4 Q So when did you start working with the 5 commercial group to make a proposal that Allergan 6 should start to look at alpha-2 adrenergic 7 receptors for purposes of treatment of pain? 8 A I think that was probably around -- I 9 think that was probably around 1997. I seem to 10 recall we -- we -- you know, we sort of made -- 11 and part of that, by the way, was trying to speak 12 a little more in generalities, because I don't 13 know what is public information, but you know, we 14 also by that time we had also been working with 15 Botox. And so there was also a recognition that 16 Botox might have utility in pain indications. 17 And so I think that, it wasn't -- it was 18 sort of working across a couple of research teams 19 to say, hey, there is a potential here for us to 20 build out a pain program across a couple different 21 molecule programs. 22 My recollection is around '96, '97 I 23 started hiring in people who had pain research 24 backgrounds, so that is my recollection. Before 25 we did that, we must have had a -- we already had	51 1 alpha-2B and alpha-2C; is that right? 2 A That is correct, yes. 3 Q So based on some of the published work 4 involving, was it brimonidine, your team thought 5 there may be utility in pursuing an alpha-2 6 adrenergic receptor agonist for pain? 7 A Yes, based on clonidine, yes. Clonidine 8 as a drug, yes. 9 Q Go ahead. 10 A Yeah, clonidine which was, again, was an 11 old drug, I believe, right around that time was 12 approved by the FDA for spinal delivery of what 13 was called intrathecal delivery to treat, I 14 believe, cancer pain. 15 Q And Clonidine is an alpha-2 adrenergic -- 16 A It is an alpha-2 adrenergic agonist. 17 Q Agonist. 18 A Although, again as you know, I think you 19 know, but the mantra here in pharmacology is dose 20 matters and nothing is really truly selective. 21 But clonidine, while it is thought of as primarily 22 an alpha-2 agonist, certainly does have alpha-1 23 activity. 24 Q Okay. But based on the published reports 25 and the approval of clonidine for at least some
50 1 some buy in to be thinking about -- about pain and 2 systemic drugs. 3 Q So around late 1996, sometime in 1997, you 4 and your team started pursuing a potential 5 proposal for brimonidine in the treatment of pain? 6 A No, I want to be clear. It wasn't 7 specific to brimonidine. It was around the use 8 looking at broadly across the alpha-adrenergic 9 molecule platform, whether there were, you know, 10 the idea was to look at -- at -- you know, to do 11 chemistry to develop molecules that had different 12 selectivities across the alpha-adrenergic 13 receptors then ask, you know, what activities did 14 those molecules have and basically try to -- try 15 to come up with a molecule that worked in pain 16 without having side effects. 17 Q So there is two big classes of 18 alpha-adrenergic receptors; is that fair? 19 A Yes, that is alpha-1 and alpha-2. 20 Q Correct. 21 A Yes. 22 Q And within the alpha-2 adrenergic 23 receptors there are three subtypes, right? 24 A Correct. 25 Q And those are referred to as alpha-2A,	52 1 treatment -- utility in the treatment of pain, you 2 and your team thought to research other alpha-2 3 adrenergic receptor agonists for treatment of 4 pain? 5 MR. LUNEACK: Objection. 6 A Yes. And the reason that -- I mean, 7 clonidine needed to be dosed intrathecally, 8 because it had -- that was -- that was the only 9 way one could do it to avoid the side effects of 10 sedation and blood pressure drop. And obviously 11 having to provide the drug intrathecally that 12 means it is only in the inpatient setting, and 13 therefore, very limited. 14 And you know, our thinking was if that -- 15 there was an opportunity to come up with more 16 selective drugs that could be -- that didn't 17 require -- that were going to have less sedation 18 and less cardiovascular effects, and hence, could 19 be dosed orally and be used by a broader portion 20 of the population. 21 And, you know, kind of the holy grail at 22 that point and still is the holy grail in pain is 23 to come up with non-addictive pain drugs that are 24 alternatives to -- to the opioids. 25 Q So the thinking with your team at Allergan

53 1 at the time was to see if -- to investigate 2 whether alpha-2 adrenergic antagonists that had 3 different selectivities within alpha-2A, alpha-2B 4 and alpha-2C would treat pain and have a 5 more favorable side effect profile? 6 A Let me correct you, it was alpha-2 7 agonists. 8 Q Agonists, so I will try to ask the 9 question again. So the thinking of your team at 10 the time was to investigate whether alpha-2 11 adrenergic agonists had different activities with 12 alpha-2A, alpha-2B and alpha-2C, would treat pain 13 and a more favorable side effect profile? 14 MR. LUNEACK: Object to the form. 15 A Yeah. And also, I will just add to that, 16 that certainly the thinking was we would look as 17 we developed these -- these newer molecules, we 18 would look at their utility for other indications 19 important to Allergan as well. So certainly we 20 weren't -- we weren't losing site of the fact we 21 were an ophthalmic company. So as we were 22 generating these molecules, the idea was likewise 23 to look at them in -- in -- in different models of 24 ocular disease. 25 Q We have been going for a little longer	55 1 strategic point of view, the company was thinking, 2 you know, there might be an opportunity here 3 particularly, you know, since we were getting more 4 into the neurology space with the -- with Botox 5 that this was a -- there was some good synergies 6 there. 7 Q And one of the issues that you were 8 exploring for an oral medication for pain 9 treatments is that the alpha-2 adrenergic receptor 10 agonists were associated with side effects in the 11 cardiovascular system and sedation; is that right? 12 A Yes, that's correct. 13 Q And an oral medicine is a medicine that a 14 person takes through the mouth and it goes through 15 the GI tract, right? 16 A Yes. 17 Q And the hope is some of it makes its way 18 -- some of the medicine makes its way into the 19 bloodstream, right? 20 A Yes, that's correct. 21 Q And when the medicine makes its way into 22 the bloodstream, that is where you can have some 23 potential side effects because blood goes 24 basically everywhere in the body, right? 25 A Yes, correct. And then particularly for
54 1 than an hour, how about we take a 5- or 10-minute 2 break? 3 A That is good for me. 4 VIDEOGRAPHER: We're going off the record, 5 the time on the monitor is 10:13 a.m. 6 (Recess, 10:13 to 10:20 a.m.) 7 VIDEOGRAPHER: We're now back on the 8 record, the time on the video monitor is 10:20 9 a.m. You may proceed. 10 Q So Dr. Gil, during the time that you were 11 working in evaluating alpha-adrenergic receptor 12 agonists for the potential treatment of pain, were 13 you principally looking for oral treatments? 14 A Yes. 15 Q And why, again, were you looking 16 principally for oral treatments? 17 A Well, in terms of the treatment of pain, 18 that was considered the kind of -- I guess, you 19 would say the largest market opportunity as well 20 as the largest unmet need medically. So I think 21 we felt like that was -- yeah, that was -- that 22 strategically made sense for the company. 23 But as I said it didn't mean that we 24 weren't -- we weren't ignoring ophthalmic 25 opportunity there, but -- but it just again from a	56 1 -- for -- in the case of the alpha-2 agonists if 2 they -- some amount of that drug crosses the 3 blood-brain barrier, and then acts on the brain. 4 And so that is where a lot of those side effects 5 will have occurred. 6 I do -- I do want to add that even with 7 local therapies so even when you give somebody an 8 eyedrop, you know, a surprisingly high percentage 9 of an eyedrop actually can end up in the systemic 10 circulation in your blood as well. Because there 11 are -- you have in your eye what is called the 12 nasolacrimal duct. And it is kind of sitting 13 right -- right kind of near your -- your nose kind 14 of where your eye meets your nose. And that -- 15 that is a drainage system that drains and 16 ultimately will -- can get drugs into the -- into 17 the bloodstream as well. 18 Q Certainly -- go ahead. 19 A And so, you know, there were certainly 20 cases with alpha-2 agonists that -- that if you 21 dose them high enough you could also see side 22 effects such as sedation. 23 Q So certainly there are instances when an 24 eyedrop, the drug that is in the eyedrop can make 25 its way into the bloodstream as well, right?

57 1 A Yes. 2 Q And you said if you dose them high enough, 3 that the drug in that eyedrop will makes it way -- 4 can make its way into the bloodstream, right? 5 MR. LUNEACK: Form. 6 A Yeah, I mean -- right, the drug can make a 7 way at a sufficient concentration to -- to have 8 a -- to have an effect, yeah. 9 Q And whether and to what extent an eyedrop, 10 the drug in an eyedrop makes its way into the 11 bloodstream depends among other things on the 12 concentration of the drug that is being 13 administered in the eyedrop? 14 A That is certainly -- yes, that is 15 certainly one factor, yes. 16 Q And the properties of the drug itself may 17 also factor into whether and to what extent it is 18 absorbed into the bloodstream through an eyedrop, 19 right? 20 A That is -- that is correct. Just the 21 chemical, the physiochemical properties around 22 lipophilicity, around absorption through 23 transporters, yeah there is a whole host of 24 reasons for why different drugs may get more or 25 less into the bloodstream.	59 1 physiochemical property of the molecule itself in 2 terms of whether -- whether it will -- how much of 3 it will get into the -- into the bloodstream. 4 Q The sedation side effect that was 5 associated with alpha-2 agonists that required the 6 drug to be in the bloodstream, right? 7 A Yeah, it not only requires you to be in 8 the bloodstream, but then as I mentioned before it 9 requires it further to cross the blood-brain 10 barrier. So there is a biological barrier that -- 11 between the bloodstream and the brain that can 12 also -- that is also dependent on physiochemical 13 properties of the drug in terms of how well it 14 gets into the brain. 15 Q Right. And so the sedation side effect 16 was associated with alpha-2 receptor agonists 17 making their way into the brain? 18 A That is correct. 19 Q And the cardiovascular side effects 20 associated with alpha-2 receptor agonists involved 21 them getting into the heart tissue? 22 MR. LUNEACK: Objection, vague. 23 A So that is more complicated. There are 24 both -- there -- so there are a number of -- so 25 first off, there are a number of different
58 1 Q And the formulation of the eyedrop may 2 also play some part into whether and to what 3 extent an active ingredient in an eyedrop makes 4 its way into the bloodstream, right? 5 A Yes, yeah. I think probably a little bit 6 to a lesser extent, but it can -- it can 7 certainly -- if it -- you know, because I think a 8 lot of what the initial movement of the drug into 9 the nasolacrimal duct is largely kind of a mass 10 action. You know, you are -- you are tearing and 11 the washing of your tears from the eye, but 12 presumably -- yeah, presumably the actual 13 formulation could have some influence. 14 Q But in your view, it is the concentration 15 of the drug that is administered and the 16 properties of that drug which will have the -- the 17 most say into whether and to what extent the drug 18 makes its way into the bloodstream from an ocular 19 drop? 20 MR. LUNEACK: Objection, form, 21 mischaracterizes. 22 A I think that is a -- that is a -- that 23 is -- yeah -- that is a good summary of how I 24 would think about the -- the two major components. 25 The two major factors are concentration and -- and	60 1 cardiovascular effects, right. You can speak 2 about the actual -- there is -- there is an effect 3 on heart rate, there is effects on blood pressure. 4 And some of those effects are actually effects, 5 but speaks -- let's -- and again, let's speak 6 initially about alpha-2 agonists and effects on 7 alpha-2 receptors. 8 So there are alpha-2 receptors that 9 control the -- regulate the release of the 10 adrenergic neurotransmitter norepinephrine. And 11 so the alpha-2 agonists will decrease the release 12 of the neurotransmitter. So there can be -- and 13 the -- the neurotransmitter norepinephrine, which 14 will typically have an effect on the heart to 15 increase heart rate as well as strength of 16 contractions. 17 So an alpha-2 agonist by inhibiting the 18 norepinephrine can result in a slowing of the 19 heart and a slowing of cardiac output, which -- 20 which could result in conditions such as 21 hypotension, a drop in -- a drop -- a drop in 22 cardiac output could result in -- in decrease -- 23 overall decrease in blood pressure. 24 Likewise, alpha-2 receptors -- there are 25 also alpha-2 receptors directly on blood vessels.

61 1 And -- and those can -- on the smooth muscle that 2 controls blood vessels. And they're very -- that 3 gets very complicated. They're very specific and 4 different effects of alpha-2 receptors on 5 different vascular beds in different tissues in 6 our body. And so there can be -- so alpha-2 -- 7 alpha-2 effects can also alter -- alter the local 8 dilation or contraction of the blood vessels. 9 And then there are, as well, effects at 10 the central -- in the brain that can also more 11 globally have effects on blood pressure, decreased 12 blood pressure and slow heart rate. So it is a 13 very complex interrelated system. 14 Q Fair enough. You use the phrase 15 "different vascular beds." What is a vascular 16 bed? 17 A So it -- the way I think about that would 18 be the -- the blood vessels that are -- that are 19 taking blood in and out of a particular organ in 20 our bodies. So I would think about a vascular bed 21 in the liver, a vascular bed in the kidney. And 22 you know the body actually has reasons why it 23 might want to have fine control. 24 And for instance, when you -- when you eat 25 a big meal, the body wants there to be more blood	63 1 Q Why did Allergan shutdown the program? 2 A That was the recession, you know. And 3 basically, you know, there was basically a 4 retrenchment in terms of a reevaluation of 5 strategic focus I would say, let's say that. 6 Q And so following 2008, what did you do at 7 Allergan? 8 A So I took on -- I'm going to refer to the 9 CV, make sure I'm telling you this correctly. 10 Yeah. So by that -- so by that time, I had -- I 11 had become -- I had become a vice president at 12 Allergan, and so I was taking on larger oversight. 13 I also had led, by that time, I didn't really talk 14 about this, but you know, one of the nice things 15 that I -- that was also -- that you could do at 16 Allergan was that even though I was sort of 17 started as a research scientist, as molecules came 18 out of my research program and moved into clinical 19 trials, I had the opportunity then to work and 20 lead the clinical -- clinical development teams. 21 And I had that opportunity in a number of pain 22 programs as well as several glaucoma programs. 23 And -- and so, you know, I would -- I 24 started to become more involved in overseeing just 25 the overall research pipeline and the transition
62 1 flow going to the -- to the digestive tissues and 2 less to the skeletal muscle, for instance. And so 3 there is kind of opportunities for fine control of 4 -- fine and local control of blood flow to these 5 different organs. 6 Q And so when we talk about the effects of 7 alpha-2 receptors and activating those receptors, 8 that activation will have a different impact -- 9 can have a different impact on different vascular 10 beds; is that fair? 11 MR. LUNEACK: Objection, vague. 12 A Yeah. The action of -- the action of a 13 drug of an alpha -- the activation of an alpha-2 14 agonist on different vascular beds can be 15 different, yes, and also dependent on state of 16 whether a person or animal is stressed or not 17 stressed because there is different levels of 18 noradrenergic tone. 19 Q So going back to your employment at 20 Allergan, how long were you responsible for the 21 alpha-2 adrenergic pain work being done within the 22 company? 23 A I was overseeing that, as I said, from 24 approximately 1996 to 2008. And in 2008 we kind 25 of -- we shutdown the -- we shutdown the program.	64 1 of the pipeline into clinical -- into clinical 2 trials. 3 I also at that point or soon after, I 4 think it was -- you know, I had talked about 5 repurposing, right. And so we had started to 6 formalize that a little bit more so that we were a 7 little bit more, what is the right word that -- a 8 little -- we were a little bit more. The word is 9 escaping me but, you know, more -- more directed 10 and more focused in terms of let's -- you know, 11 rather than just letting it happen, let's -- let's 12 actually have a team of people who are really 13 focused on thinking about repurposing. 14 And so that -- you know, that was a role I 15 kind of took on as well to more directly lead -- 16 lead that effort, not just -- not just in -- in 17 the adrenergic area, but more across broadly other 18 programs. 19 And we continued the -- we continued to do 20 alpha-adrenergic pharmacology. And we were 21 focused more, then we refocused that effort in 22 terms of more going more ophthalmology. So we 23 were looking, for instance, a lot at 24 alpha-adrenergics and retinal disease. I got more 25 involved as well and I hadn't really done much in

65 1 the retinal disease area. We started getting a 2 little more -- I was getting a little more 3 involved. Again, it was part of it because I was 4 now overseeing groups in addition to the one -- to 5 the -- to the alpha-adrenergic group, so I got a 6 little more involved in some of the other research 7 programs as well. 8 Q Your work on the -- working on the with 9 the clinical development team and involvement in 10 any of the clinical trials, did that involve any 11 of the Alphagan products? 12 A I was -- I was not directly involved with 13 the clinical work on the -- on the Alphagan 14 products. So -- so yeah, no. So for instance, 15 Alphagan, Alphagan P Combigan, I was not involved 16 in clinical development of those, but being -- but 17 being alpha-adrenergic team leader, I was -- I was 18 certainly -- so I would certainly sit in on -- on 19 various clinical team meetings where those were 20 discussed, but I wasn't driving the clinical 21 development. 22 Q Who was driving the clinical development 23 at that point in time when you were team leader 24 for the Alphagan products? 25 A Yeah, I'm not sure I should disclose that.	67 1 development the hardest -- sometimes the hardest 2 part is to get a drug that you get -- that 3 actually you get to the -- you do all the work, 4 you figure out, you get it -- you get it into 5 humans and you say, hey, it is pretty safe. 6 And so I think philosophically the idea 7 there is -- there is an efficiency in drug 8 development if you can take a drug that you 9 already have put all of that initial effort into 10 and -- and use it for more than one indication. 11 And it was scientifically based as well, 12 because we -- there was a recognition that the 13 body constantly reuses different receptors and 14 different enzymes, and whatever -- whatever a drug 15 targets to get reused over and over in different 16 parts of the body. So it seemed to us it made a 17 lot of sense to say let's make sure as we -- as we 18 -- either to take our drugs or drugs that other 19 companies had developed and let's understand where 20 else it can be used. 21 And you know as I talk about in the 22 declaration, you know, my God, the success of 23 Allergan was totally based on that principle, 24 right. Brimonidine started as a -- was a -- was a 25 cardiovascular drug that Pfizer originally
66 1 I suspect that is confidential information. 2 Q Just the person -- 3 A You are asking what -- 4 Q Yeah, the person's name? 5 A Yeah, I don't -- I don't know whether I'm 6 supposed to say that or not. I'm not -- is it -- 7 I'm not sure how that is pertinent and I think 8 that is confidential. 9 Q So you're not going to tell me the 10 person's name at Allergan who was running the 11 clinical development of the Alphagan products when 12 you were team lead? 13 MR. LUNEACK: Objection, asked and 14 answered. 15 Doctor, if you don't think you can say, 16 that is fine. 17 A Yeah, I'm not sure -- if it is not public 18 information, I'm not sure I should be disclosing 19 that. 20 Q Okay. What was the purpose of the drug 21 repurposing program at Allergan? 22 A I'm laughing at the question, the purpose 23 of repurposing. 24 So you know, the goal of that program, 25 so -- so, you know, philosophically in drug	68 1 developed. And -- and, you know, the basis of the 2 Alphagan program was that we -- we, you know, 3 we -- we wanted to come up with more -- with drugs 4 that were more alpha-2 selected versus alpha-1 5 compared to clonidine and apraclonidine. 6 And so we -- we screened through a lot of 7 known alpha agonists and said, hey, here is one 8 that is -- here is brimonidine. It is much more 9 alpha-2 selective. You know, that is how we got 10 there. 11 And then the story of -- of the 12 bimatoprost that started as a glaucoma drug 13 Lumigan and then folks -- it was actually reported 14 to us that some people were reporting that their 15 eyelashes were growing longer and so we said let's 16 take advantage of that. 17 And then likewise, you know, the Botox 18 story very much was all about repurposing, because 19 that started as a -- that actually started as an 20 orphan drug for some very small therapeutic 21 indications, strabismus and blepharospasm. And -- 22 and, you know, then we recognized over the years 23 all these other utilities for -- for Botox, 24 whether it be -- whether it be the aesthetic uses 25 or whether it be migraine or overactive bladder.

69 1 So you know, that was sort of engrained 2 into the Allergan philosophy. And yeah, so I 3 think it was -- you know, we had always done it 4 and it was -- it was a matter of when we kind of 5 formalized the repurposing team it was, let's -- 6 let's even be more -- more focused on this. 7 Q So one of the motivations behind the 8 repurposing team at Allergan was the recognition 9 that one of the hardest parts in drug discovery 10 and development is actually getting a drug from 11 the chemistry stage into humans safely, right? 12 A Yes. 13 Q And by -- by starting -- by using 14 repurposed drugs, a lot of the work improving the 15 safety of that particular drug at least for some 16 uses had been established, right? 17 A It has been -- right, to use the term that 18 always gets used derisked. There already had been 19 some derisking, yes. 20 MR. LUNEACK: Doctor, if you could just 21 pause a little bit so I can get an objection out 22 that would be appreciated. 23 Q And derisking that is an industry term in 24 the biotech and pharmaceutical industry, right? 25 A Yes. That is -- yeah, commonly used term,	71 1 You should -- if you have your -- your exhibits 2 cited in your declaration, you should have this 3 one, because I think it is your patent. 4 (Exhibit 36 marked.) 5 A Yes. 6 Q And so Dr. Gil, you recognize Exhibit 36 7 to be a patent with a number 6,294,553 that 8 identifies you as the first inventor? 9 A Yes, I do, yes. 10 Q Who is Michael Stern? 11 A Dr. Stern was the -- led the dry eye 12 research efforts at Allergan, the preclinical 13 research. 14 Q And who is John Donello? 15 A Dr. Donello was a -- was a colleague of 16 mine who was also conducting alpha-adrenergic 17 research. 18 Q Did either Dr. Stern or Donello report to 19 you at this time in 2001? 20 A I think both of them at one point or 21 another did, but I think at this time neither of 22 them did. 23 Q What were the circumstances that led the 24 three of you to do some of the work that is 25 described in this patent application?
70 1 right, yes. 2 Q And that refers to the concept that there 3 is a -- there is a drug discovery pipeline or 4 funnel. I'm sure you have seen it in some 5 presentations over the course of your career; is 6 that fair? 7 A Yeah. Really the concept that the 8 probability of success when you are -- you know, 9 when you are in the laboratory and working 10 preclinically, it is kind of a 1 in 100 or 11 probably even worse, that, you know, the odds of a 12 drug that you are working on at the lab stage ever 13 making it to being an approved drug are really 14 low. 15 And so yeah, if you can -- if you can 16 decide to work on things where some of the -- 17 where some of the risks have already been taken 18 out of the equation or you have already dealt with 19 some of those risks, your odds and your 20 probability of being successful are -- are higher. 21 And just from a company deciding what to invest 22 their research dollars in, there is a efficiency 23 in working on programs that are -- that have -- 24 have been derisked to some extent. 25 Q So let's go ahead and pull up Exhibit 36.	72 1 MR. LUNEACK: Objection, vague. 2 A So, you know, as we've talked about this 3 was, I think, a great example of how we did 4 repurposing. That, you know, we wanted -- we had, 5 as I said, we had -- we had brimonidine and it was 6 -- as an eyedrop. And so we felt like we should 7 -- and -- and we also knew by this time alpha 8 agonists had the potential for treatment of pain. 9 And so we felt like this was a very logical thing 10 for us to -- a set of studies to do to try to 11 understand whether brimonidine could be used for 12 the treatment of ocular pain. 13 Q So the work described in the Gil patent 14 reference, this is an example of repurposing work 15 that was being done within Allergan at the time? 16 A Yes, that's correct. 17 Q And the reason that you and your team 18 wanted to start with brimonidine was by 2001 19 brimonidine was a commercially available FDA 20 ocular drop, right? 21 MR. LUNEACK: Object to the form. 22 A Yeah, that is correct. Yeah, brimonidine 23 as Alphagan was already on the market, had been 24 FDA approved. So yeah, it made sense for us to 25 think about what else could this be used for.

73 1 Q And at the same time or at least by 2001 2 you and your team were also aware that alpha 3 agonists had the potential for treatment of pain, 4 right? 5 A Yeah. As I said, yeah, that is exactly 6 right, yes. 7 Q So what you and the team decided to do was 8 to take -- to repurpose brimonidine and 9 investigate whether it would be useful in the 10 treatment of pain as part of this patent 11 application; is that right? 12 A That is correct. 13 Q What was your role in the work that is 14 being described in the patent application? 15 MR. LUNEACK: Object to the form. 16 A So again, it is -- it is a long time ago. 17 So I frankly don't remember the specifics given 18 that I was adrenergic team leader in that point of 19 time. And, you know, that -- I think I was 20 probably involved in this at the level of thinking 21 about -- you know, thinking about this would be 22 good experiments for us to do. 23 And but I don't think I -- I doubt that I 24 was involved in the -- in sort of the direct 25 oversight of the -- I'm pretty sure I was not	75 1 Donello? 2 A If there was, I can't -- I don't recall. 3 Q You testified -- 4 A I was seeing whether it was alphabetical, 5 but it is not so I am not sure. 6 Q I thought that, too, and that is why I 7 asked the question. So you don't know if there is 8 any significance as to the order of the listing of 9 the named inventors on this patent, right? 10 MR. LUNEACK: Asked and answered. 11 A Yeah, that's correct. 12 Q Do you remember any conversations that you 13 had with Dr. Stern and Dr. Donello concerning the 14 experimentations that led to this '553 patent? 15 A No, I do not. I would say the one thing 16 -- let me take -- let me change that a little bit. 17 I would say the one thing that I do remember, and 18 again, this -- this sort of came from my 19 experience in the pain research area, was that we 20 wanted to understand the difference between a more 21 anesthetic type of pain reduction, which was not 22 something we were going for versus a reduction of 23 -- a reduction of pain. 24 So the distinction being that an 25 anesthetic inhibits all sensation including, you
74 1 involved in the direct oversight of the 2 experiments. 3 Q So by the 2001 time period when -- well, 4 the 2000 to 2001 time period roughly when this 5 work was being performed, you were in a team lead 6 capacity? 7 A Yes. 8 Q And would you -- would it be fair to 9 characterize your role as more supervisory than, 10 you know, doing the nitty-gritty of the 11 experimentation? 12 MR. LUNEACK: Objection, form. 13 A Yeah, I was not -- I was not doing the 14 experimentation. I would have been involved in 15 kind of talking to Dr. Stern and Dr. Donello and 16 saying, hey, this would be a great set of studies 17 to do, you know, let's plan to do this. 18 I would have been involved in reviewing 19 the research data as it came in and then in -- 20 in -- in making that we should, you know, along 21 with -- with others that we should file a patent 22 on -- on the results. 23 Q Was there any significance in the sequence 24 of who is listed as a named inventor, you being 25 first followed by Michael Stern followed by John	76 1 know, this -- this sensation of -- of light touch 2 or the like, whereas, the drug that is really a 3 pain drug is a drug that only inhibits the 4 excessive nerve stimulation associated with a 5 painful response. 6 Q So why -- why is that significant to this 7 patent that -- 8 A Because a drug that would have -- would be 9 anesthetic would not be something you would want 10 to -- to use, because if you -- if you don't have 11 the ability to even sense that there is -- you 12 know, there is a little bit of dust or particle 13 that has fallen into your eye, if you -- if you -- 14 if you remove all corneal sensation there is a 15 real risk that, you know, you're not -- you don't 16 have -- you are not properly -- you are -- your 17 ducts that normally secrete the tear film, et 18 cetera, won't be properly stimulated to wash the 19 eye, et cetera. 20 So you know, having something that 21 would -- that would basically anesthetize the 22 ocular surface for prolonged periods of time would 23 be medically not advised. 24 Q And brimonidine was that an anesthetic? 25 A No.

77 1 Q And so the reason that you and your team 2 were looking at brimonidine was because it had 3 potentially the mechanisms of preventing the 4 sensation of pain but not numbing the eye 5 entirely? 6 MR. LUNEACK: Object to the form. 7 A That is -- yes, that was -- that was the 8 goal of the -- of the work. 9 Q So you recall discussing with Dr. Stern 10 and Dr. Donello that the goal of the work was to 11 investigate brimonidine, because it had this non 12 anesthetic potential pain relieving property? 13 MR. LUNEACK: Objection, mischaracterizes. 14 A Yeah. The goal of the work was to see 15 whether brimonidine potentially could be used to 16 -- as a treatment for ocular pain without -- 17 without causing a complete numbing of the corneal 18 surface. 19 Q Other than discussions around the overall 20 goal of the projects, do you recall any other 21 discussions you had with Dr. Stern or Dr. Donello 22 concerning the work described in the Gil patent? 23 A I do not recall, no. 24 Q Do you know -- well, we can get to that in 25 a second actually.	79 1 A I don't -- I don't recall a formal written 2 policy. I think it was more at -- it was really 3 more the various team leaders would -- would kind 4 of determine whether or not to -- to submit a 5 record of invention. 6 Q And how was that submission made? Was it 7 just an email, a presentation during a meeting? 8 Was there a special, you know, network drive or 9 location where that information was stored? 10 A Yeah. Well, all -- all -- all record of 11 inventions were stored. And then -- and this was 12 so long ago I can't remember what we had in the 13 way of network drives, but I think we were still 14 in the paper copy phase. But yeah, things were 15 put in a blue envelope and sent over to legal is 16 my -- is my -- is probably the way that worked in 17 that timeframe. 18 Q What about, like, lab notebooks? Were 19 those maintained or required to be maintained as 20 part of this process? 21 A Oh, yeah, absolutely. And you know, lab 22 book -- lab notebooks were, you know, signed and 23 witnessed. And my recollection is that the record 24 of inventions would cite -- would cite the lab 25 notebooks.
78 1 Was there a formalized process within 2 Allergan for seeking approval of a patent 3 application? 4 A Typically the way it worked was that there 5 was a patent attorney assigned to each program. 6 And we would -- and so, you know, I would -- and I 7 would typically meet with them on a regular basis 8 to review both, you know, the status of existing 9 patent applications or office actions as well as 10 new -- you know, we would file a record of 11 invention, so there was a record of invention 12 process you would fill out. 13 You would fill that record of invention 14 out and that covered the -- you would include the 15 data in it. And -- and that would -- so the next 16 time you would meet with the patent attorney after 17 a record of invention was filed, that would be -- 18 you know, we would discuss what the -- whether 19 this was something we should go ahead and -- and 20 start to prepare a patent on. 21 Q Was there -- was there a policy or process 22 in Allergan of how scientists informed -- how 23 scientists would understand whether to submit one 24 of these records of invention? 25 MR. LUNEACK: Objection.	80 1 Q Did scientists, inventors, did they get 2 any recognition within Allergan if a patent 3 issued, a certificate, bonus, anything along those 4 lines? Was there any incentives in play? 5 A We got a dollar. 6 Q For assigning your patent to Allergan, 7 right? 8 A Yes. 9 Q But that is it, nothing else? 10 A No. 11 Q Okay. 12 A That was quite a -- some of us used to 13 just collect the dollars and I would write my -- I 14 would write little notes on the dollar bill as to 15 what it was for. I had an envelope with them. 16 Q Do you know what Dr. Stern's contribution 17 was to the Gil patent reference? 18 MR. LUNEACK: Objection, asked and 19 answered. 20 A Again, I don't remember the details, but I 21 would suppose that since he was leading the dry 22 eye research team, he would have been -- he would 23 have overseen the selection of the model and -- 24 and the actual running of the study. 25 Q But you don't have any present

81 1 recollection of what Dr. Stern's contribution was? 2 MR. LUNEACK: Same objection. 3 A That is correct. 4 Q Do you have any present recollection of 5 what Dr. Donello's contribution was to this Gil 6 patent reference? 7 MR. LUNEACK: Same objection. 8 A Dr. Donello and I were kind of -- we were 9 very -- how would I describe this. We were -- we 10 were scientifically -- we were like scientific 11 buddies. We would talk -- we would talk on a very 12 frequent basis about the alpha-adrenergic program. 13 So he would -- I would say probably partner with 14 me in terms of thinking about running the studies 15 and -- and sort of at a high level the design of 16 the studies. 17 Q But do you have a present memory of those 18 conversations with Dr. Donello about this 19 patent -- 20 MR. LUNEACK: Objection. 21 Q -- the studies described? 22 MR. LUNEACK: Objection, asked and 23 answered. 24 A Yeah. The detail, I don't recall the 25 details.	83 1 And -- and so looking -- as we talked about 2 looking at ocular pain was certainly one area of 3 interest given that Alphagan was already on the 4 market as an eyedrop. 5 Q If we go ahead and scroll down to the 6 first column in the Gil patent reference past some 7 of this and I will direct you to line 16. Line 8 16, Column 1 starts, Pain is a well-known 9 phenomenon as an indicator of injury or tissue 10 damage due to inflammation, ischemia, mechanical 11 or other irritation; is that correct? 12 A I see that. 13 Q And what is inflammation? 14 MR. LUNEACK: Object to the form, vague. 15 A So inflammation is -- is a very vague 16 term. It is -- it is a real catchall in my mind 17 for -- for any kind of immune response or response 18 of our immune system, which -- which encompasses a 19 whole range of different cell types to a -- kind 20 of a foreign agent in their bodies such as a 21 bacteria or virus or some damage to a tissue in 22 our body. 23 Q And inflammation is an umbrella term that 24 refers to the body's immune response when there is 25 some foreign agent or bacteria or virus or damage
82 1 Q Do you have any memory of the 2 conversations you had with Dr. Donello about the 3 patent and the experiments described in it? 4 A I think I've said that I don't have -- I 5 don't have any memory of specific conversations 6 with Dr. Donello about this -- about this patent 7 or about the research planning. 8 Q So the title of the patent is a method for 9 treating ocular pain. And we've talked about one 10 of the research interests of you and your team 11 within Allergan was to come up with alpha-2 12 receptor agonists for purposes of pain treatment; 13 is that right? 14 MR. LUNEACK: Object to the form. 15 A I'm not sure what the question was, can 16 you repeat that? 17 Q Sure. So the title of this patent is a 18 method for treating ocular pain. Do you see that? 19 A Yes. 20 Q And ocular pain was one of the areas that 21 you and your team investigated the use of alpha-2 22 adrenergic receptor agonists, correct? 23 A Yeah. More generally that we -- yeah, we 24 were -- that we were interested in exploring the 25 use of alpha-2 agonists in the treatment of pain.	84 1 in the body. 2 MR. LUNEACK: Object to the form. 3 A Yeah, that -- that is, I think, that is 4 more or less what I said, yeah, yeah. 5 Q Ischemia, what does that refer to? 6 A That refers to a condition where there is 7 decreased oxygenation of a tissue in the body. 8 Q And then mechanical or other irritation, 9 what does that refer to? 10 A So pain is -- so, you have different -- so 11 you have different sensory fibers, nerve fibers in 12 your body that are actually very acutely sensitive 13 to different types of stimuli. So a mechanical 14 stimuli could range from very innocuous types of 15 sensations, such as light touch to -- to things 16 that more stronger, pressing on the -- on -- on a 17 tissue such as the skin or the -- or the eyeball 18 to actual, more puncture or stronger -- stronger 19 kinds of mechanical insults. And so pain would be 20 -- would be indicative of a stronger version of a 21 mechanical -- on that -- on that continuum of 22 mechanical insults. 23 And then irritation, again, is kind of a 24 bit of a catchall phrase that could refer to the 25 chemical -- chemical stimuli, you know, some kind

85 1 of -- something like an acid, you know, I think 2 that is a fairly ill-defined term. 3 Q Now, this is -- that sentence I just read, 4 is in a section of this patent entitled Background 5 of the Art. Do you see that? 6 A Yes. 7 Q Who wrote this section of the patent, the 8 Background of the Art section? 9 A I don't know specifically this, but I -- 10 but very often at Allergan these sections would be 11 written by the patent attorneys. 12 Q Is that based on input that the inventors 13 would provide? 14 MR. LUNEACK: Objection. 15 A Yeah, or -- or there might have been a 16 previous patent application that they're 17 borrowing -- borrowing from. 18 Q And do you have any particular memory of 19 who wrote the Background of the Art section in the 20 Gil patent reference, Exhibit 36? 21 MR. LUNEACK: Objection, asked and 22 answered. 23 A Yeah. As I said, I don't -- I don't 24 recollect. 25 Q Did you have an opportunity to review the	87 1 sequence of events that lead to the feeling f 2 pain, correct? 3 MR. LUNEACK: Objection. 4 A Right. Yes, okay, I've read the 5 paragraph. I'm sorry, can you repeat what you 6 were asking about there? 7 Q Sure. So in this Background of the Art 8 section of the Gil patent reference, you and your 9 co-inventors give a short description of the 10 sequence of events that lead to the sensation f 11 pain? 12 MR. LUNEACK: Same objection. 13 A Yeah, I would say this is certainly -- I 14 don't think this is intended to be inclusive of 15 all types of signals, et cetera, but in general, I 16 think this is laying out -- yeah, a -- a set of 17 mediators that can contribute to pain. 18 Q When you say "mediators," what are you 19 referring to? 20 A It is -- what it says there these chemical 21 mediators, so these are often -- these are often 22 chemicals that are released by -- by nerves and 23 nerve cells that have been activated by a painful 24 stimulus or what is called -- or no susceptible 25 stimulus.
86 1 draft of the Background of the Art section of the 2 Gil patent reference before it was submitted to 3 the Patent Office? 4 A Yes. I would have -- I certainly would 5 have reviewed it, yes. 6 Q And if there was anything incorrect or 7 inaccurate in that part of the patent application, 8 would you have corrected it? 9 A I hope so, yeah, yeah. Again, you know, 10 it was typically my -- I certainly typically would 11 review these and -- and, you know, make 12 editorial -- make edits if I saw something that I 13 didn't feel was right. 14 Q Now, in the Background of the Art section 15 on this patent application, you and your other 16 inventors described some of the sequence of events 17 that lead to the sensation of feeling pain; is 18 that right? 19 MR. LUNEACK: Objection to the extent it 20 mischaracterizes. 21 A Can you show me what you are referring to, 22 please? 23 Q Sure. Like the next paragraph starts, The 24 first step leading to the sensation of pain is, 25 and then it kind of continues to track the	88 1 Q Right. So what you are describing in this 2 first paragraph is that prior to the sensation of 3 pain, nerve cells will release chemical 4 substantives if they have been activated -- if 5 there has been a painful stimuli. Is that the 6 starting point? 7 MR. LUNEACK: Object to the form. 8 A Yeah. The -- the -- the -- yeah, the 9 painful stimulus will -- will cause the nerve 10 cells to release, in many cases, these particular 11 -- some of these as well as other substances. And 12 that often distinguishes what a painful stimulus 13 would be from a innocuous stimulus. 14 Q And these -- these substances -- these 15 chemical substances, to potentially grossly 16 oversimplify it, they're being released at both 17 sides of the nerve towards the central nervous 18 system and then towards the periphery; is that a 19 fair statement? 20 A Yeah, it depends. None of this is 21 generalizable, right. There is -- the specifics 22 matter, but there are certainly in this -- in this 23 list of chemical mediators there are ones that are 24 released back into the bloodstream and there are 25 others that are released further up the neuronal

89 1 chain of connectivity. 2 Q And if we scroll down to the paragraph 3 that starts in line 36 it says, the stimulation of 4 primary afferents leads to action potentials. Do 5 you see that? 6 A Yes. 7 Q Which propagate to the spinal cord. In 8 addition, excited primary afferents release 9 neuropeptides at their peripheral terminals. Do 10 you see that? 11 A Yes. 12 Q And so the -- the reference to excited 13 primary afferents releasing neuropeptides at their 14 peripheral terms, that refers to the release of 15 some of these chemical mediators in the tissues 16 and in the bloodstream; is that right? 17 MR. LUNEACK: Object to the form. 18 A Yes. That is -- that is how I read that. 19 Q And elsewhere as part of this very 20 complicated sequence of events there is other 21 chemical mediators that might be released towards 22 the spinal cord to make their way to the spinal 23 cord; is that right? 24 MR. LUNEACK: Same objection. 25 A Yeah, I would say the chemical mediators	91 1 there isn't a -- there isn't a one-to-one 2 relationship here, okay. This paragraph is -- the 3 way I read this is that this is describing 4 different eventualities that can occur when you 5 have a painful stimulus. 6 It is certainly not the case that every 7 time you have a painful stimulus, you have edema 8 or changes in vascular permeability. So there are 9 types of -- of pains that would result in that, 10 but I -- but I think -- I just want to caution 11 here that I would not -- I would not read this to 12 say that this is an automatic sequela of any 13 painful stimulus. 14 Q That is fair. And I don't -- I don't 15 think I was asking whether this happens in all 16 cases. You testified in your declaration you can 17 have pain without eye redness if there is pain in 18 the eye, right? 19 A Yes. 20 Q You can have eye redness without pain, 21 right? 22 A Yes, yes. 23 Q You can have pain without swelling, right? 24 A Yes. 25 Q You can have swelling without pain in the
90 1 that are being released up the -- up the chain of 2 command in the spinal cord are more 3 neurotransmitters. And there may be some of these 4 peptides, that substance P and CGRP. Yeah, there 5 can be both. These are all ones that also could 6 be, I think, released both at the level of -- 7 between nerves as well as -- yeah, I think this is 8 all correct. 9 Q And then in the patent application it goes 10 on to say, neuropeptides enhance inflammatory 11 reactions in the injured tissue contributing to 12 vasodilation, edema and increased vascular 13 permeability. This phenomenon is called 14 neurogenic inflammation. Do you see that? 15 A Yes, I see that, yes. 16 Q And so what you are describing here is 17 that the neuropeptides being released in the 18 tissues and at the peripheries can contribute to 19 things such as vasodilation, edema and increased 20 vascular permeability, right? 21 MR. LUNEACK: Objection to the extent it 22 mischaracterizes. 23 A Yeah. I think one of the things one has 24 to be a little careful about is -- is that this 25 does not occur in all cases of pain, okay. So	92 1 eye, right? 2 A Yes. That is -- that is what I -- that is 3 what I wrote, yeah. 4 Q But you would agree that part of the 5 sequence of events for feeling the sensation of 6 pain is the release of these neuropeptides 7 described in your patent application, right? 8 MR. LUNEACK: Object to the form. 9 A Yeah. Again, part of -- yes, that in 10 there are -- there are cases where the painful 11 stimulus will re -- will result in the release of 12 inflammatory neuropeptides. 13 Q And those -- 14 A Some or all of these, yes. 15 Q And those inflammatory neural peptides 16 they can contribute to vasodilation, edema and 17 increase vascular permeability, right? 18 MR. LUNEACK: Objection, vague. 19 A Yes. So the release of, for instance, 20 something like -- not -- not all of these, by the 21 way, but for instance calcitonin gene-related 22 peptide is known to -- to cause a vasodilation. 23 Q What about substance P? 24 A You know, I'm -- I don't think so. I 25 think that is -- I think that is more of a --

93 1 yeah, I don't think that has as much vasoactive 2 properties as the CGRP. 3 Q And what about neurokinin A? 4 A Likewise, I don't think of that as being 5 vasoactive, but I'm less familiar with that one. 6 Q Now, in your patent you described this 7 phenomenon as, quote, neurogenic inflammation, 8 right? 9 A Yes. 10 Q And is that because the inflammation is 11 being caused by these neuropeptides? 12 A Yeah, the -- yeah, I'm sorry, Matt. 13 MR. LUNEACK: Objection, vague. 14 A So the -- the inflammation, as I said, and 15 as we talked about, I'm not -- I don't believe it 16 all these peptides, but that some of these 17 neuropeptides can result in a -- in a -- in -- 18 yeah, in, I guess, in a -- in vasodilation which 19 results ultimately in -- in increased migration of 20 inflammatory cells to the -- to the area, which 21 would then be a neuro -- it is a -- it is a 22 neurogenic, because it was caused initially by the 23 nerve stimulus. 24 Now, one thing just to keep in mind is 25 once this inflammation has been setup, the	95 1 Q And neurogenic information is being 2 defined by you and your co-inventors to be a 3 subset of inflammation that is attributable to the 4 release of these neuropeptides, right? 5 MR. LUNEACK: Objection to the extent it 6 mischaracterizes. 7 A Neurogenic inflammation is secondary to 8 the release of some of these neuropeptides. 9 Q Vasodilation, that refers to the enlarging 10 of blood vessels; is that right? 11 A That is correct, yes. 12 Q And when we talk about vasodilation in at 13 least the tissues in the front of the eye, that 14 phenomenon is associated with eye redness, right? 15 MR. LUNEACK: Objection, form. 16 A I think that would be the case, yes, in 17 the conjunctiva. 18 Q Edema, that refers to swelling caused by 19 too much fluid in a tissue or body part? 20 A Right. The idea being that the fluid 21 flows from the blood vessels into the tissue that 22 the blood vessels are coursing through and causes 23 swelling of the tissue. 24 Q And then vascular permeability, that 25 refers to the increasing in the permeability of
94 1 treatment of the pain does not necessarily remove 2 the inflammation. So once it has kind of been 3 triggered, it can have a bit of a self-- 4 self-perpetuating, the inflammation can sort of 5 self-maintain itself. It no longer requires the 6 ongoing painful stimulus. 7 Q Right, unless the drug acts on the 8 inflammation itself, right? 9 MR. LUNEACK: Objection. 10 A Unless you have a drug -- exactly. It is 11 important to distinguish that a pain drug does not 12 necessarily act on the inflammation. 13 Q Okay. 14 A You know, for instance, you know, we 15 talked about anesthetics before, right. 16 Anesthetics were not, for instance, thought of -- 17 even though they deadened the nerve activity, 18 they're not thought of as drugs that will reduce 19 inflammation. 20 Q So earlier we talked about the concept of 21 inflammation being a bit of an umbrella term that 22 covered a variety of responses the body could have 23 to some sort of foreign substance or damage, 24 right? 25 A Correct, yes, we did.	96 1 blood vessels, right? 2 A That's correct, which often would -- it 3 would be kind of a precursor to -- to edema. 4 Q You and your co-inventors thought at the 5 time that one of the reasons that brimonidine 6 might be effective in treating pain is that it 7 inhibits the release of some of these 8 neuropeptides; is that right? 9 MR. LUNEACK: Objection. 10 A No, we were -- we were really thinking of 11 it being more that it would reduce the 12 excitability of the -- of the neurons. 13 Q If we could turn to Column 3 -- sorry. 14 MR. LUNEACK: Counsel, we've been going a 15 little bit over an hour so if there is a good time 16 for a break -- 17 MR. FREDERICKSON: Yeah, we can take 10 18 minutes now. 19 VIDEOGRAPHER: We're going off the record, 20 the time is now 11:26. 21 (Recess, 11:26 to 11:37 a.m.) 22 VIDEOGRAPHER: We're now back on the 23 record, the time is 11:37. You may proceed. 24 Q Dr. Gil, in your patent there is a series 25 of five examples. Do you see that?

97 1 A You want to put it on the screen again or 2 should I just -- 3 Q Sure. 4 A -- have it in front of me? 5 Q Whatever is easiest for you. 6 In your patent, Exhibit 36, you understand 7 there to be a series of five examples? 8 A I do. 9 Q Direct you to Example 1 that describes a 10 clinical study is performed to compare analgesic 11 effect of topically administering brimonidine and 12 placebo following radial keratotomy surgery. Do 13 you see that? 14 A Yes. 15 Q Was the clinical study described in 16 Example 1 actually performed? 17 A No. 18 Q How do you know that? 19 A Partly because it is written in the 20 present tense and not past tense. So I would view 21 this, that is usually kind of a trigger, right, to 22 suggest this is a prophetic example. 23 Q Who designed this prophetic clinical 24 trial? 25 A You know, I do not recall.	99 1 Q Well, you see on the left around Column 46 2 you see a range that says exact dosing data have 3 not been determined, but is anticipated that 4 topical formulation having between 0.01 percent 5 and 0.5 percent weight over volume of a 6 brimonidine will provide relief from ocular pain. 7 Do you see that? 8 A I see that. 9 Q So that is a -- that is a broad range of 10 potential concentrations of brimonidine to be 11 used, right? 12 A That is a very broad range, yes. 13 Q And in Example 1 a specific concentration 14 of 0.03 percent of brimonidine was selected, 15 right? 16 MR. LUNEACK: Objection. 17 A My understanding as to the way these 18 patents often were written, and again, you know 19 typically these were drafted, as I said, by the 20 patent attorneys is, right, was they had a 21 strategy in mind around trying to cover a range of 22 concentrations presumably for defensive patenting 23 purposes. 24 And so I have to -- you know, again, I 25 don't recall the specifics of why this was written
98 1 Q Was it you? 2 A I don't recall. 3 Q Do you know how the selection of 124 male 4 and female subjects were selected, how was that 5 number identified? 6 A No idea. 7 Q Example 1 talks about the administration 8 of brimonidine as a .03 percent ophthalmic 9 solution. Do you see that? 10 A Yeah. 11 Q How was .03 percent concentration of 12 brimonidine selected? 13 A I have no idea. 14 Q Who made the determination to identify 15 .03 percent being the concentration for this 16 particular administration? 17 MR. LUNEACK: Objection, asked and 18 answered. 19 A Yeah, I do not know. Again, you know, my 20 -- I can just say in general terms, you know, in 21 my -- very often our patent attorneys would have 22 some patent strategy in mind maybe to cover a 23 range, but -- you know, a range of concentrations, 24 but I have no recollection as to where this came 25 from.	100 1 this way, but just knowing the general way that 2 our patent attorneys would often write these cases 3 they were -- they were writing to try to cover a 4 range. 5 Q Is it your -- 6 A But -- 7 Q Is it your testimony that the patent 8 attorneys at Allergan selected .03 percent as a 9 concentration that is administered in this Example 10 1 clinical trial? 11 MR. LUNEACK: Objection to the extent it 12 mischaracterizes. 13 A Yeah, again, it is not my testimony that 14 they did it, because I do not -- I do not remember 15 one way or the other. I am just telling you that 16 in the general practice of, you know, working with 17 our patent attorneys that was -- it was -- this 18 would not be atypical that they would be kind of 19 selecting a range of concentrations that were not 20 necessarily based on specific, you know, data. We 21 didn't necessarily have data in hand that defined 22 the full range that they were -- they were putting 23 into an application. 24 Q So that I understand, but Example 1 has a 25 very particular concentration not a range, right?

101 1 A Yeah, I see that. 2 Q Did the patent attorneys at Allergan pick 3 the 0.03 percent concentration in Example 1? 4 MR. LUNEACK: Objection, asked and 5 answered. 6 A You asked. I don't -- I don't recall. 7 Q Okay. At the bottom of the Column 4 the 8 patent states, the results of this study show 9 greater pain relief at hours 2, 3, and 4 in the 10 brimonidine group over the group treated with 11 placebo. Do you see that? 12 A Yeah. 13 Q Okay. If the clinical study hadn't been 14 performed, what is the basis for you and your 15 co-inventors to make that statement? 16 MR. LUNEACK: Object to the form. 17 A I suspect that -- again, I don't 18 specifically recall, but I suspect that that may 19 have been based on what we knew about 20 brimonidine's time or Alphagan's time course in 21 terms of its effect on interoptic pressure, but 22 again, it is a bit -- it is somewhat speculative 23 on my part. 24 Q Well, is it completely speculative on your 25 part? Do you have any memory of the results of	103 1 Example 1? 2 MR. LUNEACK: Objection, asked and 3 answered. 4 A Yeah, I do not know. 5 Q And do you have a memory of how or who 6 decided that the results of this study show 7 greater pain relief at hours 2, 3 and 4 in the 8 brimonidine group over the group treated with 9 placebo? 10 MR. LUNEACK: Objection, asked and 11 answered. 12 A Yeah, I already answered I think. 13 Q Okay. You can answer again. Do you know 14 -- have a memory of how or who decided that the 15 results of this study show greater pain relief at 16 hours 2, 3 and 4 in the brimonidine group over the 17 group treated with placebo? 18 MR. LUNEACK: Same objection. 19 A I do not recall who -- who wrote this or 20 determined those particular hours. 21 Q Is that a false statement in this patent 22 application that the results of this study showed 23 greater pain relief at hours 2, 3 and 4? 24 MR. LUNEACK: Objection, form, 25 argumentative, mischaracterizes.
102 1 the study showing greater pain relief at hours 2, 2 3, and 4 in the brimonidine group? 3 MR. LUNEACK: Object to the form, asked 4 and answered. 5 A As I said, there was no clinical study 6 performed. 7 Q How do you know that? 8 MR. LUNEACK: Objection, asked and 9 answered. 10 A I was at Allergan at the time. 11 Q So you have no memory of a clinical study 12 being performed in radial keratotomy patients? 13 MR. LUNEACK: Same objection. 14 A Yeah, I do not have a recollection whether 15 there -- yeah, I don't recall. 16 Q One way or the other? 17 MR. LUNEACK: Objection, mischaracterizes. 18 A Let me -- I am -- yeah -- yeah, I am -- I 19 don't -- I'm pretty sure that Allergan did not 20 conduct such a study. And whether or not some -- 21 whether or not a clinician, right, the drug was 22 not in the market so whether or not somebody, an 23 ophthalmologist conducted such work, that I do not 24 know. 25 Q And you don't know who wrote the text for	104 1 A My understanding of a prophetic example, 2 which is written in the present tense it is not -- 3 it is not claiming that it was done. It is 4 written in the present tense. 5 Q You are presenting a conclusion based on 6 the results of a study that hadn't been performed 7 in your patent application? 8 MR. LUNEACK: Objection, mischaracterizes. 9 A Yeah. I do not -- you know, I'm not -- 10 you know, I guess that is not my area of expertise 11 in terms of writing prophetic examples and how 12 they're done and why they're done that way. 13 Q You reviewed this description of Example 1 14 before it was submitted to the Patent Office, 15 didn't you? 16 A Yes, I did. 17 Q Do you recall having any conversations 18 about presenting the results of a study that 19 hadn't been done? 20 MR. LUNEACK: Objection. And Dr. Gil, I 21 just caution you not to reveal the substance of 22 any communications with counsel. Objection to the 23 form, mischaracterizes. 24 A Do you want to repeat your question? 25 Q Sure. Do you recall having any

105 1 conversations about presenting the results of a 2 study in a patent application for a study that 3 hadn't been done? 4 MR. LUNEACK: Same objections. 5 A I don't recall. And I would just say that 6 I often relied on our patent attorneys in terms of 7 form and how they would write these, I relied that 8 they knew best how to do that. 9 Q Let's go ahead and scroll down to Column 10 5, Example 4. 11 I guess before we get there, Dr. Gil, do 12 you have any memory of formulating brimonidine at 13 a concentration of 0.03 percent when you were at 14 Allergan? 15 MR. LUNEACK: Objection, vague. 16 A I do not. So let me ask you -- yeah, I do 17 not remember specifically formulation work. Let 18 me take a step back. There are many -- there 19 were -- there were many -- there are many times 20 that brimonidine -- that we did dose response 21 studies with brimonidine. That was a routine 22 thing to do where we would, let's say, put 23 brimonidine on cells or in the animals. They were 24 not necessarily formulated for ophthalmic use. 25 So you know, in the way that Alphagan or	107 1 A Yeah. So that we would -- very often it 2 would very -- one would very often particularly in 3 in vitro studies meaning -- meaning studies not 4 conducted in animals or running studies across a 5 range of concentrations. 6 In animals, and I'm aware that in this 7 study the actual -- the study was only -- the 8 actual experiment that was done was only done with 9 the -- with the Alphagan .2 percent dose. In 10 animals, particularly studies like this where 11 there was a fair amount of harm or discomfort to 12 an animal, we were -- we were a little -- we were 13 less likely to do a range of dose response. 14 Q Okay. So but a dose response study is a 15 term in -- within pharmacology that refers to 16 evaluating the effects of a drug at different 17 amounts? 18 A Yes, over a range of doses going from low 19 to high. 20 Q And that is a typical practice within 21 pharmacology is evaluating a range of doses going 22 from low to high? 23 MR. LUNEACK: Objection, vague, incomplete 24 hypothetical. 25 A Yeah. As I said, particularly in in vitro
106 1 Alphagan P had specific commercial formulations, 2 we very often would do work with the active 3 ingredient brimonidine or you know, the chemical 4 name was UK14304. And so there were many times in 5 the laboratory setting that people would take the 6 dry powder and, you know, formulate it in simple 7 formulations, and then just dilute it at various 8 concentrations. A very typical thing done in a 9 pharmacology lab. 10 So I'm -- I'm sure -- I'm sure that we 11 would often test a range of concentrations, but 12 you know, I don't have any recollection of 13 specific formulations or specific concentrations 14 that were done. 15 Q You used the term dose response study. 16 What does that refer to? 17 A So as we -- as we talked about earlier, 18 right, the whole -- the whole thing -- the whole 19 mantra in pharmacology is that dose matters. And 20 so typically very often we will -- we will want to 21 test drugs across a range of doses to understand a 22 maximal effect and where, you know, where a 23 maximal effect occurs and where there is a no 24 effect dose or minimal effect dose. 25 Q So -- go ahead.	108 1 situations when one would -- when one is 2 characterizing a drug, one would do that, yes. 3 Q Now, you said in Example 4 you know that 4 the Alphagan -- 5 A Example -- 6 Q -- .2 percent was used? 7 A I mean Example 5 if I said 4. 8 Q Example 5, okay. Well, Example 4 is on 9 the screen and that is why I was asking. So 10 Example 4 says, a dose range of an ophthalmic 11 formulation of brimonidine 0.01 percent to 0.5 12 percent, for instance, as well as a vehicle is 13 filled into the chamber and the resultant nerve 14 traffic from the cornea is recorded. Do you see 15 that? 16 A I see that, yeah. 17 Q Do you know what doses in concentrations 18 -- well, let me ask the threshold question. 19 Was the study in Example 4 conducted? 20 A No. 21 Q How do you know that? 22 A Again, it is a prophetic example using -- 23 using present tense. 24 Q And do you have -- is it just because you 25 are reading this in present tense that you believe

109 1 Example 4 wasn't conducted? 2 MR. LUNEACK: Objection to the form. 3 A Well, that is the prime reason. And also 4 if it had been conducted, I believe, the data from 5 that -- from this example would have been included 6 in the application. The only data that is 7 referred to is the data from Example 5. 8 Q Okay. And so Example 4 describes a 9 potential animal study using the corneal nerve 10 conduction model; is that right? 11 A Yes. 12 Q And just to make sure I understand, it 13 looks like one of the goals and things being 14 looked at in this study was evaluating the -- the 15 nerve traffic from the cornea; is that right? 16 MR. LUNEACK: Objection, form. 17 A Yes, we were -- there was -- there is a 18 recording method where you are recording the nerve 19 that is flowing from the -- that is running out of 20 the cornea and determining nerve traffic, yes. 21 Q There is a second component of this study 22 as well that talks about an ocular surface sensory 23 challenge; is that right? 24 A Yes. 25 MR. LUNEACK: Objection.	111 1 Q And fine hair is -- is literally a piece 2 of hair that is being rubbed up against the ocular 3 surface; is that right? 4 A That -- that is -- that is correct, yeah. 5 And the idea being here that these are different 6 gradations of stimuli ranging from a very painful 7 stimuli to a -- something that is more moderate to 8 fine hairs, which typically, you know, if you get 9 a hair in your eye, it is irritating, but it is -- 10 it doesn't necessarily trigger a pain reaction. 11 Q Okay. And then in this Example 4, 12 prophetic Example 4 you and your co-inventors 13 describe that ocular responses characteristic of 14 neurogenic inflammation including redness and 15 pupillary constriction are also observed in 16 rabbits following the external stimuli; is that 17 right? 18 MR. LUNEACK: Object to the form. 19 A Yes. So as we -- as we talked earlier, 20 that -- yeah, sort of is -- it is saying here 21 that, again, not -- you know, not all the time, 22 but that -- that one certainly can trigger a 23 neurogenic inflammatory response in a rabbit eye. 24 Q Right. If you put the spicy chemical from 25 a chili in a rabbit's eye you are likely going to
110 1 A Sorry. 2 MR. LUNEACK: Object to the form. 3 Q And that sensory challenge refers to 4 topical capsaicin, potassium chloride or fine 5 hairs, right? 6 A Yes, that is -- I see that. That is what 7 it says, yeah. 8 Q Capsaicin that is the -- that is the 9 substance in chili powder that chilies that make 10 them spicy, right? 11 A Yes. And it is known that there is a 12 particular type of sensory nerve in the body 13 called a C fiber, which is known to have a very 14 high threshold for activation. And when it -- 15 when it is activated, that is typically signaling 16 that -- that signals a pain response. And so it 17 is known that capsaicin activates -- there is 18 actually a -- a ion channel that capsaicin 19 activates on those C fibers. So it is very often 20 used in pain studies to study sensory activation 21 of pain fibers. 22 Q And potassium chloride that is a known eye 23 irritant, right? 24 A It is a known eye irritant and also will 25 trigger activation of sensory nerves.	112 1 get a neurogenic response, right? 2 A That is -- that is -- that is correct. 3 You are likely to see that. 4 Q And any person that -- 5 A As we all -- as we all know anybody who 6 has, right, put their finger in their eye after 7 touching a chili, yes. 8 Q Right, okay. And so this study what was 9 being looked at was there was a number of rabbits 10 that either received brimonidine or a vehicle, a 11 placebo drop, right? 12 MR. LUNEACK: Objection to the extent it 13 mischaracterizes. 14 A So yeah, in this prophetic example, right, 15 this is sort of -- this is kind of a study design, 16 right, that we would say -- that we would look at 17 a range of concentrations of -- of brimonidine to 18 see -- to see whether they had an effect on -- on 19 pain. And then the prophetic example says one 20 would also look to see whether there was an effect 21 on these symptoms or sequela of neurogenic 22 inflammation. 23 Q Right. So the way that the study was 24 designed was that rabbits would either receive a 25 dose of a concentration of brimonidine or a dose

113 1 of a placebo eyedrop, right? 2 A Yeah. I'm actually looking at this to see 3 whether -- whether it -- it actually speaks to a 4 placebo eyedrop. 5 Q It says, as well as a vehicle is filled 6 into the chamber? 7 MR. LUNEACK: Object to the form. 8 A Yeah. I see -- I got you, there it is up 9 in the previous paragraph. Yes, okay, yeah, that 10 is -- that was the proposed design. 11 Q And then the proposal would then be to 12 have a series of different ocular surface sensory 13 challenges using capsaicin, potassium chloride or 14 fine hairs; is that right? 15 MR. LUNEACK: Objection, mischaracterizes. 16 A Yeah, I think that would -- that is kind 17 of the concept here is that -- that the -- a range 18 of doses of brimonidine would be tested when -- 19 when the ocular surface is challenged with these 20 different topical stimuli, yes. 21 Q And then the -- one of the endpoints of 22 this proposed study was to actually look at the 23 response characteristics of neurogenic 24 inflammation including redness and pupillary 25 constriction, right?	115 1 how I would read that as well. 2 Q And so you and your team described this 3 study in rabbits where brimonidine was being 4 applied to evaluate its impact on neurogenic 5 responses called capsaicin, potassium chloride and 6 fine hairs? 7 MR. LUNEACK: Object to the form. 8 A Yes, this is, again, a prophetic and 9 proposed study where we would look at that as well 10 as look at the nerve traffic, the effect on the 11 nerve traffic, right. This is -- you know, this 12 is to look at both -- the idea here is to look at 13 a -- kind of a -- a -- a -- what is the right 14 word, a neurophysiological endpoint such as 15 nerve -- nerve traffic or nerve -- nerve signaling 16 and then try to associate that with -- as well 17 with some effects on -- on sequela or symptoms of 18 neurogenic inflammation. 19 Q And your understanding at the time and 20 expectation was that brimonidine would be 21 effective in reducing that neurogenic 22 inflammation? 23 MR. LUNEACK: Objection, mischaracterizes. 24 A I don't know whether it was an expectation 25 or that was -- that was a question, that was a
114 1 MR. LUNEACK: Objection, mischaracterizes, 2 vague. 3 A Yeah. I think as -- as proposed here that 4 would be an endpoint of that, one of the endpoints 5 of that study, yes. 6 Q And then the example at least concludes 7 with the sentence, brimonidine is effective in 8 reducing such neurogenic response, right? 9 MR. LUNEACK: Object to the form. 10 A So that -- that is what the sentence says, 11 yes. And I think what we -- which, of course, not 12 here -- there is nothing here about what dose of 13 brimonidine or what neurogenic response, right, 14 but that -- that is what -- you know, that is kind 15 of -- that is the hypothetical example, yes. 16 Q And then the reference to neurogenic 17 responses in the sentence, brimonidine is 18 effective in reducing such neurogenic responses, 19 refers back to the beginning of the paragraph that 20 talks about ocular response characteristics of 21 neurogenic inflammation including redness and 22 pupillary constriction? 23 MR. LUNEACK: Object to the form, 24 mischaracterizes. 25 A You know, again, it seems to be that is	116 1 hypothesis. That was a question that was being 2 asked whether the effect of brimonidine -- no, 3 this is really to me, like, this is designing an 4 experiment to test. So I wouldn't say I had an 5 expectation, one way or another. I think -- I 6 think that is why it is a prophetic example. This 7 is what, you know, ideally you would want to test. 8 And, you know, we need to -- we would have 9 needed to have run the experiment to understand 10 whether we would have seen both an effect on nerve 11 traffic as well as on -- on sequela, right, on 12 neurogenic sequela. And one would have had to the 13 experiment to understand at what dose it might -- 14 you might have seen it at, right. 15 Q You used the term sequela. What does that 16 refer to? 17 A So the neurogenic -- the symptoms of 18 neurogenic inflammation such as -- as pupillary 19 constriction and redness. 20 Q And so your testimony is that last 21 sentence that reads, brimonidine is effective in 22 reducing such neurogenic responses is a question? 23 MR. LUNEACK: Objection, mischaracterizes. 24 A It is a prophetic example. So I think it 25 is -- it is -- you know, it was written to say

117 1 that -- yeah, I mean, it is not -- you are right, 2 it is not a question, but it is written as a -- as 3 a -- I guess, in my mind, it is written as a 4 hypotheses. 5 Q Earlier when we were talking about Example 6 1, and it reported on the results of this study 7 showing some pain relief at hours 2, 3 and 4, you 8 testified that you thought that might be because 9 of some understanding of the response 10 characteristics of the Alphagan products. Do you 11 remember that? 12 A Yes, I remember having -- talking about 13 that, yes. 14 Q Okay. So why do you think that the 15 results of Example 1 were based on some 16 information, whereas, the result presented here 17 for Example 4 was just a hypothesis to be tested? 18 MR. LUNEACK: Objection to the extent it 19 mischaracterizes testimony. 20 A Yeah. Yeah, I don't think I said that 21 this isn't based on some, you know, I think, you 22 know, for instance, the choice of a dose range, 23 you know, in my mind we were probably anticipating 24 that as we went up to .5 percent we would -- we 25 would, you know, again, based on prior history,	119 1 Office that based on your understanding of 2 brimonidine someplace in the range of 0.01 percent 3 to 0.5 percent brimonidine would be effective in 4 reducing neurogenic inflammation? 5 MR. LUNEACK: Object to the form. 6 A I would change that a little bit to say I 7 had an expectation that at the high dose, in the 8 high dose range from .1 to .5 percent where we 9 knew brimonidine was effective in other 10 situations, that if we were going to see an effect 11 on pain that we would see it in that range. 12 Q What about neurogenic responses, the ones 13 that are referred to in the bottom of this 14 paragraph? 15 MR. LUNEACK: Object to the form. 16 A Yeah. I mean, I think we thought that 17 maybe at those same high doses we would see an 18 effect on neurogenic responses. 19 Q So let me ask this: If your expectation 20 was that at the high doses, .1 to .5 percent you 21 would see some effect, why in Example 1 was 0.03 22 percent brimonidine selected? 23 MR. LUNEACK: Object to the form. 24 A As we talked about earlier, I do not 25 recall how those -- how those got picked. So it
118 1 we -- we knew that, you know, the effects of 2 that -- of brimonidine were at doses, you know, 3 kind of .2, .5 percent. 4 If you went below -- you know, and maybe 5 .1 percent, right. But if you went below that you 6 weren't going to see effects. So, you know, in my 7 mind the dose range that is being picked here 8 we're picking a dose range where we expect to go 9 from no effect to having -- having maximal effects 10 at the -- at the high concentrations. 11 So I think there is -- we are using our 12 knowledge of brimonidine of, you know, what -- 13 what we knew about brimonidine and its effects in 14 the intraocular pressure to -- to design this 15 experiment. 16 I think what -- what we hadn't done before 17 is we hadn't -- we did not know -- you know, I say 18 it is a hypothesis is we didn't -- we had not 19 previously looked at the effect of brimonidine 20 either on nerve -- nerve traffic or on -- on 21 neurogenic, responses right. So, you know, 22 that -- that is a hypothesis until you run the 23 experiment. 24 Q And so you had an expectation when you 25 submitted this patent application to the Patent	120 1 is a good -- it is a good question, but I don't 2 have an answer. 3 Q Well, you understand part of this 4 exercise, this litigation, is how someone that 5 doesn't have your inside information would 6 objectively interpret disclosure in this Gil 7 patent reference, right? 8 A Yes. 9 Q And that person, that is a hypothetical 10 person who is called a person of ordinary skill in 11 the art, right? 12 A Yes. 13 Q And that -- you understand that that 14 person has a certain level of qualifications and 15 experience, right? 16 MR. LUNEACK: Objection to the extent it 17 calls for a legal conclusion. 18 A So yeah, I understand that a -- yeah, 19 without getting into the details of how you define 20 a POSA, I understand that it is somebody has some 21 specific expertise in the -- in that -- in the 22 field, yes. 23 Q Okay. And so this person of ordinary 24 skill in the art is reading a patent disclosure 25 that you and others at Allergan wrote concerning

121 1 both ocular pain and neurogenic inflammation, 2 right? 3 A Uh-huh, yes. 4 Q Okay. And it describes at least in 5 Example 4 a dose range study that is looking at 6 both readouts for ocular pain and readouts for 7 neurogenic inflammation, right? 8 A That is what it says, yes. 9 Q And that those range -- it is a broad 10 range of 0.01 percent to 0.5 percent, right? 11 A The proposed dose range for study is -- is 12 .01 to .5 percent, yes. 13 Q And then the -- the only other example 14 that describes the specific amount of brimonidine 15 being administered is Example 1 of a concentration 16 of 0.03 percent, right? 17 MR. LUNEACK: Mischaracterizes. 18 A I think Exhibit 5 has -- has -- needs to 19 be considered, because there we actually did the 20 experiment and we did it with .2 percent, right? 21 You can't -- you know -- you know, I mean one 22 thing that we -- we talk about a person of skill 23 in the art, ordinary skill in the art, you know, 24 as you, I think, know wouldn't just be focusing on 25 this one patent, right.	123 1 And again, you know, you would -- you 2 would want to include lower doses mainly because 3 one of the things you do in a study is you are -- 4 you want to kind of define how low you -- where is 5 the no effect. Where do you not have an effect 6 that gives you greater confidence where you are 7 seeing the effect. 8 So I think the totality of -- you know, 9 the totality of all the data out there, but even 10 within this patent application, the fact that 11 Example 5 is -- which is really what the 12 experiment that was done is the experiment was 13 done with .2 percent. So I do think that somebody 14 looking through this would -- would understand 15 that it is that -- it is in this -- it is sort of 16 in these higher doses where you are going to see 17 these effects. 18 Q And you say it is 0.2 percent, because the 19 example refers to using Allergan's Alphagan 20 composition? 21 A Yeah. Let's scroll down to that, let 22 me -- let's take a look at that. Can we blow that 23 up, please? 24 Yeah, yes, so exactly we referred to there 25 -- we refer there in line 5, is that right?
122 1 We're looking at this in the -- in the 2 context of everything else that was known about 3 brimonidine and Alphagan at that time, right. So 4 that is why -- you know, that is why I'm saying, 5 you know to me, one of the key things that we knew 6 and, you know, in terms of the hierarchy of -- of 7 the kind of the weight how you -- how I think an 8 ordinary person of skill in the art would weigh 9 evidence you first -- you look to the clinical 10 data first. 11 And we knew from clinical data that, you 12 know, that the -- the -- from dose response data 13 we talked a little bit about that earlier that 14 in -- in some of the original dose -- clinical 15 dose response studies where we looked at .08 16 percent, .2 percent, .5 percent, that we saw a 17 dose response across a range -- not only 18 intraocular pressure, but a range of other side 19 effects as well including blanching. 20 And so we were pretty confident going -- 21 we were pretty confident as would any other person 22 of skill in the art would be pretty confident that 23 the dose range where you were going to see an 24 effect here was going to be in that range around 25 .2 percent.	124 1 Q Yes, of Column 6? 2 A Yes. Yes. So that would be the Alphagan 3 pharmaceutical composition with .2 percent. 4 Q Okay. So in Example 5, though, there is 5 no description of looking at any of the neurogenic 6 response characteristics, right? 7 A Yeah, there is not. And I -- you know, I 8 -- I wondered about that. Again I do not recall. 9 I would -- I kind of would -- I would presume that 10 if we had seen effects we would have reported 11 those effects, but again, I do not have detailed 12 recollection of that. 13 Q Do you have any recollection of that? 14 A Recollection of whether we measured -- 15 whether we looked at neurogenic responses, yeah, I 16 don't recall for sure. 17 Q Do you have any recollection of the 18 experiment being described in Example 5? 19 A You know, I -- I don't. I was not -- 20 again, I was -- I was not involved in the actual 21 conduct of those studies. I do recall when I 22 looked back on this and, you know, it had been 23 quite a while since I thought about this or looked 24 at this, but when I looked back on this I did 25 remember the -- I did remember the -- the actual

125 1 recording data. And -- and but I don't -- I don't 2 remember nor kind I'm quite sure I was not 3 actually present for the actual running of the 4 experiments. 5 Q Do you know who ran the experiment 6 described in Example 5? 7 A No, I don't, I don't. And I don't 8 recall -- I don't recall whether that was run 9 internally at Allergan or whether we contracted 10 that work out, I do not recall. 11 Q Okay. And you're fairly confident that 12 you weren't present when the experiment was being 13 run, right? 14 A Yes. 15 MR. LUNEACK: Objection. 16 A I'm confident of that. 17 Q Other than seeing some of the data that is 18 illustrated in the patent, you have no other 19 recollection of this particular experiment, right? 20 MR. LUNEACK: Mischaracterizes. 21 A Yeah, that is -- yes, I do not recall the 22 -- the running of the experiment. As we talked a 23 little earlier, I -- I recollect kind of the 24 design elements around wanting to make sure we 25 were com -- we were -- we were assessing both the	127 1 Q So when you talk about -- you mentioned 2 this hierarchy of evidence, one of the starting 3 points for drug discovery is to start with in 4 vitro analysis of chemical compounds outside of 5 animals, right? 6 A Yes. 7 Q And then if the in vitro analysis gives 8 the -- the researchers enough confidence that they 9 can, for lack of a better word, you know, justify 10 moving into animals, the next step of the drug 11 discovery process is to experiment using different 12 forms of animal models, right? 13 MR. LUNEACK: Object to the form. 14 A Typically that would be the case. And you 15 know, part of it also has to do that as you go 16 into animal models you need to make more material. 17 In cell studies you are using very small 18 quantities of the drug, and often when you go to 19 animals you may need -- you just need the chemist 20 to make more of it, so there is a cost and time 21 element. 22 Q Yeah. But one of the benefits of -- and 23 one of the reasons that go into animals is that it 24 allows the researchers to see how the drug behaves 25 in a living, breathing organism, right?
126 1 effect on a, you know, a innocuous mechanical 2 stimulus compared to a painful stimulus. But the 3 actual conduct, the details of the model and how 4 that -- the actual conduct running that, I don't 5 -- I don't recall. 6 Q Within drug discovery and development, 7 there is typically a sequence of types of 8 experimentation that is performed at each stage of 9 development; is that fair? 10 MR. LUNEACK: Objection, vague. 11 A Yeah, say that again, maybe. 12 Q Sure, sure. So you mentioned earlier in 13 vitro studies. That is a -- that is a type of 14 analysis that involves experimentation not using 15 animals, right? 16 A Yes, correct. 17 Q Okay. And that type of experimentation 18 doesn't raise some of the same ethical concerns 19 associated with experimenting on an analysis, 20 right? 21 A That's correct, yes. 22 Q And these in vitro studies they're 23 typically, you know, less expensive than animal 24 studies or human studies, right? 25 A For sure, yes.	128 1 A Yes, for sure. 2 Q And there is all sorts of complications 3 that can occur with a live organism as opposed to, 4 you know, cell in vitro based assays, right? 5 A Yes. There is a lot more variability that 6 can occur, et cetera, yes. 7 Q And then after there is different stages 8 sometimes of animal experimentation. You can go, 9 you know, mice and rats to rabbits to sometimes 10 dogs and then non-human primates. There is 11 sometimes a progression associated with animal 12 experiments; right? 13 A That is correct. 14 Q And each one of those implicates its own 15 separate set of ethical considerations and -- and 16 cost benefit into whether or not to move forward 17 with the study, right? 18 A That is right. Particularly as you get to 19 dogs and -- and non-human primates, lot of ethical 20 concerns, yes. 21 Q And ultimately, all of this work is done 22 to give the researchers and regulators some degree 23 of comfort that the drug will be, at a minimum, 24 safe if administered to people, right? 25 MR. LUNEACK: Form.

129 1 A Yes, that is -- yes, that is one of the 2 key objectives of that step-up process, yes. 3 Q And so examples 4 and 5 those are directed 4 towards animal studies using rabbits, right? 5 A Yes. 6 Q And then Example 1 that is the description 7 of a prophetic clinical study in humans, right? 8 A Yes. 9 Q Okay. And so wouldn't it be fair of a 10 other than person of skill in the art to infer 11 based on the description of the animal studies and 12 then the description of the prophetic human 13 studies that you and your team viewed a 14 concentration of brimonidine as 0.03 percent as 15 potentially being efficacious? 16 MR. LUNEACK: Object to the form, vague. 17 A Yeah. I mean, we -- we talked about 18 exhibit -- Example 1. I -- you know, it puzzles 19 me and I don't recall where that came from, yeah. 20 Q So what -- what happened to this work? 21 You mentioned an Australian patent application in 22 your declaration, but the evaluation of the 23 topical administration of brimonidine for purposes 24 of treating ocular pain, what happened to it? 25 A What happened to the project?	131 1 Q Certainly this patent application would 2 disclose to people reading it that brimonidine may 3 have some utility as a topical ocular drop for 4 purposes of eye pain, right? 5 MR. LUNEACK: Objection, vague, 6 mischaracterizes. 7 A It -- it would certainly suggest that, 8 yes. 9 Q And there are at least some statements in 10 this patent application that suggest that 11 brimonidine may also have beneficial effects for 12 neurogenic inflammation, right? 13 MR. LUNEACK: Same objections. 14 A So there is no -- there is no data, right, 15 I mean that is the problem, right. With the -- 16 with the Example 5 there is at least data that 17 says that a drug is reducing nerve traffic due to 18 a painful stimulus. So again, in terms of the -- 19 in terms of the weight of the evidence, I would 20 certainly put a whole lot more weight on an actual 21 study that was run as opposed to the prophetic 22 examples. 23 So I think -- I think a person of 24 reasonable skill in the art would look at this and 25 say that if the jury is still out as to whether or
130 1 Q Yeah. 2 A Yeah. I have no -- again, no specific 3 recollection of where we went with this. It seems 4 -- it seems like we did not pursue it and I don't 5 recall exactly the decision making process as to 6 why that was. 7 Q Was -- you had testified earlier that 8 Allergan was -- was really looking for potentially 9 orally administered pain medicines. Do you 10 remember that? 11 A Yes. 12 Q And -- 13 A I remember that, yeah. 14 Q And certainly this patent application, 15 Exhibit 36, suggests at one point in time you were 16 looking at topically administered uses of 17 brimonidine for pain indications, right? 18 A Yes, right. 19 Q Do you know whether the fact that this was 20 a topical administration of brimonidine was a 21 reason that Allergan didn't pursue it further? 22 MR. LUNEACK: Object to the form. Object 23 to the form. 24 A I don't -- I don't know. I really don't 25 recall.	132 1 not brimonidine would -- would, in fact, have an 2 effect on neurogenic symptoms, and if it did what 3 -- at what dose would that -- would that happen. 4 Q Okay. If you want to take a break for 5 lunch, now is as good a time as any on my end. 6 A Yeah, that works for me. I appreciate 7 that. 8 VIDEOGRAPHER: We're going off the record. 9 The time is 12:28. 10 (Recess 12:28 to 13:00 p.m.) 11 VIDEOGRAPHER: We're now back on the 12 record, the time is 13:00. You may proceed. 13 Q Welcome back, Dr. Burke -- Dr. Burke. Dr. 14 Gil, sorry, I'm reading your declaration talking 15 about Dr. Burke's work. Let's talk about Dr. 16 Burke's work. 17 Can you turn to your declaration, 18 paragraph 29. Do you have that in front of you? 19 A I do. 20 Q Okay. And so in your declaration you 21 described a 1996 study performed by last name, 22 first author, Burke? 23 A Uh-huh. 24 Q Is that a yes? 25 A Yes, yes, sorry. I got to get back in the

133 1 habit of not just nodding my head. Yes, that is a 2 yes. 3 Q Okay. And you say in paragraph 29 that 4 Burke 1996 describes studies examining the 5 vascular response to brimonidine and other alpha-2 6 agonists and functional human retinal 7 microvasculature using the hamster cheek pouch 8 model. Do you see that? 9 A Yes, I do. 10 Q Okay. And so Burke and his coauthors were 11 looking at, among other things, vasoconstriction 12 of brimonidine in the -- the retinal blood 13 vessels, correct? 14 A Correct. 15 Q The retina, that is a -- that is a thin 16 layer of light sensitive cells in the back of the 17 eyes that allow us to see; is that fair? 18 A That is -- that is a adequate description, 19 yes. 20 Q They -- the cells in the retina they 21 convert light into the electrical signals that our 22 brain ultimately processes and allows us to see, 23 right? 24 A Yes. 25 Q And the retina, that is in the back	135 1 Q Yeah. 2 REMOTE TECHNICIAN: Exhibit 7 is on the 3 screen now and I will get that dropped in the Zoom 4 chat momentarily. 5 A I will just pull up a physical copy of it 6 as well. 7 Q Go to the first page of Exhibit 7. I will 8 just ask you do you recognize this to be the Burke 9 1996 paper that we were just discussing? 10 A Yeah. I just want to make sure that is 11 the same one. Looks like it, yes. 12 Q Okay. And Burke identifies himself as 13 being an employee of the department of biological 14 sciences at Allergan in 1996. Do you see that? 15 A Yes. 16 Q Do you know James Burke? 17 A I do. 18 Q Did you work with James Burke when you 19 were at Allergan? 20 A Yes, I did. 21 Q Were you involved in any way in this 22 preclinical evaluation of brimonidine? 23 A I was involved in discussions about the 24 conduct of those studies, yes. 25 Q And where was James Burke's position
134 1 portion of the eye; is that right? 2 A Yes, that's correct. 3 Q And so the only blood vessels that Burke 4 and colleagues looked at in this 1996 study were 5 retinal blood vessels, right, for purposes of 6 vasoconstriction? 7 MR. LUNEACK: Objection. 8 A Just to be clear there was human -- there 9 were human vessels that were transplanted. They 10 were -- they were -- they were kind of taken out 11 of their normal milieu and transplanted and kind 12 of sewn into a hamster cheek pouch so they would 13 have a blood supply to stay alive, but it was a 14 way to allow -- allow them to more readily study 15 these drug effects on -- on the vas -- on that 16 retinal microvasculature. 17 Q Okay. Let's go ahead and take a look at 18 Exhibit 7 and we will put that on the screen, that 19 is the Burke paper itself. 20 (Exhibit 7 marked.) 21 REMOTE TECHNICIAN: Stand by counsel, one 22 moment. 23 A 37 or 7? 24 Q 7. 25 A 7.	136 1 vis-a-vis you in 1996? 2 A So we were -- we were colleagues and 3 co-members of the -- of the alpha-adrenergic 4 research team. So James actually had been the -- 5 the leader of the -- James oversaw all the -- all 6 the in vivo studies that we conducted and he was 7 part of the alpha-adrenergic team. 8 Q And the Burke 1996 paper describes some of 9 the in vivo work that Allergan had done with 10 brimonidine; is that right? 11 A That is -- that is correct, yes. 12 Q And the relevant portions that you refer 13 to begin on page S13 for vasoactivity; is that 14 right? 15 A Yes. 16 Q And so the gist of your testimony is that 17 this is a preclinical model of the vasoactivity of 18 brimonidine in blood vessels in the human retina, 19 right? 20 MR. LUNEACK: Objection to the extent it 21 mischaracterizes. 22 A Yeah. It is using this model to -- yes, 23 to -- to understand how -- how brimonidine acts on 24 the human retinal vessels. 25 Q Okay. And Dr. Burke and others drew some

137 1 conclusions about the concentrations of 2 brimonidine required to exhibit vasoactivity in 3 the blood vessels and retinas, right? 4 A Yes. 5 Q Okay. And you point to these 6 concentrations as being informative of 7 concentrations that should be observed to exhibit 8 vasoactivity in other eye tissue, right? 9 A Yeah, let me -- let me clarify a little 10 bit just to make sure, you know, that -- that we 11 are saying the same thing. 12 So yeah, this is -- we're -- we're using 13 this here to, you know, take an isolated tissue 14 and ask whether -- I should give you a little 15 background, right, because part of -- part of the 16 thinking here was, you know, there was a history 17 in the use of ophthalmic alpha agonists where 18 drugs like clonidine and apraclonidine, which 19 preceded brimonidine onto the market were known to 20 have -- were known to cause vasoconstriction and 21 actual blanching. You could actually see 22 blanching of the -- of the conjunctival vessels 23 when -- when put in the eye. And that -- and that 24 we also knew at a high dose that there was 25 blanching that at .5 percent brimonidine you got	139 1 A Yeah. We were -- I think, that was not 2 the intent, right, that was not the intent of that 3 study. You know, to the extent that -- you know, 4 I think this -- this data was -- is useful in the 5 sense that it allows -- that it says, here are 6 concentrations of brimonidine that are needed to 7 achieve vasoconstriction, you know. And as we 8 talked about in the declaration, you know, are 9 such concentrations achievable elsewhere in other 10 tissues of the eye. 11 Q Right, the levels of concentration of 12 brimonidine needed to achieve vasoconstriction in 13 the retina, right? 14 MR. LUNEACK: Objection to the extent it 15 mischaracterizes. 16 A Yeah, there are -- there are -- so -- so 17 to the extent that the pharmacology of the retina 18 and the -- and the vessels in the conjunctiva or 19 other tissues are the same, you know, there would 20 be the potential -- you know, one can use that 21 information to -- to draw inferences about what -- 22 what would be necessary in other tissues. 23 And again, part of this is, you know, as I 24 talk about in the -- in the -- in the declaration, 25 is, you know, these are the kinds of analyses that
138 1 significant blanching at well. 2 And so there was concern -- there was some 3 concern in the field that, well, if these drugs 4 can cause vasoconstriction of retinal vessels that 5 would be a real -- that would be a real problem 6 because you don't want -- you don't want the 7 blood -- you don't want to inhibit the blood 8 supply to the -- to these -- to the retina, 9 because then the cells -- the cells would die. 10 And so I think part of what -- part of 11 what was being done here was really trying to, you 12 know, trying to demonstrate that the -- that the 13 concentrations that you need to achieve to get 14 vasoconstriction of -- of the retinal vasculature 15 were really high concentrations that would not be 16 achieved with -- with -- with dosing -- the dosing 17 that was being done. 18 Q And so Burke didn't look at the 19 concentrations of brimonidine required to observe 20 vasoconstriction in the sclera, correct? 21 A That's correct. 22 Q And Burke didn't look at the level of 23 concentrations of brimonidine that would need to 24 be observed for there to be any vasoconstriction 25 in the conjunctiva, right?	140 1 a person of ordinary skill in the art would be 2 going through to think about is this, you know, 3 what -- what -- what concentrations would you need 4 to achieve, right, to have a vasoconstrictive 5 effect. 6 Q By 2008, though, it was known that the 7 pharmacology at least as it related to brimonidine 8 between the retina and the sclera and conjunctiva 9 was not the same, would you agree with that? 10 MR. LUNEACK: Objection, lack of 11 foundation. 12 A You would have to -- you would have to 13 give me more information to help me understand why 14 you are saying that. 15 Q Well, what is your understanding? As of 16 2008, would a person of skill in the art have 17 understood that the behavior of brimonidine in the 18 front of the eye was different than the behavior 19 of brimonidine in the back of the eye? 20 MR. LUNEACK: Objection, vague. 21 A I think -- I think a person of ordinary 22 skill in 2008 would have -- the data would have 23 supported that both -- in both vasculatures the 24 vasoconstriction that was driven by alpha-1 was, 25 you know, the height was the off target alpha-1

141 1 activity of brimonidine. 2 Q That wasn't my question, Dr. Gil. My 3 question was, in 2008, would a person of ordinary 4 skill in the art have understood that the behavior 5 of brimonidine in the front of the eye was 6 different than the behavior of brimonidine in the 7 back of the eye? 8 MR. LUNEACK: Objection, vague and asked 9 and answered. 10 A Yeah. So when you say the behavior of the 11 drug in the front of the eye and the back of the 12 eye, are you -- are you referring to the 13 vasoconstrictive actions? 14 Q Any action of brimonidine, it worked 15 differently in the front of the eye than it did in 16 the back of the eye? 17 MR. LUNEACK: Same objections. 18 Q Was that known in 2008? 19 MR. LUNEACK: Same objections. 20 A It is kind of a -- I mean -- the question, 21 certainly the question the way you are phrasing it 22 is a little -- is kind of hard to answer because 23 depending on what action and effect you are asking 24 me about there -- there may or may not be 25 similarities, right.	143 1 to a paper that was published in 2002, Acheampong, 2 Acheampong. Do you see that? 3 A Yes. 4 Q Do you know how to pronounce that? 5 A Acheampong, you got it. Yeah, that was 6 it. 7 Q And did you know -- 8 A Dr. Acheampong was also a member of the 9 alpha-adrenergic research team. He was a 10 pharmacokineticist at Allergan. 11 Q Okay. And so what Dr. Acheampong did was 12 to conduct a series of experiments to determine 13 where does brimonidine go after it is being 14 administered in the eye; is that right? 15 MR. LUNEACK: Objection to the extent if 16 mischaracterizes. 17 A Yeah, where is it distributed in the eye 18 at various points in time in one of the 19 concentrations in -- in various tissues. 20 Q Okay. And so there is a series of 21 experiments that are reported in Acheampong, 22 right, that talk about multiple doses or single 23 doses of brimonidine; is that right? We can put 24 that up, it is Exhibit 62. 25 (Exhibit 62 marked.)
142 1 So the -- with respect to the 2 vasoconstrictive actions of brimonidine on the -- 3 on the retina and on the conjunctival vessels, 4 the -- I think the 2008 understanding of that was 5 that they were driven by -- by the same 6 pharmacology. 7 Q Now, Burke in the last sentence on the 8 vasoactivity page S14, we will go one page over, 9 reports these data suggests that brimonidine 10 ocular therapy in humans is not likely to be 11 associated with vasoconstriction in the posterior 12 pull. Do you see that? 13 A Yes. 14 Q And the posterior pull, what does refer 15 to? 16 A I presume he's referring to the back of 17 the eye, which is where the retina is located. 18 Q So what you did with the Burke paper based 19 on the retinal blood vessels was identify the two 20 concentrations where Burke observed some 21 vasoconstriction in the retina and some -- and 22 where he observed no vasoconstriction in the 23 retina, right? 24 A That's right. I call those out, yes. 25 Q Okay. And then in your declaration you go	144 1 REMOTE TECHNICIAN: Exhibit 62 is on 2 screen now and available for download in the Zoom 3 chat. 4 Q Feel free to take a look, Dr. Gil. And do 5 you recognize Exhibit 62 to be the Acheampong 2002 6 paper? 7 A Yes, I do. 8 Q Now, in paragraph 31 of your declaration 9 you write that, a skilled scientist would 10 interpret Acheampong 2002 as suggesting and 11 promoting exposure in numerous ocular tissues is 12 approximately dose proportional. Do you see that? 13 A Yes, there it is at the bottom of the 14 page, yes. Okay, yes. 15 Q And what you mean by dose proportional is 16 that as you administer higher doses, you will -- 17 you expect to see higher concentrations in the 18 affected tissue, right? 19 A That -- that is correct. 20 Q Okay. And to -- to make this conclusion 21 with dose proportionality, you compared two 22 different studies that Acheampong had conducted, 23 right? 24 A That's right. One study where it was 25 dosed at .5 percent and another study where it was

145 1 dosed at .2 percent. 2 Q Acheampong 2002 didn't describe a study 3 that actually looked at the question of whether 4 brimonidine exposure was dose proportional, did 5 it? 6 MR. LUNEACK: Object to the form, 7 mischaracterizes. 8 A They did not -- I don't believe they drew 9 themselves conclusions about that, but certainly 10 by the nature of conducting experiments in 11 multiple concentrations, that is something one 12 could discern. 13 Q But the -- the design of the studies also 14 differed in ways beyond concentrations, right? 15 MR. LUNEACK: Objection, vague. 16 A Yes. You are referring, I think, to the 17 fact that the duration of dosing was -- was 18 somewhat different between the .5 percent and the 19 .2 percent. 20 Q That's right. The .2 percent that was 21 dosed for five days; right? 22 A Yes, and the .5 perhaps was at perhaps 14 23 days. 24 Q So there was nine more days of dosing of 25 the .5 percent, right?	147 1 -- a pharmacokineticist would call into question 2 whether that was, quote-unquote, dose 3 proportional. 4 Q Right. 5 A So it is really a directional statement, 6 right. 7 Q And is it really just the kind of the 8 common sense principle that if you are applying 9 more of a concentration of a drug you would expect 10 to see more of that drug in the tissues? 11 A Yes, yes, that is the -- right, it is a 12 common sense expectation. 13 Q Just it seems like you jumped through a 14 lot of hoops to make this claim about dose 15 proportionality by -- by comparing two very 16 different studies. I'm trying to understand why 17 you did that? 18 A Why we did that. Well, because the reason 19 we were doing that was because in -- in the -- I 20 can't remember now in which -- I think in the .2 21 percent they didn't necessarily have all the same 22 tissues as the .5 percent. So it was helping us 23 to draw -- to sort of think about how you -- how 24 you -- how you, I guess, triangulate between the 25 data sets, right.
146 1 A Yeah. And typically -- yes, and I think 2 we -- I referred to that. Certainly one can 3 expect -- and typically a drug will reach what is 4 called steady state so that additional days of 5 dosing don't necessarily -- you don't get more 6 accumulation. And very typically you will get to 7 steady state within 5 to 7 days. 8 So while you're right in, you know, I 9 point out as well that there are differences 10 there, you know, so when I make a statement about 11 dose proportionality, I'm not necessarily 12 expecting -- you know, when I increase -- when one 13 increases the dose 2 and a half percent you are 14 going to precisely get a 2 and a half percent 15 increase. 16 It is really a directional statement that, 17 you know, I will expect a 2 and a half fold 18 increase that, for instance, as was seen, it 19 looked like it was probably around 3 to 3 and a 20 half fold differences. You wouldn't expect with a 21 2 and a half fold increase that there would be no 22 change. And I wouldn't necessarily and if I -- if 23 you saw the 2 and a half fold increase that there 24 was, like, an order of magnitude difference, like, 25 a 10 or a twentyfold change, you know, you would	148 1 Because the -- you know, the number of 2 animals that were used was not large. And so 3 again, as a scientifically one way to give oneself 4 greater confidence in the quality and the 5 reliability of the data is if I can look at 6 different data sets and they are -- they are 7 consistent with one another, then I -- then to me 8 and to, I think, any -- any POSA that gives you a 9 little more confidence in the quality of the -- in 10 the quality and the consistency of the data that 11 it is not just random numbers that got generated. 12 And I might add, I actually only realized 13 after the declaration got filed that James and I 14 actually published a paper in or around 2014 that 15 was yet again another PK study on primates using a 16 .1 percent dose. And again, it was quite 17 consistent with the -- the -- the overall 18 conclusion, so -- in terms of dose 19 proportionality. So it gives overall confidence 20 in the quality of that data set. 21 Q So there is -- there is two studies that 22 you rely on, one includes the administration of 23 0.2 percent of brimonidine and the other includes 24 the administration of 0.5 percent of brimonidine, 25 right?

149 1 A That is correct, yeah. 2 Q One of the differences between those two 3 studies is the duration that the monkeys received 4 the brimonidine administration, right? 5 A Yes. 6 Q In the 0.2 percent study, the monkeys 7 received brimonidine twice a day for five days, 8 right? 9 A I believe that's correct. I'm looking for 10 it in here, but I trust you. 11 Q If you look -- certainly under the results 12 on page 423, concentrations of radioactivity were 13 measured in ocular tissue after five days? 14 A Yes. Okay, got it, yes. 15 Q Okay. In the 0.5 percent study, the 16 monkeys received brimonidine twice a day for 14 17 days, right? 18 A That's correct. 19 Q You alluded to this, but there were 20 differences in the tissues that were observed in 21 the .2 percent study and the .5 percent study, 22 right? 23 MR. LUNEACK: Objection. 24 A That is correct. 25 Q And the .5 percent study took multiple	151 1 A -- which is next. In these kind of 2 studies where you are really just picking just 3 because it is -- it is -- in order to get the -- 4 the samples you have to sacrifice the animal, so 5 you are obviously not taking that many time 6 points. 7 And so it is really a Cmax determined at 8 whatever time points. It is not really clear that 9 -- I wouldn't go as far to say that is for sure 10 the Cmax. It is just a little bit of a procedure 11 caveat. 12 Q Right. And that is the point I was trying 13 -- I was going to get to was at least in the .5 14 percent study, there was sampling done at 15 different points in time following that last 16 administration, right? 17 A Yes, there was, yes. 18 Q And the table for the .5 percent study at 19 least purports to report the maximum concentration 20 observed in those different points in time, right? 21 A Yes. At those -- at those particular time 22 points, yes, if that were taken, yes. 23 Q Right. So if you look at Table 3, which 24 you identified as containing the results of the .5 25 percent study, you see a row for each of the
150 1 samples over different points in time, right? 2 A Yes. 3 Q Whereas, the 0.2 percent study took one 4 sample after five days of the administration, 5 right? 6 A Yes, two hours after the last dose on day 7 5. 8 Q Now, you reference something called peak 9 concentration or Cmax in your declaration. I 10 assume that is a concept you are familiar with, 11 right? 12 A Yes, I am. 13 Q And Cmax refers to the maximum 14 concentration of a drug that is observed in either 15 the blood or relevant tissue, right? 16 A Yes, it is a little -- yes, yes. I would 17 have to say it is a little to my mind -- I'm not 18 sure that would have been the right term to use in 19 the tissue. It is a very common, and it is a 20 standard term used in analyzing drug levels in 21 blood, because you draw many, many time points and 22 you can get a very defined and clear concentration 23 curve over time and it is easy to say this is the 24 top dose -- 25 Q Yes.	152 1 tissues, correct? 2 A Correct. 3 Q And then you see a column for Tmax, that is 4 the time associated with the maximum 5 concentration, right? 6 A Yes. 7 Q Okay. And that has entries including 1 8 hour, 24 hours, and 15 days, right? 9 A Yes. 10 Q And then there is a readout of what the 11 Cmax was at that particular point in time, right? 12 A That's -- that's right. 13 Q Okay. And so for example, the iris and 14 the ciliary body, the time to maximum 15 concentration was determined to be 24 hours after 16 the administration, right, after the study was 17 concluded? 18 A Yes. 19 Q Whereas, in the conjunctiva the two 20 readouts that was found to be one hour after the 21 study concluded, right? 22 A Right, right. 23 Q Okay. Now, the study for the .2 percent 24 administration of brimonidine, that only picked a 25 single point in time, right?

153 1 A Okay. That's correct. 2 Q And that was two hours after the last 3 administration on day 5, right? 4 A That's right. 5 Q And so we don't know, because it is only 6 one point in time where on the curve it might have 7 been for purposes of determining the maximum 8 concentration? 9 MR. LUNEACK: Object to the form, 10 mischaracterizes. 11 A I would -- I would -- you point out -- you 12 point out a good kind of methodological 13 distinction here. I would say that in most cases 14 probably what is going on is that you have -- you 15 know, I would -- so remember that the -- yes, so 16 this is 24. 17 So yes, I think in most cases, it is 18 likely that -- yeah, there are going to be some 19 differences, but in my mind the fact that, that it 20 -- that the -- certain tissues you have a later 21 Tmax as -- as in Table 3, part of that probably has 22 to do with the tissues where the drug is taking 23 some time to get to. 24 You know, there -- you would expect that 25 the tissues where you have kind of a Tmax that is	155 1 was designed to look at to determine a Cmax. 2 I would say that the expectation is that 3 in -- in front of the eye tissue such as the 4 conjunctiva and the cornea, then the Cmax -- the 5 Tmax as -- as is written here in the table is very 6 early. I would imagine that a difference between 7 one hour -- there is not much of a difference 8 between one hour and two hours. 9 And the fact that some of the other 10 tissues show Tmax as of 24 hours, it is probably, 11 as I said, related to the fact that they're a 12 little more -- they're more internal and may not 13 have -- the pharmacokinetic pattern for those 14 tissues is going to be different. 15 Q So let me -- a couple of follow-ups then. 16 First of all, with respect to Cmax, that is a term 17 that you adopted and used throughout your 18 declaration. Was that imprecise? 19 A I mean, I'm using the term borrowing it 20 from the paper, but I would -- yeah, I would say 21 that that is, when applied to a study like this 22 where there are only a few time points it is -- it 23 is an imprecise term. 24 Q And the -- 25 A A better term would just be to say a
154 1 earlier or tissues where -- that are closer to 2 where the drug is being applied. And the tissues 3 that are kind of further away such as the ciliary 4 body, those are -- those are -- those are probably 5 less -- those probably reflect, you know, less 6 change from over time. I would imagine those -- 7 those are often pigmented tissues. Brimonidine is 8 known to bind the pigment and so they might just 9 not have that much -- as much change over time. 10 Q Okay. I guess my -- 11 A Yeah. 12 Q -- my question was a little bit more 13 simple, right. Is that at least in that 0.2 14 percent study, we don't know where on the exposure 15 curve the brimonidine concentration was measured 16 at, right? 17 MR. LUNEACK: Object to the form, 18 mischaracterizes. 19 A Yeah. So yes and no, let me explain. I 20 mean, it is a good question. The issue as I said 21 upfront was -- I actually really dislike the use 22 of their use of the term Cmax here in a study like 23 this, because yeah, we don't -- we don't -- these 24 are -- these are snapshots in time. This isn't 25 really a real Cmax. This isn't a study that really	156 1 concentration, right -- 2 Q Right. 3 A -- at a certain time, yeah. 4 Q Right. And so all of the concentrations 5 measured at hour 2 following administration of the 6 .2 percent is what was reported in the bar graph 7 that is in your declaration, right? 8 A Yeah. 9 Q And then what is in Table 3 is the highest 10 concentration at the particular time that it was 11 observed when there was sampling done at 1 hour, 12 24 hours, and 15 days after administration, right? 13 A Yes. 14 Q Now, you then compared the concentrations 15 observed in the .2 percent study against the 16 reported Cmaxs in this Table 3, the .5 percent 17 study, right? 18 A Yes. 19 Q And you identified a couple of tissues 20 that overlap between the two studies including the 21 cornea, the aqueous humor, the ciliary body and 22 the iris, right? 23 A Yeah, let me go back to the declaration. 24 Q It is on page 15, paragraph 34 into -- 25 A Yeah, okay.

157 1 Q So you identified those four tissues as 2 being overlapping tissues between the two studies, 3 right? 4 A Yeah. 5 Q And what you did was you extrapolated from 6 the bar chart roughly what the concentration was 7 observed two hours after the last dose, right? 8 A Yes. 9 Q And then you reported out the numbers of 10 brimonidine from Table 3 that correspond to those 11 tissues, right? 12 A Yes, correct. 13 Q And then in doing -- by dividing one by 14 the other, you got a number that represents your 15 estimate of the full -- of increasing 16 concentration from the 2 percent -- .2 percent 17 study to the .5 percent study, right? 18 A Yes, it is. 19 Q And so at least for two of the data 20 points, the ciliary body and the iris, those were 21 Cmaxs that were obtained 24 hours after the study 22 was complete in the .5 percent study, right? 23 MR. LUNEACK: Object to the form. 24 A The -- yes, the time points post last dose 25 were different in those, yes, because there was --	159 1 A Right. It may -- it may -- I think what 2 I'm trying to say here is it may -- it may -- the 3 concentrations in those tissues may -- may not 4 reflect the -- you know, typically, let's say, on 5 the front of the eye tissues on the -- on the -- 6 on the cornea, in the conj, you see more of a -- 7 of a peak-to-trough variability that reflects time 8 when the drug was dosed. 9 Tissues are a little further away that are 10 not right where the drug is being dosed or close 11 to it, may not have as much peak-to-trough 12 variability over time. Do you follow what that -- 13 Q Yeah, I understand what you are saying. 14 A Okay. 15 Q I don't -- I don't necessarily understand 16 how it impacts this, but let me -- let me try it a 17 different way, I guess. 18 A Sorry about that. 19 Q That is okay. It is not your fault, I 20 promise you that. 21 I guess just in view of our conversation 22 right now, Dr. Gil, where the ciliary body and the 23 iris were not reported to reach a Cmax until 24 24 hours after the study was concluded, do you still 25 think it was appropriate to hold those out as
158 1 Q By 22 hours, right? 2 A Yes, yes. 3 Q And you postulated earlier that the reason 4 that there may be a Tmax observed at 24 hours for 5 the ciliary body and the iris is because it takes 6 a longer time for the drug to get to those 7 portions of the eye? 8 A Yeah, there are a number. I mean, part of 9 it is designed to get there. Again, this is at 10 steady -- close to steady -- probably either close 11 to or at steady state. I think it is also 12 possible that in those tissues as I say there 13 is -- there is typically pigmentation, there is, 14 melanin, and brimonidine binds to melanin. So 15 there may just be kind of a -- you may just kind 16 of get to some build up of tissue in a steady 17 state so it is less -- it may be less -- there may 18 be less change over time in those tissues. 19 Q So in -- in these tissues that may have 20 pigmentation, the brimonidine may accumulate more 21 over time? 22 A Yes. 23 Q And these tissues just by virtue of their 24 location in the eye, may take longer for the 25 brimonidine to get there, right?	160 1 examples of increases in concentration from the .2 2 percent study? 3 MR. LUNEACK: Objection. 4 A So, you know, I think -- I think -- I 5 think it would call -- say that the weight of the 6 evidence for the ciliary body and iris may be a 7 little less strong. There is a little -- yeah, I 8 would certainly say there is -- and it is -- it is 9 a good caveat that -- that -- that -- that I 10 should have called out. 11 I think, you know, I think the overall 12 conclusion about dose proportionality probably 13 doesn't change if we just focus on the cornea and 14 the aqueous humor. 15 Q Okay. Now, the -- you took these -- 16 this -- this increase in concentration, this 3.2 17 to 3.64 that you calculated and you used that to 18 make certain estimates of what concentrations 19 could be observed in a .025 percent administration 20 of brimonidine, right? 21 A Yes. 22 Q And so earlier you testified that your 23 analysis about dose proportionality was really 24 supposed to be directional, right? 25 MR. LUNEACK: Objection, mischaracterizes.

161 1 Q Is that right? 2 A Yeah. Yeah, not -- not in absolute with 3 not absolute precision, but given the differences 4 between how the experiments were done that there 5 would be some expectation of some -- some 6 differences. 7 Q But then you used those -- you used the 8 quantification of those two studies, that 9 comparison that you performed, to make a 10 quantified prediction about what the concentration 11 of 0.025 percent of brimonidine would be in the 12 conjunctiva and sclera, correct? 13 A Yeah, let me -- let me -- you know, and 14 the reason I'm doing that again is, you know, part 15 of what I would -- what I'm -- was thinking 16 through is I was preparing this is, you know, I 17 made this -- I made this statement in there that I 18 was kind of actually totally surprised that when I 19 became aware of the Lumify product that I was 20 actually really surprised that that low dose 21 worked. 22 And so part this is sort of thinking back 23 about what was -- what was the -- what was the 24 data we had in front of us that steered us away 25 from looking at that, right. And you know, in	163 1 by administering a .025 percent of brimonidine, 2 right? That is part one of your calculation, 3 right? 4 A Yes. 5 Q And then you compare that to the work that 6 Burke reported in 1996 about the amount of 7 concentration of brimonidine that was required for 8 vasoconstriction in the retinal vessel bed, right? 9 A That is -- yeah, that -- that is right. 10 That is not the -- that is not the only thought 11 process, but keep going, I will come back to the 12 other, yes. 13 Q Well, that is what you report, right, 14 you -- 15 A Yes. 16 Q -- look at Burke 1996 -- 17 A Yes. 18 Q -- who identifies concentrations where 19 some vasoconstriction was -- 20 A Yeah. 21 Q -- observed and concentrations where no 22 vasoconstriction was observed, right? 23 A Yes. 24 Q Those observations were retinal blood 25 vessels in the back of the eye, right?
162 1 doing that, this is the kind of data that I might 2 look at. And again, yeah, you know, even if we're 3 off two or threefold on those numbers, the point 4 is I'm looking at that and saying as we -- as we 5 talked about earlier this morning, you know, the 6 whole -- the whole thing about drug development is 7 trying to derisk what you are doing. 8 And so, you know, this -- this would be 9 looking at this and going, boy, this is overall -- 10 one needs to get to pretty significant 11 concentrations here. I'm not sure, you know, if 12 this data when I -- when I put this all together 13 says to me that is going to be, you know, if -- if 14 you were even thinking about going to a low dose, 15 you are looking at that going, I don't think we 16 have enough -- we're going to have enough 17 concentration to have the -- have the effect. 18 So I think that is -- so, you know, yeah, 19 we -- we put in exact numbers here, and then it is 20 a matter of saying, okay, even if that is off by 21 twofold, I'm still in a place where our -- that is 22 a pretty -- pretty risky place to go. 23 Q Well, and to be clear though the -- you 24 extrapolate what you think the concentration of 25 brimonidine would be in the sclera and conjunctiva	164 1 A Uh-huh, yes. 2 Q And you compared those concentrations for 3 where vasoconstriction was and was not observed in 4 those retinal blood vessels against what you 5 calculate the expected concentration of 6 brimonidine would be in the conjunctiva and 7 sclera, right? 8 MR. LUNEACK: Objection, form. 9 A Yes. Yes, that is -- that is right. I 10 would point out as well that the concentrations 11 here that we project in the range of 2 to 6 12 micromolar. And again, those are -- that would be 13 the total concentration drug measured in the 14 tissue doesn't take into account the -- that not 15 all of that drug was available to act on the 16 cells. Again, because drugs get bound up in the 17 tissue, they're not all free -- freely moving 18 around. 19 So when you look at what we also knew 20 about what the -- what the concentration of 21 brimonidine is needed to act on an alpha-1 22 receptor, you know, you look at that and you say 23 I'm just not -- I don't think we're going to have 24 enough free concentration of drug in the tissue to 25 achieve the effect.

165 1 Q To achieve an alpha-1 effect? 2 A To -- to achieve an alpha-1 effect. 3 Q And that is a premise of your opinions is 4 that in 2008 a person of skill in the art would 5 have only thought brimonidine would be effective 6 as a vasoconstrictor in concentrations high enough 7 to achieve an alpha-1 effect? 8 MR. LUNEACK: Objection to the extent it 9 mischaracterizes. 10 A The -- the thinking was based on what we 11 knew about the concentrations you needed to 12 achieve with brimonidine to get corneal -- to get 13 conjunctival blanching, right. We knew we had to 14 go to extremely high concentrations. The .5 15 percent was really where significant conjunctival 16 blanching was reported, which we knew was well 17 above where -- where alpha-2 effects were. 18 And, you know, the -- the -- in 2008, even 19 though we understood and we talked earlier that 20 there were -- that you could achieve -- that 21 alpha-2s could cause vasoconstriction in 22 particular vascular beds, there was -- there was 23 no data at that time that suggested that alpha-2s 24 -- alpha-2 activity could have a vasoconstrictive 25 effect on -- on conjunctival microvasculature.	167 1 alpha-2. I would say for alpha-1 it is -- it is 2 more clear. I think -- I think -- I think when 3 we're -- the literature was -- is pretty 4 consistent that alpha-1s are always 5 vasoconstrictive. 6 Q And the -- 7 A It is the alpha-2s that is very species 8 dependent, state dependent, and vascular bed 9 dependent and even -- even the way the drug is 10 administered. 11 Q And so the analysis that you did in your 12 declaration from Burke and Acheampong 2002 was to 13 compare the vasoconstriction ability of 14 brimonidine in one vascular bed to predict what 15 may happen in other vascular beds, right? 16 MR. LUNEACK: Objection, vague. 17 A To predict the concentration needed -- 18 that would be needed to achieve vasoconstriction 19 in another vascular bed that we believed also was 20 alpha-1 -- that a person of ordinary skill in the 21 art would -- would also have thought at the time 22 was alpha-1 mediated. 23 Q Now, in -- in the comparison of the .2 24 percent study and the .5 percent study from 25 Acheampong in 2002, you didn't compare
166 1 Q Okay. So as of 2008, do you agree that 2 people of skill in the art would have understood 3 that alpha-2 agonists could cause vasoconstriction 4 in certain vascular beds? 5 MR. LUNEACK: Objection, vague. 6 A There was -- there was certainly 7 literature by 2008 that said that alpha-2 could be 8 vasoconstrictive in some vascular beds, but no 9 data on the -- on the vascular beds in the -- in 10 the conjunctival and probably anywhere in the eye. 11 I'm not sure there was any data on the eye in 12 that. 13 Q Well, certainly Burke at least in 1996 14 showed that if there -- the alpha-2 agonist 15 brimonidine wasn't causing vasoconstriction in the 16 retinal cells, right? 17 A Right, at the concentrations they were 18 getting to the retina, yes. 19 Q And this goes back to, I think, something 20 that we talked about earlier that the -- the 21 behavior of different alpha-1 and alpha-2 22 receptors in different tissues in the body is very 23 complicated, right? 24 MR. LUNEACK: Vague. 25 A It -- it is particularly complicated for	168 1 concentrations observed in the conjunctiva or 2 sclera, did you? 3 MR. LUNEACK: Object to the extent it 4 mischaracterizes. 5 A Are you asking me in the declaration or 6 what they did in the paper? 7 Q Well, it is kind of both, but let's do 8 your declaration, right. In paragraph 34 that has 9 the table on page 15, do you see that? 10 A Yeah, yes, yes. 11 Q And the four tissues that you compare, 12 cornea, aqueous humor, ciliary body and iris, 13 right? 14 MR. LUNEACK: Objection, vague. 15 A Yes. 16 Q You did not include a comparison of the 17 concentrations of brimonidine observed in the 18 conjunctiva or the sclera, right? 19 MR. LUNEACK: Objection, vague, 20 mischaracterizes. 21 A I believe that those weren't studied at 22 both concentrations. 23 Q You got ahead of me. So you didn't -- you 24 didn't include those concentrations because you 25 didn't have the data to make that comparison,

169 1 right? 2 A That's -- 3 MR. LUNEACK: Same objections. 4 A -- correct. 5 Q And so you used the information for these 6 other tissues to extrapolate what you would 7 predict the -- the -- how you would predict the 8 dose relationship between the administration of 9 brimonidine and the concentration observed in 10 those tissues, right? 11 A That's right. 12 Q You reference the concept of steady state 13 a few times in your testimony. Do you recall 14 that? 15 A Yes. 16 Q What is steady state? 17 A So steady state, I don't have a good -- I 18 don't have an actual pharmacokinetic definition of 19 it. But I think steady state references that at 20 some point in time with chronic or repeat dosing 21 you achieve an equilibrium. So what happens 22 typically when you dose a drug in a complicated 23 tissue like the human body or in the -- even in 24 the eye, it takes some time for an equilibrium to 25 be achieved across the various tissues in the eye.	171 1 depressions in the concentration of drug is also 2 not decreasing, right? 3 MR. LUNEACK: Objection, vague. 4 A Just to correct that a little bit, one can 5 still get some troughs. 6 Q Right, but they go down to kind of the 7 same general level, right? 8 A Well, it always goes to the same level, 9 yes. 10 MR. LUNEACK: Objection, form. 11 Q So the maximum concentration observed 12 generally levels off and the low concentration 13 being observed generally levels off when you are 14 at steady state? 15 MR. LUNEACK: Same objection. 16 A That is my understanding, yes. 17 Q And do you know how long or whether there 18 was any data reported on how long it took 19 brimonidine to reach steady state when 20 administered as an ocular drop? 21 MR. LUNEACK: Feel free to review the 22 reference if you need to. 23 A Okay. 24 Q I will save you some time if you can go to 25 page 424 describing the multiple topical dosing of
170 1 And so steady state means at a point in 2 time where that equilibrium has been achieved and 3 that with subsequent dosing the Cmax and the -- and 4 the trough levels will not change. 5 Q Okay. So the concept of steady state is 6 -- well, let me take a step back. 7 Every time you dose a drug, you are 8 generally expecting to see at least some increase 9 in the exposure of the drug in a tissue or blood; 10 is that fair? 11 MR. LUNEACK: Objection, form. 12 A Yes, the idea is that -- sorry, I cut you 13 off, Matt. 14 MR. LUNEACK: That is okay, objection 15 mischaracterizes. 16 A The concept is over -- over the -- over 17 the early period of time the drug is going in and 18 out of cells, going in and out of tissues. And -- 19 and it is reaching, it is saturating certain 20 binding sites. So it is going to take some time 21 for it to accumulate and reach a level at which it 22 no longer further increases. 23 Q And -- and also to the extent that the 24 administration of the drug is continuous, it also 25 reaches the steady state that the troughs or the	172 1 the .5 percent. 2 A Uh-huh. I see that. 3 Q Steady state levels of radioactivity were 4 reached by day 7 of the study. Do you see that? 5 A Yes, I see it now, yes. 6 Q Does that give you a reasonably good proxy 7 of when steady state of the brimonidine was also 8 achieved? 9 A Yeah. In the caveat there -- yes, so -- 10 yes, in the caveat there is without seeing that 11 exact data, which you never know is did they just 12 measure day 1 and day 7 and day 14, and then day 7 13 and day 14 looked the same, or if they had 14 measured day 5 would it already be at steady state 15 at day 5. So certainly by day 7 it is -- it 16 suggests it is at steady state. I'm not sure you 17 can conclude that it wouldn't be at steady state 18 by day 5. 19 Q That is fair. 20 A Yes. 21 Q Okay. So the Burke paper is published in 22 1996, right? 23 A Yes. 24 Q And you understand from purposes of this 25 litigation the critical date is August of 2008,

173 1 right? 2 A Yes. 3 Q So that is 12 years in between the 4 publication of Burke and the date that this person 5 of ordinary skill in the art is assessing the 6 state of the prior art, right? 7 A Yes, I understand. 8 Q Now, as of 2008, was it known that 9 ophthalmologists administered brimonidine as part 10 of Lasik to reduce hyperemia? 11 MR. LUNEACK: Objection, scope. 12 A I'm not -- I'm not aware of that. I know 13 that brimonidine was used in -- by 14 ophthalmologists post Lasik often to take 15 advantage of its -- it had somewhat of a small 16 myotic effect, meaning a somewhat decrease of 17 pupil size, which often helped with the side 18 effect. Often post -- post Lasik one had a little 19 bit of glare at night, and the reduction in pupil 20 size would help that. 21 And so that was one of the -- one of the 22 -- I know -- I know it was very commonly used post 23 Lasik, but I'm not familiar with the literature 24 specific to brimonidine in hyperemia and those 25 studies.	175 1 brimonidine you could get a vasoconstriction. So 2 it would certainly make sense if ophthalmologists 3 were using it for that. 4 Q Okay. Why don't we take a short break. I 5 have a few more questions, but I doubt I will go 6 another full hour. 7 VIDEOGRAPHER: We're going off the record, 8 the time is 14:04. 9 (Recess, 14:04 to 14:16 p.m.) 10 VIDEOGRAPHER: We're now back on the 11 record, the time is 16 -- I'm sorry, 14:16. You 12 may proceed. 13 Q Thank you. Dr. Gil, can we go to 14 paragraph 26, page 10 of your declaration? 15 A Yes. 16 Q Towards the end of that you reference some 17 clinical experience that you had with Alphagan? 18 A Yes. 19 Q And this is -- you referred to this a few 20 times in your testimony, the observation of the 21 adverse effect of blanching, right? 22 A Yes, correct. 23 Q Okay. And so basically your testimony is 24 that Allergan as part of its work with Alphagan 25 conducted clinical trials on different
174 1 Q Okay. So you don't know whether by 2008 2 it was known or being published that 3 ophthalmologists were administering brimonidine as 4 part of Lasik to reduce hyperemia? 5 A Yeah, I just don't -- I'm sorry, Matt. 6 MR. LUNEACK: Objection, asked and 7 answered. Just slow down a little bit, doctor. 8 A Okay. 9 MR. LUNEACK: You can answer. 10 A Yeah, I don't specifically recall -- 11 recall seeing -- seeing articles on that. 12 Q Was brimonidine understood to be a potent 13 vasoconstrictor in the eye by 2008 in your view? 14 MR. LUNEACK: Objection, vague. 15 A At high concentrations it was understood 16 to be a vasoconstrictor. So as we talked about, 17 you know, the -- you know, on the label, you know, 18 it -- it -- the .5 percent concentration in early 19 clinical studies had up to 50 percent blanching, 20 which is understood to be due to vasoconstriction. 21 .2 percent had some blanching, but a pretty small 22 incidence I think in the -- in the 3 to 5 percent 23 range, if I recall. 24 And so yes, it was understood that at the 25 higher -- at the higher applied concentrations of	176 1 concentrations of brimonidine, right? 2 A That's right. 3 Q There is clinical trials of .5 percent, .2 4 percent, and .15 percent of brimonidine in the 5 Alphagan products, right? 6 A As -- as well as .08 percent. 7 Q Okay. In the labels for the two higher 8 concentrations, .5 percent and .2 percent, there 9 is the reference to the occurrence of a side 10 effect known as blanching, right? 11 A That's right. 12 Q And in the .15 percent label blanching is 13 not reported, right? 14 A That is right. 15 Q Were you involved in the clinical trial 16 for .5 percent Alphagan? 17 MR. LUNEACK: Objection, asked and 18 answered. 19 A As I mentioned before, I was not involved. 20 I was at the company at the time, but I was not 21 involved. 22 Q Okay. Were you involved in the clinical 23 trial for .2 percent of Alphagan? 24 MR. LUNEACK: Same objection. 25 A Not in the conduct of the trial. As -- as

177 1 the part of the alpha-adrenergic team I was 2 familiar with what was going on with the trial, 3 but not -- I was not involved in the conduct of 4 it. 5 Q And were you involved in the conduct of 6 the .15 percent Alphagan P clinical trial? 7 MR. LUNEACK: Same objection, vague. 8 A In the -- in a similar way as part of the 9 alpha-adrenergic team. I was certainly familiar 10 with what -- the planning and -- and the progress 11 of the clinical studies. 12 Q With the .5 percent Alphagan clinical 13 trial, how was blanching measured? 14 A I believe that was on a basis of physician 15 observation. 16 Q And how was blanching defined? 17 A That I do not recall. 18 Q Do you know whether there was particular 19 portions of the eye that the physician was looking 20 in to see signs of blanching? 21 MR. LUNEACK: Objection, vague. Is there 22 a particular reference you would like him to refer 23 to. 24 MR. FREDERICKSON: No, I would just like 25 his testimony. Thanks, Matt.	179 1 Alphagan P clinical trial? 2 MR. LUNEACK: Objection, asked and 3 answered. 4 A Correct, I do not. I do not know. 5 Q There is no -- you cite to the label, 6 Exhibit 63, as being the evidence of the 7 observations of different forms of blanching, 8 right? 9 (Exhibit 63 marked.) 10 A Yes. 11 Q You alluded to in your testimony, in your 12 declaration, you talked about your reaction when 13 you heard of the FDA approval of Lumify; is that 14 right? 15 A Yes, I did mention that. 16 Q And you testified in your declaration you 17 have a strong memory of the Lumify approval? 18 A Yeah, the memory being around the 19 surprise. 20 Q When was Lumify approved by the FDA? 21 A You know, I don't remember the exact -- 22 the exact year. 23 Q Do you remember where you were when you 24 first heard of Lumify's FDA approval? 25 A No, I can't say I remember where I was,
178 1 Q Do you know whether there was a particular 2 portion of the eye that physician was looking in 3 to see if there was blanching? 4 A I do not. 5 Q Do you know if there was a redness scale 6 used by the physicians to measure the effects of 7 blanching? 8 A I don't. 9 Q What about in the .2 percent Alphagan 10 clinical trial, do you know how blanching was 11 defined? 12 A No. 13 Q Do you know how blanching was measured in 14 the .2 percent Alphagan clinical trial? 15 A I do not. 16 Q Do you know which tissues were evaluated 17 for signs of blanching in the .2 percent clinical 18 trial? 19 A No, no, I do not. 20 Q Do you know whether blanching was 21 something that was looked at in the .15 percent 22 Alphagan clinical trial? 23 A I don't recall. 24 Q And so presumably you don't know how, if 25 at all, blanching was measured in the .15 percent	180 1 no. 2 Q Do you remember how you heard of the FDA 3 approval of Lumify? 4 A I probably -- I don't for sure, but I 5 probably saw it on a news wire. 6 Q But do you have a memory sitting here 7 today of how you first heard of the FDA approval 8 of Lumify? 9 A No, I don't -- I don't specifically 10 remember that. I just, again, as I say I remember 11 just this -- the surprise when -- when I heard 12 about it and particularly when I heard about the 13 dose. I was -- I just recall really being 14 surprised. One of these, why didn't we think of 15 that. What did we -- what did we miss here. 16 Q And so what is it that you recall seeing 17 that led to your surprise? 18 MR. LUNEACK: Objection, asked and 19 answered. 20 A It was -- it was the fact that such a low 21 dose of brimonidine was being used to have -- have 22 a vasoconstrictive effect. 23 Q Did you see a press release, did you look 24 at the Lumify label, did you look at a clinical 25 trial report, what was it that you looked at that

181 1 led to that sense of surprise? 2 MR. LUNEACK: Objection, asked and 3 answered. 4 A I'm guessing it was a press release, but I 5 would -- but I have no -- I have no specific 6 recall of that. 7 Q Do you remember talking to anyone about 8 the Lumify approval after it occurred? 9 A I'm pretty sure I did, and -- but I don't 10 -- again, I don't have specific recollection of 11 conversations about it, the specific 12 conversations. 13 Q So you don't have any memories about the 14 -- any particular conversations you had about 15 Lumify's approval by FDA? 16 MR. LUNEACK: Objection, asked and 17 answered. 18 A Yeah. I don't have a -- I don't recall 19 any specific conversations about it. 20 Q Did you do any further research into 21 the -- the journal articles and clinical trial 22 reports that were published by Bausch concerning 23 the Lumify product? 24 A No, I didn't, because I think at that time 25 I had -- yeah -- yeah, I don't think I was that	183 1 Therapies or Dr. Horn filed prior to the FDA's 2 approval of Lumify? 3 MR. LUNEACK: Objection, vague. 4 A I don't believe I did. 5 Q So other than the strong memory of its 6 approval, the only thing that you remember really 7 is your surprise at a low concentration of 8 brimonidine being effective in the reduction of 9 eye redness? 10 MR. LUNEACK: Objection to the extent it 11 mischaracterizes. 12 Q And why didn't we think of this? 13 A Yeah. 14 MR. LUNEACK: Same. 15 Q And you have no other memories about the 16 Lumify approval, who you talked to, where you 17 heard about it from, what other steps you might 18 have taken to investigate it further? 19 MR. LUNEACK: Same objection. 20 A That is correct. 21 Q Dr. Gil, I would like to thank you very 22 much for your time. I don't have any further 23 questions. 24 A Likewise, thank you. 25 MR. LUNEACK: Let's go off the record and
182 1 involved at that point, so I don't think I did any 2 -- I didn't dig in deeply on it at that point. 3 Q Was it the -- the approval of Lumify that 4 -- was that the first time you heard about the use 5 of low concentrations of brimonidine being used 6 for eye redness? 7 MR. LUNEACK: Objection, vague. 8 A Yeah. I think that was the first time. 9 I'm trying to think about whether I was aware of 10 any clinical studies being done on low dose. I 11 don't -- I don't -- I don't believe I was. I 12 think it was really at the time of the -- of the 13 approval. 14 Q The company that is the named inventor on 15 the -- the assignee on the patents is a company 16 called Eye Therapies. Are you familiar with that 17 company outside of maybe this litigation? 18 A I am not. I'm familiar -- I'm familiar 19 with the inventor, the guy Horn, because I have 20 seen his name, because he -- he has filed other 21 patents in this area, but I don't know anything 22 about his -- I presume that is his company or 23 holding company or something, but I don't know 24 anything about it. 25 Q Did you see any of the patents that Eye	184 1 we will talk and maybe we can come back at 5:40. 2 MR. FREDERICKSON: Sure. 3 VIDEOGRAPHER: We're going off the record, 4 the time is 14:28. 5 (Recess, 14:28 to 14:41 p.m.) 6 VIDEOGRAPHER: We're going back on the 7 record, the time is 14:41. You may proceed. 8 MR. LUNEACK: Plaintiff has no questions 9 for the witness. Dr. Gil, we thank you for your 10 time. 11 MR. FREDERICKSON: Great, thank you. I 12 think that is a wrap. 13 VIDEOGRAPHER: We're going off the record. 14 The time is 14:41. 15 (Deposition adjourned at 14:41 p.m.) 16 17 18 19 20 21 22 23 24 25

Transcript of Daniel Gil
Conducted on December 31, 2023

47 (185 to 188)

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CERTIFICATE OF SHORTHAND REPORTER

I, Susan S. Klinger, the officer before whom the foregoing deposition was taken, do hereby certify that the foregoing transcript is a true and correct record of the testimony given; that said testimony was taken by me stenographically and thereafter reduced to typewriting under my direction; that reading and signing was not discussed; and that I am neither counsel for, related to, nor employed by any of the parties to this case and have no interest, financial or otherwise in its outcome.

IN WITNESS WHEREOF, I have herunto set my hand on the 1st of January, 2024.



Susan S. Klinger, RMR-CRR, CSR
Texas CSR 6531, Exp: 10/23/25
California CSR 14487, Exp: 11/30/24

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