

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD
4

5 PADAGIS US LLC
6 Petitioner,

7 v.

8 NEURELIS, INC.
9 Patent Owner.

10 Case No. IPR2025-00465

11 Patent 11,241,414
12
13
14

15 REMOTE ORAL DEPOSITION OF

16 MARC BROWN, PhD

17 MARCH 17, 2026
18
19
20
21

22 Veritext Job No.: 7950193

23 Court Reporter: Julie C. Brandt, Texas CSR, RMR, CRR
24
25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

* * *

ORAL DEPOSITION OF MARC BROWN, PhD, produced
as a witness at the instance of the Petitioner, and duly
sworn, was taken in the above-styled and numbered cause
on the 17th day of March, 2026, from 9:12 a.m. to 5:03
p.m. Central Time, before Julie C. Brandt, RMR, CRR, and
CSR in and for the State of Texas, reported by machine
shorthand at McDermott Will & Schulte LLP, 2801 Harwood
Street, Suite 2600, Dallas, Texas, with the questioning
attorney appearing remotely via Zoom.

* * *

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

APPEARANCES

FOR THE PETITIONER:

Chad A. Landmon (Remote via Zoom)
Christopher Jones (Remote via Zoom)
POL SINELLI
1401 Eye ("I") Street, N.W.
Suite 800
Washington, D.C. 20005
clandmon@polsinelli.com
chris.jones@polsinelli.com

FOR THE PATENT OWNER:

David Tobin
McDERMOTT WILL & SCHULTE
2801 Harwood Street
Suite 2600
Dallas, Texas 75201
dtobin@mwe.com

- and -

Hannah Hurley
McDERMOTT WILL & SCHULTE
650 Live Oak Avenue
Suite 300
Menlo Park, California 94025-4885
hhurley@mwe.com

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

INDEX

PAGE

Appearances.....	3
Proceedings.....	6
Stipulations.....	214

MARC BROWN, PhD

Examination by Mr. Landmon.....	7
Examination by Mr. Tobin.....	214

Signature and Changes.....	215
Reporter's Certificate.....	217

DEPOSITION EXHIBITS

IDENTIFIED

Exhibit 1010	Meezan Patent Application	152
Exhibit 1040	'876 Patent IPR	67
Exhibit 1064	Gwozdz Provisional Patent	146
Exhibit 1071	U.S. Patent No. 9,763,876	69
Exhibit 1072	Gizurarson Declaration for '876	84
Exhibit 1073	Excerpts from Enhancement in Drug Delivery	130
Exhibit 1074	U.S. Patent No. 6,962,691	160
Exhibit 1075	Meezan Specification Amendment	171
Exhibit 1076	Maggio Declaration	184
Exhibit 2049	Curriculum Vitae	14

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Exhibit 2051	Streitwieser excerpts from	92
	Introduction to Organic	
	Chemistry, Fourth Edition	
Exhibit 2072	Brown Declaration Patent '546	19
Exhibit 2073	Brown Declaration Patent '414	20
Exhibit 2074	Brown Declaration Patent '786	21

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

P R O C E E D I N G S

(Witness was placed under oath.)

THE REPORTER: This deposition of
Dr. Marc Brown is being conducted remotely via Zoom.

Today's date is March 17, 2026, and the time
is 9:07 a.m. Central Time.

The witness is located at the offices of
McDermott Will & Schulte in Dallas, Texas.

My name is Julie Brandt, Texas Certified
Shorthand Reporter No. 4018. I have administered the
oath and I am in person with the witness and will be
reporting the deposition through stenographic means.

Counsel, please state your appearances for the
record, beginning with the taking attorney, and then we
may proceed.

MR. LANDMON: Good morning. This is Chad
Landmon with Polsinelli. With me today also is Chris
Jones on behalf of Padagis.

MR. TOBIN: Good morning, everyone. This
is David Tobin from McDermott Will & Schulte. With me
in the room is Hannah Hurley form the same firm. We're
here on behalf of patent owner. We're also here on
behalf of the witness, Dr. Brown.

And just for the record, we understand that
video is not being recorded on today's deposition.

1 THE REPORTER: Actually, if we could go
2 off the record.

3 (Discussion off the record.)

4 MARC BROWN, PhD,
5 having been first duly sworn, testified as follows:

6 EXAMINATION

7 BY MR. LANDMON:

8 Q. Good morning, Dr. Brown. Can you just state
9 your name for the record?

10 A. Yeah. Dr. Marc Barry Brown.

11 Q. Great. I'm going to start by going just over
12 some ground rules for the deposition. I'll do my best,
13 obviously, to ask some clear questions. But if you
14 don't understand a question, can you please stop me and
15 ask me to clarify? Otherwise, I'll assume that you
16 understand my question. Does that make sense?

17 A. Yeah, that's fine.

18 Q. It's important, obviously, that we try not to
19 talk over one another so the court reporter can take
20 down all of your testimony. Also, you may hear some
21 objections from your counsel as well from time to time.
22 So let's try and do that. I know it gets harder over
23 Zoom. And certainly, if I ever interrupt you, let me
24 know. But we'll try; let's do our best.

25 Unless counsel instructs you not to answer,

1 you should still go ahead and answer the questions if
2 you can. Does that make sense?

3 A. Yes, it does, thank you.

4 Q. We'll try and take a break, you know, call it
5 every hour, hour and a half. But certainly if you need
6 to take a break, just let me know. We might try and
7 finish out a question or two, but we can certainly go
8 off the record whenever you do need a break.

9 Because we are doing this remotely now, given
10 my travel issues yesterday, I'm going to ask you just a
11 few unique questions to doing this remotely. And I
12 guess first I understand that in the room with you is
13 the court reporter, Mr. Tobin and Ms. Hurley. Is there
14 anyone else in the room with you?

15 A. No, there isn't. No.

16 Q. Okay. I also understand that you have in
17 front of you your three declarations that you submitted
18 in the IPR proceedings. Is that right?

19 A. I do, yeah.

20 Q. Okay. Do you have any other documents with
21 you?

22 A. I do have other documents with me. I have the
23 three patents, and the prior art and my CV.

24 Q. Okay. And is there any highlighting --

25 A. No.

1 Q. -- or writing or notes on any of these
2 documents?

3 A. No, absolutely nothing.

4 Q. Other than the laptop in front of you and your
5 phone, do you have any other devices that are open in
6 front of you today?

7 A. As -- yeah, I have my phone in front of me,
8 which is purely there to monitor my sugars. And for the
9 avoidance of any doubt, I have a CGM, which is a
10 continuous glucose monitor, in my skin, and that's
11 attached to a pump which is operated Bluetooth by my
12 phone. I also have a banana and a bottle of water, but
13 I guess they're not devices.

14 Q. Yeah. Certainly let me know if --

15 MR. TOBIN: Chad, the audio cut out.

16 You said certainly let me know and then --

17 THE WITNESS: He's frozen on the screen.

18 MR. TOBIN: -- the audio cut out.

19 Your audio cut out, Chad. You said certainly
20 let me know, and then there was about a 10-second pause
21 where you were doing your best mime impression.

22 Q. (BY MR. LANDMON) Sorry about that. I was
23 saying certainly let me know if you need to take a
24 break, if any of your devices are letting you know that
25 you need to take a break.

1 A. Okay.

2 Q. So other than potentially conferring with your
3 counsel on privilege issues, can you agree not to
4 communicate with anyone about the substance of your
5 deposition, including any of my questions, during the
6 course of today?

7 A. I can.

8 Q. And have you been deposed before?

9 A. I have, yes.

10 Q. Okay. About how many times?

11 A. In the UK, I would say probably around four or
12 five times.

13 Q. And are those in conjunction with doing --
14 well, sorry, let me back up.

15 You said in the UK. Have you ever been
16 deposed in a US proceeding?

17 A. Yeah, the four or five I gave you were US
18 proceedings, because in the UK, you're not -- I don't
19 understand the technical differences legally, but it
20 goes straight to court. So there isn't a deposition.

21 Q. Were you serving as an expert witness in those
22 cases?

23 A. Yes, apart from one when I was a factual
24 witness.

25 Q. Okay. What was -- obviously, without breaking

1 any confidentiality agreements you may have had in
2 place, in the issue that was a fact witness, what was
3 the nature of that proceeding?

4 A. I was a -- an inventor on the patent.

5 Q. What was that patent directed to?

6 A. It was a formulation patent.

7 Q. What type of formulation?

8 A. A topical skin formulation.

9 Q. Do you recall -- do you recall what that
10 patent was directed to in terms of what the substance of
11 the patent was?

12 A. I'm not sure I understand the question, but it
13 was a formulation composition patent, yeah.

14 Q. Do you recall what was in that formulation?

15 A. I recall the drug, but not everything that was
16 in it. This was a long time ago.

17 Q. Okay. What was the drug?

18 A. The drug was Picato.

19 Q. Can you spell that for me?

20 A. P-I-C-A-T-O. Believe me, that's better than
21 the actual drug name, which is ingenol mebutate. But,
22 yeah, that's the name of the product.

23 Q. I'll stop with Picato then.

24 So did that product go to market?

25 A. Yeah, it was on the market for a few years,

1 yes, in the US and Europe.

2 Q. Who marketed that?

3 A. Leo. Although --

4 Q. Is that -- sorry.

5 A. I was going to say, although the work I did
6 was for a company before Leo. It was invented with a
7 company called Peplin.

8 Q. Is that patent listed in your CV?

9 A. I am pretty sure it must be, yeah.

10 Q. Okay. We can take a look at that in a little
11 bit.

12 A. Okay.

13 Q. Do you know -- so you testified in a
14 deposition in that case. Did you testify in court as
15 well?

16 A. No.

17 Q. Okay. Do you know, was there a trial
18 proceeding related to that patent?

19 A. Off the top of my head, I couldn't tell you
20 how it ended up. The deposition was in the UK. It came
21 to the UK for the deposition.

22 Q. And was that a proceeding that was a patent
23 litigation or an IPR proceeding like we have here?

24 A. As far as I recall, that was patent
25 litigation, but I'm not a lawyer. And it was a long

1 time ago. So, as I remember -- I can look in my CV,
2 because I think it's detailed in there you if you wanted
3 confirmation.

4 Q. Why don't we turn to that in a bit. I'll ask
5 you about your other deposition experience, and then
6 we'll turn back to that.

7 A. Okay.

8 Q. So you mentioned being deposed in I think it
9 was four other cases then?

10 A. Yeah, around that. I'm just getting the page
11 up on my CV.

12 Q. Okay. We can turn to that then. And maybe
13 that's easier anyways.

14 A. So in my CV, it's the one referenced in 2014
15 on page 24, which is the English patent cause in the
16 case of Leo v. Teva.

17 And then the one that I was -- it's the one in
18 2017, and where it was a United States District Court,
19 Delaware, in the case of Leo Pharma versus Perrigo,
20 civil action fact witness for a patent family which I
21 co-invented. So that's the one I was talking about,
22 2017.

23 Q. And just for the record, so your CV that we're
24 talking about, it's Exhibit 2049 in this proceeding.
25 Just wanted to --

1 A. Sorry. Yes. It's the one in 2017.

2 Q. It's my job, not yours, to make sure we get
3 the exhibit numbers down. So I appreciate it.

4 (Exhibit 2049 marked.)

5 Q. (BY MR. LANDMON) So is this a complete -- so
6 back up, sorry. We're referring to your CV,
7 Exhibit 2049. And we're on page 24, as you mentioned.

8 A. Yeah.

9 Q. Is this a complete list of every case that
10 you've given deposition testimony in?

11 A. As far as I remember, yes, that is a complete
12 list.

13 Q. Okay. And are any of these IPR proceedings?

14 A. So the one in 2021, which is for Dermavant,
15 that was a US PTO patent prosecution. I don't know
16 whether that's the IPR that you're asking about.

17 And then the one in 2024 where I -- for
18 Madera, which was where I was giving an opinion for the
19 US PTO.

20 Q. And in all of the cases you served as an
21 expert witness, have you -- has your work always been
22 done on behalf of the patentholder?

23 A. I believe that's the case, yeah.

24 Q. Okay. Have you ever given expert opinion --
25 strike that.

1 You've never given an expert opinion that a
2 patent is invalid, right?

3 A. Not as far as I recall, no.

4 Q. Okay. And just so I kind of finish some of
5 the ground rules today, I probably should have finished
6 these earlier, but you understand today your testimony
7 is under oath and has the same force and effect as if
8 you were in court, right?

9 A. I do, yes.

10 Q. Okay. And you understand that the court
11 reporter is taking a transcript of your testimony and
12 that you may review -- that testimony may be reviewed
13 and relied on by parties and the judges in this
14 proceeding, right?

15 A. I do.

16 Q. And is there anything today preventing you
17 from providing truthful and accurate testimony?

18 A. No.

19 Q. What did you do to prepare for your
20 deposition?

21 A. Are you talking in -- since -- are you talking
22 the last few days or during the entire process I was
23 engaged?

24 Q. So I guess I would say let's focus now just on
25 preparing for the deposition. I don't know how far back

1 you started preparing, but, obviously, you issued some
2 declarations. You know, we've got those. Those are in
3 the record.

4 A. Yeah.

5 Q. So I guess I'm wondering maybe when did you
6 start preparing for your deposition, and what did you
7 do?

8 A. In terms of discussions, obviously, I did my
9 own reading around the subject and again refreshed my
10 memory because this is -- as is the way with these kind
11 of cases, been going on for a while. And I flew in on
12 Saturday, and I met my attorneys, my counsel on Sunday
13 and Monday. I mean, maybe three hours each time at the
14 most.

15 Q. And were those meetings with Mr. Tobin and
16 Ms. Hurley?

17 A. They were, yes.

18 Q. Did you meet with anyone else?

19 A. Tim West was there, too.

20 Q. Is he an attorney with McDermott Will?

21 A. Yes.

22 Q. Did you meet with anyone else?

23 A. No.

24 MR. TOBIN: Chad, just for the record, so
25 we're clear, I think his last name was Best.

1 A. Sorry. Best, not West. Me being an idiot. I
2 don't know where that came from.

3 Q. (BY MR. LANDMON) No worries.

4 Have you spoken to anyone else to prepare for
5 your deposition today?

6 A. Not as far as I recall.

7 Q. So in preparing either for your -- strike
8 that.

9 In any work that you've done for these matters
10 for Neurelis, have you spoken with Steve Cartt,
11 C-A-R-T-T?

12 A. No.

13 Q. Have you spoken with Mark Mitchnick?

14 A. No.

15 Q. Have you spoken with David Hale?

16 A. No.

17 Q. Other than counsel, have you spoken with
18 anyone else about your declarations or any of your work
19 in this proceeding?

20 A. No, I haven't. No.

21 Q. And you mentioned reviewing documents to
22 prepare today. Other than your declarations, what other
23 documents did you review?

24 A. Obviously, in the beginning I wrote some of my
25 notes, notes down and my opinions historically through

1 the time. And I looked at some of those. I also read
2 some documents on -- basically around diazepam, you
3 know, the key components of this discussion. I looked
4 at the IID from 2009, 2008. I think that's really --
5 and then there were -- obviously, during that time as
6 exhibits have come up, I've looked at those as I found
7 them and also read them. So, yeah, I also read the
8 Donovan Declaration.

9 Q. Did you read the Donovan deposition
10 transcript?

11 A. I think I did, yes.

12 Q. And the different documents you've mentioned,
13 are those documents all referenced somewhere in your
14 declarations?

15 A. Yeah, all the exhibits are the external
16 documents and the drafts. The drafts I submitted as
17 part of my declaration, yeah, are all embedded within
18 the final declaration, so yeah.

19 Q. Okay. And in preparing either for today or
20 declarations, did you review any documents that are not
21 listed as being considered in your declarations?

22 A. I don't recall so, no, but it's been -- it's
23 been quite a while.

24 Q. Sure. Well, if you happen to think of any
25 during the course of our discussions today, if you could

1 just let me know.

2 A. Yeah.

3 Q. So I just want to -- just so we're kind of all
4 on the same page of what we're talking about, we've
5 mentioned your declarations a few times. I do know you
6 said you have paper copies in front of you.

7 A. Yeah.

8 Q. We can certainly pull them up on the screen,
9 too, but I think for purposes it's probably easier on
10 your part and certainly easier on my part to just deal
11 with the paper documents. But if I can just have you
12 first look at what's Exhibit 2072, which is the
13 Declaration of Marc Brown relating to the U.S. Patent
14 No. 8,895,546.

15 (Exhibit 2072 marked.)

16 Q. (BY MR. LANDMON) And just so we're all on the
17 same page today, is it okay if I refer to U.S. Patent
18 No. 8,895,546 as the '546 patent?

19 A. Absolutely.

20 Q. Okay. And if you want to turn just to the
21 last page of your declaration, I just wanted to confirm
22 that --

23 Sorry. I am looking for your signature. I'm
24 wanting to confirm that this is your signature on there.
25 So if you'll look at the last page, is that your

1 signature, Dr. Brown?

2 A. It is my signature, yes.

3 Q. Thank you.

4 And to your knowledge, is your declaration
5 that addresses the '546 patent accurate?

6 A. To my knowledge, yes, indeed.

7 Q. Are there any corrections you would like to
8 make?

9 A. None I can think of at the moment.

10 (Exhibit 2073 marked.)

11 Q. (BY MR. LANDMON) So now if I could have you
12 turn to Exhibit 2073, which is your declaration relating
13 to U.S. Patent No. 11,241,414.

14 A. Yeah.

15 Q. And is it okay today if I refer to U.S. Patent
16 No. 11,241,414 as the '414 patent?

17 A. Yes, it is.

18 Q. And if we could look at the last page of this
19 declaration, can you confirm that that's your signature?

20 A. I can confirm that's my signature, yes.

21 Q. And to your knowledge, is your declaration
22 addressing the '414 patent accurate?

23 A. To my knowledge it is, yeah.

24 Q. Are there any corrections you would like to
25 make?

1 A. Not that I can think of at the moment.

2 (Exhibit 2074 marked.)

3 Q. (BY MR. LANDMON) And now I would just like to
4 turn to Exhibit 2074, which is your expert declaration
5 relating to U.S. Patent No. 11,793,786.

6 A. Okay.

7 Q. And is it okay today if when I refer to the
8 U.S. Patent No. 11,793,786 that I refer to it as just
9 the '786 patent?

10 A. Yes, it is.

11 Q. And if you would turn to the last page of that
12 declaration, can you confirm whether that's your
13 signature?

14 A. I can confirm that's my signature.

15 Q. And to your knowledge, is your declaration
16 relating to the '786 patent accurate?

17 A. To my knowledge, yes.

18 Q. Do you have any corrections you would like to
19 make to that declaration?

20 A. Not at the moment.

21 Q. And just so we're all on the same page, you
22 understand you're here today to testify about your
23 opinions in all three of these declarations, right?

24 A. I do.

25 Q. So since the issues you've addressed in all

1 three of these declarations were pretty similar, most of
2 my questions today will apply to all three declarations
3 and patents. Unless I specify that I'm speaking about a
4 specific declaration, you can assume my questions are
5 relevant to all three of those declarations. Does that
6 make sense?

7 A. I understand, yeah.

8 Q. And, obviously, if you need clarification
9 throughout that, just let me know.

10 A. Okay.

11 Q. So let's turn back to Exhibit 2049, which is
12 your CV. Are there any updates or changes to your CV
13 since you submitted it with your declarations in this
14 proceeding?

15 A. If you'll ask -- well, what I can say is there
16 may be some more papers that have come out since I
17 submitted it. I couldn't tell you what they were, but I
18 knew there were some being submitted. I know that
19 recently and actually in the week before last there was
20 some updated editions of book chapters, but I can't
21 think of anything else at the moment.

22 Q. Okay. Do any of those updates to either book
23 chapters or new papers deal with nasal formulations?

24 A. No, I don't believe so.

25 Q. Okay. And do any of those updates to chapters

1 or papers relate to diazepam?

2 A. No.

3 Q. Okay. So if you look at the first page of
4 your CV, there's a heading that says, education and
5 qualifications. Do you see that?

6 A. I do.

7 Q. As part of your education, did you study or
8 research nasal formulations?

9 A. As a postdoc, I did a small amount of work as
10 a -- on mucus, on mucosal delivery. My research on
11 education and qualifications was about medicinal
12 pharmaceutical chemistry in general. So there was some
13 nasal delivery aspects in that. My PhD was about ligo
14 proteins or protein interactions in general, so that was
15 fundamentally systemic.

16 Q. And in any of -- as part of your education,
17 did you study or research benzodiazepines?

18 A. In my education and qualifications,
19 benzodiazepines would be -- bearing in mind, we're
20 talking about 1986 to '90, but I'm sure benzodiazepines
21 would have been part of that, as they're an important
22 group of drugs that we would have studied.

23 Q. Okay. Do you recall studies you did with
24 benzodiazepines during your education?

25 A. I mean, it's 40 -- nearly 40 years ago. So if

1 you're asking -- no, I don't recall. Did we study the
2 various drug targets and drug characteristics, yes, we
3 did through those entire four years.

4 Q. And you see you have a section titled, present
5 positions, right?

6 A. Yeah.

7 Q. And on the second page of your CV, you then
8 have a section entitled, previous positions?

9 A. Yeah.

10 Q. During your present or previous positions,
11 have you done any research or developed any intranasal
12 formulations?

13 A. Well, if we look at 2022 to 2025, Mosanna
14 Therapeutics, that is a nasal formulation for sleep
15 apnea. And that research continues. And I continue to
16 advise those in my current position of -- in MLBT. We
17 also -- I also worked for a number of companies
18 developing nasal formulations for delivery of -- for the
19 treatment of migraines, for the treatment of pain
20 relief. We also looked at various projects on
21 benzodiazepines in the mucosal epithelium. And now as
22 I'm within MLBT, I am doing some more support work on
23 nasal formulation development. And in -- when I founded
24 and up until 2023, when I stepped down, there was at
25 least ten projects working on nasal formulation

1 development.

2 MR. TOBIN: And Mr. Landmon, just while
3 there isn't a question pending, Dr. Brown, if you have
4 any confidentiality concerns with any of the research,
5 let me know, and then Mr. Landmon and I can discuss.

6 THE WITNESS: Okay.

7 MR. LANDMON: Yeah, that makes sense.

8 Q. (BY MR. LANDMON) When was the earliest point
9 in time during your career that you did any work on
10 nasal formulations?

11 A. I would say that that was in the first few
12 years of MedPharm. So probably early 2000s.

13 Q. And in any of that work, did you use
14 permeation enhancers in the formulations?

15 MR. TOBIN: Objection to form.

16 A. I honestly couldn't recall that far back going
17 forward. And I think it would be wrong of me to talk
18 about what was in -- what is the Mosanna formulation
19 because that's proprietary.

20 Q. (BY MR. LANDMON) Okay. So that was in 2022.
21 So prior to Mosanna, you don't recall whether any
22 products used any permeation enhancers?

23 A. Well, that's an interesting question and
24 mainly because it's a long way back and I literally
25 cannot -- cannot remember. What I can say, that

1 penetration enhancers are a class of excipients that
2 have various uses, but it's also, I believe, a fair
3 point to say some penetration enhancers are actually
4 solvents. Some penetration enhancers could be something
5 in there to stabilize the formulation. And so it's
6 really hard for me to recall.

7 Q. Do you recall at any point in time prior to
8 2009 having discussions or putting thought into using
9 penetration enhancers with a nasal formulation?

10 A. Honestly, no, I don't recall.

11 Q. And you mentioned working on nasal
12 formulations involving benzodiazepines. Did any of that
13 work occur prior to 2009?

14 A. Again, I'm sorry, I just don't remember. I'm
15 just looking back at my publications to see if that's
16 any help.

17 So did you say prior to 1998? Was that the --

18 Q. 2009.

19 A. 2009. Sorry.

20 So I did do some work on nasal delivery with a
21 PhD student where we tested the delivery of certain
22 actives and we looked at the effect of things, some
23 polymers, including, as far as I recall, chitosan, which
24 was -- which was considered to be a possible penetration
25 enhancer. I think that's why it was in the study. And

1 that was also with hyaluronic acid or hyaluronan. And
2 they're the three references, M18 to M20, where
3 hyaluronic acid and chitosan would be considered as
4 potential penetration enhancers.

5 Q. And what page are you looking at on your CV?

6 A. Sorry. Page 13.

7 Q. And I think you just said this, but just so I
8 I'm clear, those are identified M18 through M20?

9 A. Yes.

10 Q. And what was the active ingredient that was
11 involved there?

12 A. It was -- as far as I recall -- I'd need to
13 read the references, and I honestly don't have it in
14 front of me -- we were looking at numerous drugs in that
15 system. I think one was gentamicin. Well, actually it
16 definitely was because it's listed. So I don't recall
17 what else we were looking at in those studies.

18 Q. What does gentamicin do?

19 A. It's an antibiotic, a quite strong one.

20 Q. And why were you looking at nasal delivery
21 relating to gentamicin?

22 A. I think one of the reasons why it was an easy
23 drug to measure because all this was -- and apologies to
24 anybody that finds this inappropriate, but these were
25 all -- a lot of these were animal studies, and

1 gentamicin is a relatively simple drug to measure in the
2 bloodstream. And the focus on these were actually -- I
3 was -- I had at the time a reputation of working on
4 polymers like hyaluronic acid. As you can see from the
5 previous work, I was looking at how they hydrated and
6 stuck to the nasal mucosa and enabled increased
7 delivery. So we were looking at mucosity and also
8 charge on absorption.

9 Q. And these studies, were they directed to
10 finding kind of more general nasal delivery systems that
11 could be used with other actives as well?

12 MR. TOBIN: Objection to form.

13 A. Sorry, can you repeat that question?

14 Q. (BY MR. LANDMON) Sure. So were these studies
15 being conducted to develop nasal delivery systems that
16 could be used with other actives in addition to
17 gentamicin?

18 A. Actually, these studies were based around the
19 use of hyaluronic acid as an excipient, which is linked
20 into -- if you look at a lot of the other references,
21 there's quite a bit on there on hyaluronic acid, because
22 that work was sponsored by a company called Hyal
23 Pharmaceutical Corporation, who I worked for, and then
24 came back to the UK as PhD student. And the companies
25 that brought that out. So it was more about polymeric

1 effects on drug delivery.

2 And we didn't only just look at the nose. We
3 looked at the skin. I think we looked at also
4 parenteral. There were a number of studies done.

5 Q. Now that you've kind of looked at some of your
6 publications, do you recall any nasal delivery systems
7 you worked on that used penetration enhancers prior to
8 2009?

9 A. Well, sorry. I've obviously not made myself
10 clear.

11 Those references were about retaining and
12 enhancing drug delivery in the nose, yeah. So
13 penetration enhancers, you could call some part of the
14 studies about that. Other studies you could talk about
15 how we hydrated the nose. Other studies were how we
16 retained the drug at the site of action, because it's
17 difficult to say there was a particular focus on just
18 penetration enhancement.

19 When you're delivering drugs, you know, you
20 need to be looking at concentration, the ability to
21 stabilize the drug, the ability to deliver the drug with
22 a device that's affected by the thickness or viscosity
23 of the formulation, its ability to be retained there,
24 its ability to prevent mucociliary clearance.

25 There's lots of means of retaining drug and

1 achieving sustained release. A lot of this work was
2 about sustained delivery. So what that means is rather
3 than delivery straight away into the systemic
4 circulation, for example, or locally, it's about
5 retaining the drug there for longer and achieving
6 sustained release. An analogy would be for like a
7 transdermal patch, drugs are delivered in a transdermal
8 patch to have sustained release over a long period of
9 time. And if you like, we were looking at polymeric
10 systems, because hyaluronic acid was in a skin
11 formulation to -- and that worked by hydrating the skin.
12 Water is critical in drug delivery. Hydration of the
13 skin layer, opening it up and aiding permeation. So,
14 yeah, it's a complicated question and it very much
15 depends.

16 Q. And, you know, was it known at the time that
17 the permeation of the active ingredient was an important
18 consideration in developing nasal formulations?

19 MR. TOBIN: Objection, form.

20 A. Well, actually this work was done about local
21 delivery. So it's all about sticking, sticking it
22 there, not enhancing systemic.

23 Q. (BY MR. LANDMON) Okay. So this work was, but
24 more generally, was it known at the time that the
25 permeation of the active ingredient was an important

1 consideration for developing nasal formulations?

2 MR. TOBIN: Same objection.

3 A. So, again, I'm a bit confused at the question.
4 So when you look at permeation, what we have is local
5 delivery and systemic delivery. So with -- if you're
6 looking at permeation into the tissue, that's one thing.
7 If you're looking at systemic, which is across the --
8 across the tissue, there are any number of variables
9 that will affect their absorption. And the first thing
10 to evaluate is the physicochemical properties of the
11 drug and the ability to maintain those and keep it
12 stable in the product.

13 And then you look at the concentration that
14 you can formulate. At the time the kind of penetration
15 enhancement is -- in commercial development is something
16 that is very rarely claimed because it's an excipient
17 that has a critical role in the formulation. And
18 regulators get very concerned about additional essential
19 excipients and require more testing. So that is often a
20 challenge in those kind of development programs.

21 And, you know, if you have a drug who
22 inherently, if you've measured it, has not got good
23 permeation, the ways to increase it are a number of
24 fold -- a number of ways of doing it, which is
25 physically with regards to -- and some of my papers talk

1 about this -- the enhancing the thermodynamic activity,
2 which enhances the release, because sometimes you can
3 achieve increased delivery just by the way you formulate
4 it at the same strength just by the addition of solvents
5 and nonsolvents.

6 And I think, you know, for certain examples,
7 if you had to use a penetration enhancer for drugs that
8 didn't have those properties, that would mean that that
9 would have a role. So if I give you an example, which
10 is -- because your question was general. When we were
11 working on some transdermal patches and some local
12 delivery hyaluronic acid -- because that was an
13 excellent like humectant and hydrated the skin, which
14 actually increased the amount of water there, that
15 hyaluronic acid for those topical skin formulations was
16 considered to be a penetration enhancer. And in actual
17 fact, what that meant was the clinical trials to
18 validate the product, which -- and I am not breaking
19 confidentiality here -- ended up with Solaraze, were
20 much more complex and expensive, because we had to look
21 at like the formulation with and without the claimed
22 penetration enhancer. So that's an example of where
23 there was a penetration enhancer used in my research,
24 but not nasal, but skin.

25 Q. (BY MR. LANDMON) And for the various nasal

1 formulations that you worked on over your career, why
2 either were you studying or why were the companies
3 interested in developing nasal formulations?

4 A. So in general -- and I am trying to think
5 what's publicly known. Mosanna is looking at the
6 localized treatment of sleep apnea. So that's looking
7 at getting the drug into a tissue, to a muscle that --

8 Sorry, do you know what sleep apnea is while
9 I'm talking?

10 Q. Generally, but I would love more of an
11 explanation, sure.

12 MR. TOBIN: Dr. Brown, you should answer
13 his question, but go ahead.

14 THE WITNESS: Yeah.

15 A. So with sleep apnea, there is a local site.
16 So it's not in the bloodstream. It's local in the
17 nasopharynx and you have to look at delivering the drug
18 with a nasal device, and you have to target it to, if
19 you like, the back of the throat. And you need to stick
20 it there for a long time and you need to retain it and
21 get sustained delivery of that drug for like one dose
22 every day to -- just prior to bed such that the -- if
23 you like, the airway doesn't close, the nasal airway
24 doesn't close, which sleep apnea is when you stop
25 breathing basically. So that was where we went.

1 We did some work -- well, I did some work and
2 MedPharm was involved in a project, which was nasal
3 delivery, which was with a space agency. And that was
4 for pain relief. And that was an interesting project
5 because it was all about no gravity. But I can't recall
6 what was in -- and I couldn't say what was in that
7 formulation. And I have no idea whether that was --
8 that was a PhD student.

9 We've looked at achieving delivery across the
10 blood brain barrier, olfactory delivery where a
11 penetration enhancer in one sense wouldn't help, but in
12 retaining the drug there, it might.

13 And we've looked at treating infections of the
14 nose. When I say "we," that was MedPharm. But,
15 obviously, I was involved as CSO. And we've looked at
16 delivery to the nose, again, treating infection.

17 But, again, I don't think it's appropriate for
18 me to go in with what was in those compositions.

19 Q. (BY MR. LANDMON) And just so I'm clear,
20 because those compositions have not been published or
21 made public yet?

22 A. Well, I think some of them are in patents.
23 But, no. Only when the final product is approved is it
24 published what's in them. And, you know -- and I hate
25 to be so unspecific, but it very much depends upon the

1 formulation. And, you know, a penetration enhancer may
2 simply be a solvent, yeah. And so it's called a
3 solvent, yeah. It's not identified as a penetration
4 enhancer because the principle component of it is as a
5 solvent. And honestly, it's such a broad question and
6 it's so dependent upon -- even in nasal drip delivery,
7 the type of formulations that you develop, whether
8 they're solutions, whether they're suspensions, how they
9 work, how they're held there, with nasal delivery, the
10 device is also absolutely critical in its ability to
11 deliver the drug and the formulation to the site where
12 it acts. It gets -- it gets complex and very dependent
13 on various factors. I know that -- I mean, that's my
14 best attempt to answer your question.

15 Q. I can't remember, and I apologize if I asked
16 this before, but have any of the nasal formulations
17 you've worked on included benzodiazepines?

18 MR. TOBIN: Objection to relevance.

19 A. I have worked on localized delivery of
20 benzodiazepines internally at MedPharm, yes.

21 Q. (BY MR. LANDMON) And those were nasal
22 formulations?

23 A. They were many routes, nasal, buccal, oral
24 mucosa.

25 Q. And what was the purpose of the treatment

1 using the benzodiazepines?

2 A. It was panic attacks.

3 Q. And approximately what years were you doing
4 that research?

5 A. Sorry, I am just looking at my CV to see if
6 there's reference to it anywhere.

7 So if I'm recalling the PhD student correctly,
8 it was around late 2000s.

9 Q. Do you know what benzodiazepines you were
10 studying for nasal formulations?

11 A. There was a combination of them. I don't
12 recollect which one specifically -- which ones
13 specifically, sorry.

14 Q. That's okay. Do you recall whether diazepam
15 was one of them?

16 A. Actually, I've just found a paper 2011 which
17 mentions lorazepam. Obviously, that's to the airways,
18 and the nose is definitely part of that.

19 Q. What paper is that on your CV?

20 A. M -- on, no. Hold on, M82. But there was
21 some other work before, as I said, late 2000s. But I
22 can't remember what benzodiazepines that was.

23 Q. Was any of that work being done in conjunction
24 with Neurelis?

25 A. No.

1 Q. Other than your expert work in this case, have
2 you ever done any work with Neurelis?

3 A. Nope.

4 Q. Did you develop -- did you successfully
5 develop any nasal formulations that could be used with
6 benzodiazepine?

7 A. No. As I said, the work that we were doing
8 was very much internal PhD work, sort of what I would
9 call basic academic work. The intention at the time was
10 to evaluate drug delivery, so, no.

11 The Mosanna work, which is not, obviously,
12 benzodiazepine is very much intended for commercial,
13 which is my CSO role, but that was as of 2022 to 2025.

14 Q. Why don't we switch gears and start looking at
15 some of your declarations.

16 MR. TOBIN: Counsel, if you're going to
17 move to a different line, we've been going about an
18 hour.

19 MR. LANDMON: Yeah. Do you want to take
20 a break?

21 MR. TOBIN: Yeah, let's take a break.

22 MR. LANDMON: Let's go off the record.

23 (Break from 10:04 a.m. to 10:16 a.m.)

24 Q. (BY MR. LANDMON) Dr. Brown, as I mentioned,
25 we're going to switch gears a little bit and start

1 looking at your actual declarations. And let's look
2 first at your declaration for the '546 patent, which is
3 Exhibit 2072. Let me know when you have that in front
4 of you.

5 A. I have it in front of me.

6 Q. Okay. Great. And why don't we turn to page
7 58.

8 A. Page 58.

9 Q. And do you see on that page you have a section
10 entitled, Subject Matter of the '546 Patent? Do you see
11 that?

12 A. I do.

13 Q. And you understand that only claims 17 and 22
14 of the '546 patent are at issue in the IPR, right?

15 A. I believe that's correct, yeah.

16 Q. Okay. Can you give me your understanding of
17 what is set forth in claims 17 and 22?

18 MR. TOBIN: Objection to form.

19 A. Well, it's a pharmaceutical solution for nasal
20 administration comprising a benzodiazepine drug; one or
21 more natural synthetic tocopherols or tocotrienols, or
22 combinations thereof, in about 30 to 95 percent molecule
23 weight; ethanol and benzyl alcohol in a combined amount
24 from 10 percent to about 70 percent; and an alkyl
25 glycoside.

1 Q. (BY MR. LANDMON) And then claim 17.

2 A. Oh, yeah. So the solution of claim 1
3 consisting of diazepam, Vitamin E, ethanol, benzyl
4 alcohol and dodecyl maltoside.

5 Q. And then what's your understanding of claim
6 22?

7 A. That's on the other page, yeah?

8 Q. Uh-huh.

9 A. The solution of claim 16, wherein the alkyl
10 glycoside is dodecyl maltoside. And claim 16 is
11 pharmaceutical solution of claim 15, wherein the alkyl
12 glycoside is present in that pharmaceutical solution
13 between 0.01 and 1 percent, and then 15 goes to 0.01
14 percent of the alkyl glycoside.

15 Q. And is it your understanding that claims 17
16 and 22 recite pharmaceutical solutions for nasal
17 administration that contain only main ingredients that
18 are recited in the claims?

19 A. Sorry, can you repeat that question? I am
20 having to go across two pages, sorry.

21 Q. No. Is it your understanding that claims 17
22 and 22 recite pharmaceutical solutions for nasal
23 administration that contain only the ingredients that
24 are listed in the claims?

25 A. From my understanding, it's the ingredients

1 that are listed. And, you know, when -- as I've -- as I
2 believe, when you source excipients of pharmaceutical
3 solutions or formulations, there will be other materials
4 present, for example, in ethanol -- and have a part, if
5 you like, in impurity or whatever of ethanol is water;
6 for benzyl alcohol, as I know, you have things like
7 benzaldehyde and benzoic acid. So there are going to be
8 in the certificate of analysis reported levels of those
9 in those excipients.

10 Q. And what's an impurity?

11 A. It's something within that excipient. So in
12 drugs, impurities will also be present, and they are
13 controlled at various levels depending upon the risk of
14 safety. In excipients, it's the same thing. There is
15 likely to be those additional chemicals present which
16 will be controlled depending upon the supply and the
17 source and any potential toxicity risk.

18 Q. So other than the listed ingredients in claims
19 17 and 22 and their impurities, do you understand that
20 the claims do not cover a pharmaceutical solution having
21 other ingredients in it?

22 A. I think what I understand is that they don't
23 have other added ingredients.

24 Q. And the amount of impurities that are allowed
25 by the claims, do you have a view on what amount are

1 allowed?

2 A. I don't.

3 MR. TOBIN: Object. Dr. Brown, I would
4 just ask -- so belated objection, form. But I would ask
5 just if you could pause just one second so I can listen
6 to the question and see if I need to lodge an objection.

7 THE WITNESS: Okay.

8 MR. TOBIN: And our court reporter would
9 also appreciate that, I'm sure.

10 Sorry. Continue, Counsel, please.

11 Q. (BY MR. LANDMON) So let's turn to your
12 declaration now on the '414 patent, which is
13 Exhibit 2073. And I am going to direct you to page 64
14 of that declaration. Let me know when you're there.

15 A. I am there, yeah.

16 Q. Okay. And do you understand that all the
17 claims of the '414 patent are at issue in the IPR?

18 A. I believe that's true, yeah.

19 Q. So would you agree generally that the claims
20 of the '414 patent recite formulations that are similar,
21 but not identical, to what's claimed in the '546 patent?

22 MR. TOBIN: Objection to the form.

23 A. Well, because dodecyl-beta-D-maltoside is
24 mentioned and that forms a component of that -- of claim
25 1 in the '414, I don't really know what you mean by

1 "similar" or -- because, I mean, they are different in
2 terms of there's a specific ingredient mentioned there.

3 Q. (BY MR. LANDMON) Is it fair to say that
4 the difference between the claims of the '546
5 patent that are at issue here and the claims of the
6 '414 patent, that the '414 patent claims the
7 dodecyl-beta-D-maltoside, which you said much better
8 than I did, and the '546 patent claims dodecyl
9 maltoside? Is that fair to say?

10 MR. TOBIN: Objection, compound.

11 A. One claim's, yeah, dodecyl maltoside, and
12 then the previous one on the '414 is -- very
13 specifically claims a well-known excipient
14 n-dodecyl-beta-D-maltoside.

15 Q. (BY MR. LANDMON) And for ease today, is it
16 okay if I refer to the dodecyl maltoside as DDM?

17 A. Well, to be honest, I don't want to be
18 deliberate, but, no, because they're not -- they're not
19 the same. There's n-dodecyl-beta-D-maltoside, and then
20 there's dodecyl maltoside. I mean, as long as we
21 consider that they're very distinct, so n-DDM and
22 everything like that, I guess it's okay. I just might
23 ask for clarification.

24 Q. Yeah. And that's fair. And I was going to
25 say, I will refer to n-dodecyl-beta-D-maltoside as

1 n-DDM.

2 A. Oh, yeah. Okay. Sorry, I misunderstood.

3 Q. No, no. You're okay.

4 MR. TOBIN: Counsel, your audio cut out
5 again.

6 THE REPORTER: He's frozen.

7 MR. TOBIN: Let's go off record for a
8 moment.

9 (Discussion off the record.)

10 Q. (BY MR. LANDMON) So let's turn to your
11 '786 -- your declaration on the '786 patent which is
12 Exhibit 2074. Let me know when you have that in front
13 of you.

14 A. I have it in front of me.

15 Q. Okay. Let's turn to page 66. Let me know
16 when you're there and whether you see a section
17 entitled, Subject Matter of the '786 Patent.

18 A. I'm on page 66, yeah.

19 Q. And do you understand that all the claims of
20 the '786 patent are at issue in this IPR?

21 A. If that's what you're telling me, yes.

22 Q. Okay. And do you agree that the claims of the
23 '786 patent are similar but not identical to the
24 formulations claimed in the '546 and '414 patent?

25 MR. TOBIN: Objection to form, compound.

1 A. Well, I am just going to go back to -- so
2 with the '414, there is a bigger description of the
3 tocopherols and tocotrienols, but that does have
4 n-dodecyl-beta-D-maltoside in, along with the '414. So
5 also the '786 and the '546. And I am looking at the
6 more simplified description of the natural or synthetic
7 tocopherols, but it has got the difference, again, where
8 the alkyl glycoside is dodecyl maltoside. And that's
9 not written down as I think what we've agreed as n-DDM.
10 So to me they're different, but --

11 Q. (BY MR. LANDMON) Right. But just so I'm
12 clear, the claims of the '414 and '786 patents recite
13 formulations that include n-DDM, right?

14 A. They do, yes.

15 Q. Okay. And the claim of the '546 recites a
16 formulation that contains DDM, right?

17 A. Dodecyl maltoside, yeah.

18 Q. So do you have your -- I think you do. And
19 sorry for jumping around, but I think you're in your
20 declaration for the '414 patent, right?

21 A. Yeah, I've got that in front of me.

22 Q. Okay. Let's turn to page 74.

23 A. I am on 74.

24 Q. And do you see the section starting,
25 Comparison of Challenged Claims of the '414 Patent to

1 Earlier Applications? Do you see that?

2 A. I do.

3 Q. And you explain in paragraph 131 -- I am
4 sorry.

5 In all three of your declarations, you explain
6 that you understand there's a dispute about whether the
7 claims of the challenged patents are entitled to a
8 priority date in 2008 or 2009, right?

9 A. I do understand that, yes.

10 Q. Okay. And that dispute involves whether the
11 specification of the provisional application 61/040,558,
12 which I will just refer to as the '558 provisional
13 application, contains support for all the claim
14 limitations, right?

15 A. Sorry, claim limitations?

16 Q. Yeah. Sorry. So let me back up.

17 You understand there's a provisional
18 application whose number is 61/040,558, right?

19 A. I do, yes.

20 Q. Okay. And it's okay if I refer to that as the
21 '558 provisional?

22 A. Yes.

23 Q. Okay. And do you understand that the dispute
24 regarding the priority date here involves whether the
25 specification of the '558 patent supports all the

1 limitations in the claims of the issued patents?

2 A. Yeah, I think -- yes, I do. Yeah.

3 Q. And if you look at -- sorry, strike that.

4 You have the position that with respect to the
5 '414 and '786 patents, the claims are supported by the
6 '558 provisional application, right?

7 A. I do, yes.

8 Q. Okay. And because of that -- strike that.

9 You don't opine that the claims of the '546
10 patent are supported by the '558 provisional
11 application, right?

12 A. I don't -- sorry, can you repeat that
13 question?

14 Q. Yeah. You don't opine that the claims of the
15 '546 patent are supported by the '558 provisional
16 application, right?

17 Dr. Brown, I definitely don't want to
18 short-circuit if there's anything you want to look at,
19 but if you do look at --

20 A. Because you're asking me to flip between two
21 things, I'm just -- I'm checking what's in the
22 declaration.

23 Q. Yeah, no, there's a lot there. I could point
24 you to paragraph 52 of your '546 patent declaration.

25 A. Paragraph 52. That's page 28, yeah?

1 Q. Uh-huh.

2 A. Okay. So I'm reading 52, which discusses the
3 filing date that you just asked me about which I'm --
4 unless I've misunderstood your question, which is do I
5 have an opinion -- sorry, I must be being stupid.

6 Q. Not at all. There's a lot in these reports.

7 So if we read paragraph 52 that you were just
8 looking at, you were referencing Dr. Donovan's opinion
9 regarding the priority date.

10 A. Yeah.

11 Q. And you do not in that paragraph take a
12 position that the claims of the '546 patent are entitled
13 to the earlier priority date of the '558 application,
14 right?

15 A. Well, I mean, what I say, which is why I've
16 been confused, is that I've used a priority date of --
17 the later priority date of 2009, but if the claims are,
18 in fact, entitled to 2008, then -- I mean, that does
19 not, you are correct, mention those claims. It's just
20 talking about the prior art. So in there, I don't give
21 an opinion that you've just asked me, sorry.

22 Q. Right. And you don't recall making any
23 opinion anywhere that the claims of the '546 patent are
24 supported by the '558 provisional application, right?

25 A. I don't recall, but, you know -- that's a long

1 read through two documents.

2 Q. And we discussed earlier that the main
3 difference between the '546 patent and the '786 and '414
4 patents is that the '546 patent claims DDM, while the
5 '786 and '414 patents claim n-DDM.

6 A. Yeah.

7 MR. TOBIN: Objection.

8 Q. (BY MR. LANDMON) So is it fair to say that
9 your opinion is that the '558 provisional supports
10 formulations containing n-DDM but not formulations
11 containing DDM?

12 MR. TOBIN: Objection to form.

13 A. Again, I don't think it's fair to say
14 anything, because I've not given an opinion. And as far
15 as I recall, I didn't cover that in my declaration for
16 the '546.

17 Q. (BY MR. LANDMON) So why didn't you opine that
18 the claims of the '546 patent are supported by the '558
19 provisional?

20 MR. TOBIN: And, Dr. Brown, if you can
21 answer the question based on your knowledge, you may.
22 But I caution you not to reveal any attorney-client
23 communications.

24 A. Yeah, I'm not a lawyer, so I don't think I
25 could answer that.

1 Q. (BY MR. LANDMON) Well, so I'm asking your
2 view and your opinion. You submitted expert
3 declarations there. And in two of your declarations you
4 opine that they were supported by the '558 provisional
5 application, but in the declaration relating to the '546
6 patent, you didn't have that opinion. So I'm asking you
7 as an expert here who submitted expert declarations
8 here, why didn't you opine that the claims of the '546
9 patent are supported by the '558 provisional?

10 MR. TOBIN: Objection, relevance.

11 A. Again, I am -- I refer you back to the
12 previous answer which was I don't think -- other than
13 saying what I said before, which was I can't -- don't
14 feel I can discuss it and I haven't and I can't give you
15 an opinion at the moment, because I might be an expert
16 in nasal drip delivery and stuff like that, but, you
17 know, if you want -- I just don't know how I can answer
18 at the moment without talking through previous
19 discussions.

20 Q. (BY MR. LANDMON) Well, you reviewed the '558
21 provisional, right?

22 A. Yes, of course.

23 Q. And it's your opinion that the '558
24 provisional discloses n-DDM, right?

25 A. Yes.

1 Q. But you didn't see any disclosures in the '558
2 provisional on DDM, correct?

3 MR. TOBIN: Objection, relevance.

4 A. I don't -- I don't recall looking, so I didn't
5 give an opinion on it.

6 Q. (BY MR. LANDMON) Okay. You weren't asked to
7 look whether the '558 provisional supports the claims of
8 the '546 patent?

9 A. As I said, I don't recollect why.

10 Q. Okay. You don't recollect why you didn't have
11 an opinion on that?

12 A. No.

13 Q. All right. Let's --

14 A. I just don't recall.

15 Q. I'm sorry. I missed what you said.

16 A. I said I just don't recall.

17 Q. Okay. So with the risk of driving you crazy
18 going back and forth between documents, but there might
19 be a fair amount of that --

20 A. Yeah.

21 MR. TOBIN: Counsel, can I talk to you
22 about something off the record that may save me some
23 objections? I'll ask Dr. Brown to leave the room for
24 that.

25 MR. LANDMON: Sure.

1 MR. TOBIN: Thank you.

2 MR. LANDMON: So we want to go off the
3 record.

4 (Break from 10:42 a.m. to 10:45 a.m.)

5 Q. (BY MR. LANDMON) Dr. Brown, your counsel and
6 I were just having a conversation just making sure we
7 are all speaking the same language here. And to the
8 extent it wasn't clear before, I just wanted to make it
9 clear. When I refer to DDM, I'm referring to dodecyl
10 maltoside. Do you understand that?

11 A. Yes.

12 MR. TOBIN: And nothing further, but just
13 those two words. That was the clarification I had
14 asked.

15 MR. LANDMON: Okay. Yeah, I'm not sure
16 what else would be in there. But, yes, it's dodecyl
17 maltoside.

18 MR. TOBIN: Okay. Thank you.

19 Q. (BY MR. LANDMON) And we're using it in
20 shorthand for the deposition to make this go more
21 smoothly. And when I refer to n-DDM, I'm referring to
22 n-dodecyl-beta-D-maltoside. Does that make sense?

23 A. Yes.

24 MR. TOBIN: Counsel, thanks for that.
25 Please continue.

1 Q. (BY MR. LANDMON) So Dr. Brown, let's turn to
2 your '746 -- I'm sorry -- '786 declaration, which is
3 Exhibit 2074.

4 And I wanted to first turn you to page 79. Do
5 you see the heading there talking about claim 1(d)
6 and it says -- it's quoting the words and
7 n-dodecyl-beta-D-maltoside. Do you see that?

8 A. Yeah.

9 Q. And this is the discussion in your report
10 where you're focusing on the disclosures in both the
11 nonprovisional and then on the next page the provisional
12 application, right?

13 A. Yeah.

14 Q. Okay. So let's turn to the next page, page
15 80, paragraph 138. You say there that the '558
16 provisional also discloses this element which is
17 referring to the n-DDM, right?

18 A. n-dodecyl-beta-D-maltoside, yeah.

19 Q. And you state there that the '558 provisional
20 does disclose n-DDM, right?

21 A. I do, yeah.

22 Q. And you quote some excerpts from the '558
23 provisional?

24 A. That's true.

25 Q. And none of these excerpts expressly discuss

1 n-DDM, right?

2 MR. TOBIN: Objection to the form.

3 A. Well, they express the catalog in which n-DDM
4 is in.

5 Q. (BY MR. LANDMON) Right. But these excerpts
6 themselves, you don't see the word
7 n-dodecyl-beta-D-maltoside here, right?

8 A. As in I don't see it in the extracted parts.
9 Just reference to it via the Sigma Catalog, yeah?

10 Q. Right. Because the '558 provisional doesn't
11 actually list n-DDM in it, other than potentially with
12 respect to reference to the catalog, right?

13 A. As far as I recollect, the reference to n-DDM
14 is what I recall and was via the Sigma Catalog and --

15 Q. And theres's no -- I'm sorry.

16 A. And the pages within it. Sorry, it was an
17 end point.

18 Q. And just so we're clear, there's no reference
19 in the '558 provisional to DDM or n-DDM, right?

20 MR. TOBIN: Objection to the form.

21 A. Well, it depends what you're calling
22 "reference," because referencing to it is referencing
23 the catalog which lists n-DDM.

24 Q. (BY MR. LANDMON) Okay. That's a fair point.
25 I wasn't trying to -- I wasn't trying to put words in

1 your mouth. I'm really trying to get at the fact that
2 the '558 provisional does not recite n-DDM or DDM on its
3 face, right?

4 A. On its face?

5 Q. Yes.

6 A. Sorry, I don't understand what you mean, "on
7 its face." That's an American-English problem there.
8 You're going to have to use something else.

9 Q. Probably.

10 You didn't see the '558 patent expressly
11 stating DDM or n-DDM, correct?

12 A. Well, no. Again, I don't agree with your
13 question. It states it because it's referenced in the
14 catalog.

15 Q. So I understand your -- so your position is
16 it's listed in the catalog, right?

17 A. That is my position, yeah.

18 Q. Okay. And that -- and it's your opinion that
19 the '558 provisional --

20 A. Sorry. What I was going on to say, it's my
21 opinion -- I don't mean to interrupt -- and apologies,
22 but it's my opinion because it says and it's listed in
23 the Sigma Catalog, and that's what I'm reading and
24 that's what I'm looking at.

25 Q. And the Sigma Catalog is the only support for

1 n-DDM in the '558 provisional, right?

2 A. Well, the '558 does talk about enhancing
3 agents and provides a list, including surface active
4 agents, especially nonionic materials, which, of course,
5 is what n-DDM is and DDM in your definition. And then
6 it goes further with biological detergents as listed in
7 Sigma.

8 Q. And was a person of skill in the art prior to
9 2009 seeing a reference to surface active agents, would
10 they have envisioned n-DDM when they saw a reference to
11 surface active agents?

12 A. Well, whether they did or they didn't, they
13 would have then looked at the Sigma Catalog and seen it
14 listed.

15 Q. Yeah, no, so I understand that. I guess I'm
16 just trying to get at what your opinion here is. Is
17 your opinion that the -- so I already asked whether your
18 opinion was that the Sigma Catalog was the only support
19 for n-DDM in the '558 provisional. And you said, no,
20 it's not. There's references to surface active agent
21 and to biological detergents, right?

22 A. I think what I said was the surface active
23 agents are surfactants, and it says especially nonionic
24 materials. And DDM is a nonionic surfactant. And then
25 you've got biological detergents as listed.

1 Q. Right. And would a POSA have envisioned n-DDM
2 or DDM when viewing the word surface active agents
3 (especially nonionic materials)?

4 A. Well, all I can say is that n-DDM, in my
5 opinion, is -- could be considered in that group, but I
6 think the more definitive answer to your question would
7 be the specific reference to n-DDM, which is in the
8 Sigma Catalog.

9 Q. Is it your opinion that if the Sigma Catalog
10 wasn't referenced in the '558 provisional, it would not
11 support n-DDM?

12 A. Well, not really because it says the term
13 enhancer means any material which acts to increase
14 absorption across the mucosa and then says in some
15 embodiments. So you have that general description there
16 as well.

17 Q. And is that general description alone, without
18 the Sigma Catalog, sufficient to support n-DDM?

19 A. All I can say is that n-DDM is a surface
20 active agent and is -- would be in a list of a potential
21 enhancer. I don't really know how else to answer it.

22 Q. So I am trying to understand the basis for
23 your opinion, because you say that the '558 provisional
24 discloses n-DDM. And I am trying to understand what the
25 basis of it is. I started by asking is the basis only

1 the Sigma Catalog, and you said, no, it's these other
2 disclosures. So I guess now I'm asking if the Sigma
3 Catalog was not referenced in the '558 provisional,
4 would the '558 provisional -- is it your opinion that
5 the '558 provisional would also disclose n-DDM?

6 A. My answer to that question, it is disclosed
7 because it's in biological detergents listed in the
8 Sigma Catalog. So the fact is it is there. And all I
9 said was -- I'm not sure I said no. And apologies if I
10 did. What I said was you could consider n-DDM, and a
11 skilled artisan would know what surface active agents
12 and the properties they have. And then it mentions
13 nonionic. That's my only point I'm making. But my
14 decision and my explanation on the n-DDM as included is
15 specifically reference to the Sigma Catalog.

16 Q. Would a person of ordinary skill in the art at
17 the time, so prior to 2009, have known that n-DDM is an
18 enhancer and is a surface active agent?

19 A. Well, I think that we have to put the context
20 of the patent in, because I think you're asking me a
21 general question. Within the context of the patent as
22 it lists what the patent considers to be enhancers,
23 including that list there, and then reference to the
24 detergents, then -- because it's referenced there in
25 that patent, that's what it's saying, so yes.

1 Q. And when you refer to including that list, are
2 you referring to the Sigma Catalog?

3 A. I am just referring to the text that is on
4 page 80. And where it says additional ingredient
5 selected from the group consisting of enhancers, and
6 then reads out any material that acts to increase
7 absorption across the mucosa --

8 (Reporter clarification.)

9 A. Sorry. They method of claim 18, wherein the
10 composition comprises at least one additional ingredient
11 selected from the group consisting of enhancers.

12 In some embodiments, the drug delivery system
13 of the invention by advantageously comprise an
14 absorption enhancer, which it then goes through to
15 reference various what it's claiming as that will
16 increase absorption. So it states, means any material
17 which acts to increase absorption across the mucosa
18 and/or increase bioavailability and then gives some
19 embodiments, and specifically that references the Sigma
20 Catalog.

21 Q. (BY MR. LANDMON) Other than the excerpts you
22 have quoted here in paragraph 138, are you aware of any
23 other language in the '558 provisional that supports
24 n-DDM as an excipient in the claim formulations?

25 A. So are you talking about other than where it

1 states what it's considering to be enhancers in this
2 section? Are you then asking me if there's anywhere
3 else in that patent where it describes examples of which
4 could include n-DDM?

5 Q. Yeah, I guess I'm trying to get at what your
6 opinion here -- and trying to confirm that your
7 opinion -- your opinion is that the excerpts in
8 paragraph 138 -- and when I say "the excerpts," it
9 includes -- I know your opinion is the Sigma Catalog as
10 well that ends there. But are you aware of any other
11 language in the '558 provisional that supports n-DDM as
12 an excipient in the claim formulation?

13 A. I mean, I don't have the '558 in front of me,
14 so that's hard for me to say. But I know this does.

15 Q. Let's turn to -- back a page, paragraph 137.
16 In this paragraph you are discussing additional
17 disclosures that were added to the specification in 2009
18 when the nonprovisional applications were filed. Do you
19 see that?

20 A. Uh-huh.

21 MR. TOBIN: Objection, form.

22 Q. (BY MR. LANDMON) And the first excerpt you
23 cite to is related to the Sigma Catalog again, right?

24 A. Under paragraph 137, yeah, that refers to the
25 Sigma Catalog.

1 Q. And the next two excerpts, the next two
2 paragraphs underneath that, these were not in the
3 provisional application, right?

4 A. Again, I don't have it in front of me, but,
5 no, I don't believe so.

6 Q. Okay. And these later added excerpts, they
7 discuss alkyl glycosides, and they identify n-DDM
8 specifically, right? Let me back up. Sorry.

9 The added paragraphs, you agree that they
10 discuss alkyl glycosides, right?

11 A. I do.

12 Q. And then you see they identify
13 dodecyl-beta-D-maltoside. Do you see that?

14 A. Yeah.

15 Q. And the excerpts here from the specification,
16 the challenge patents, they don't disclose
17 n-dodecyl-beta-D-maltoside specifically, right?

18 A. Is the n covered in that middle paragraph, no,
19 it isn't.

20 Q. Do you know why?

21 A. I don't, sorry, no.

22 Q. And do you see in the last excerpt at the
23 bottom of paragraph 137, page 79, it's got a reference
24 to Intravail?

25 A. Yeah, I see that.

1 Q. Do you know what Intravail is?

2 A. I believe it's a branding of those particular
3 types of molecules, but that's all I could tell you.

4 Q. Do you know if it is -- if Intravail contains
5 n-DDM?

6 A. Without looking at the catalog, I can't say
7 I've looked at that previously. Now I'm more than happy
8 to if you want to dig out the exhibits.

9 Q. Well, maybe we can do that later. Do you
10 know, did you look at the Intravail catalog in putting
11 your opinion together?

12 A. I don't recollect looking at that, no.

13 Q. Do you know why you included that last
14 paragraph in paragraph 137 in your declaration?

15 A. Well, because I believe Intravail supply alkyl
16 glycosides.

17 Q. Would a POSA have known what Intravail was in
18 2008 and 2009?

19 A. A POSA would have the capability of finding
20 that on looking, yes.

21 Q. So still sticking with your declaration for
22 the '786 patent, let's turn back to page 38.

23 A. Sorry, I'm just checking. We're on '786,
24 page --

25 Q. Page 38.

1 A. Okay. Yeah, I just went back and then flipped
2 too many pages. Sorry.

3 Q. No worries. There's a lot of paper here.

4 Do you see the heading entitled, Legal
5 Standard for Written Description? Do you see that?

6 A. I do.

7 Q. And this section sets forth the legal standard
8 you applied for written description, right?

9 A. Yes.

10 Q. And the first sentence of that paragraph 59
11 states, I have been informed that in determining whether
12 a patent claim has written description, one must look at
13 the disclosure of that patent as originally filed
14 (including claims, specification, and drawings) and
15 ascertain whether it supports each limitations of that
16 claim. Do you see that?

17 A. I do.

18 Q. So is it your understanding that for a patent
19 claim to have written description, the specification of
20 the patent must disclose the elements of the claim?

21 A. Sorry, that's a very long sentence and I'm not
22 a patent lawyer. So do you think you can dumb that down
23 a bit for --

24 Q. I will do my best. I am trying to kind of
25 summarize what you have set out in that sentence, which

1 was kind of a longer sentence. But do you understand
2 that for a patent claim to have a written description,
3 the specification must disclose the elements of the
4 claim?

5 MR. TOBIN: Objection to form.

6 A. Yeah, expressly or inherently I think the
7 terms are, if I remember rightly. I might have got that
8 wrong. Yeah, that's the disclosure must expressly
9 disclose or inherently. So, yeah, I remembered that
10 correctly.

11 Q. (BY MR. LANDMON) Okay. And did you apply
12 this standard to your analysis of whether the '558
13 provisional provides support for n-DDM?

14 A. Yeah, I did. Yeah.

15 Q. And you agree that n-DDM is an element of the
16 claims of the '786 and '414 patents, right?

17 A. n-DDM is -- yeah, is definitely stated in
18 those claims, yeah.

19 Q. And you agree that to claim priority to the
20 '558 provisional application, the specification must
21 provide written description support for n-DDM, right?

22 MR. TOBIN: Objection to the form.

23 A. I agree that it must supply it, yeah,
24 inherently or expressly, yeah.

25 Q. (BY MR. LANDMON) In forming your opinions

1 here, were you informed that there's a difference
2 between essential and nonessential material in the
3 context of written description and priority date issues?

4 A. I don't -- I don't recollect.

5 Q. Do you have any opinions as to whether n-DDM
6 is essential or nonessential to the claims of the '786
7 and '414 patents?

8 A. My understanding is because it's clearly
9 stated. It's a fundamental part of that claim because
10 it's listed. I mean, I don't know whether that answers
11 your question. That's using my words.

12 Q. It does. And you weren't asked to consider
13 whether n-DDM is a fundamental part of the claim when
14 you formulated your written description analysis of the
15 '558 provisional, right?

16 MR. TOBIN: Objection to form.

17 A. Sorry. Repeat that again. So we're talking
18 about the provisional '558. And what was the rest of
19 it, sorry?

20 Q. (BY MR. LANDMON) Yeah. So you weren't asked
21 to consider whether n-DDM was essential or nonessential
22 to the invention of the claims of the '786 and '414
23 patents when you evaluated whether the '558 provisional
24 provides support for that, right?

25 A. I was evaluating the '414 I think of the two

1 going back, and I've given an opinion about how I feel
2 that n-DDM is stated in there because it's in the Sigma
3 Catalog. But as I said, I don't recollect conversations
4 about expressly or -- I just don't recall.

5 Q. Right. So you don't recall any direction to
6 consider whether the n-DDM was essential or nonessential
7 material to the patent in formulating your opinions
8 here, right?

9 A. Which patent? Sorry?

10 Q. For any of the patents, but specifically I'm
11 talking about your opinion that the '558 provisional
12 supports the claims of the '786 and '414 patents. As
13 part of that analysis, you were not asked to consider
14 whether n-DDM was essential or nonessential material to
15 the invention, right?

16 A. Again, I don't really understand this
17 essential, nonessential. What I can say is that n-DDM
18 was in the independent claim, and it was there, and it
19 was referenced back to the provisional which had the --
20 where I believe it was referenced because of the Sigma
21 Catalog.

22 Q. So changing topics a little, you probably
23 recall -- and we don't need to go into detail, but you
24 have a list of exhibits considered in each of your
25 declarations, right?

1 A. I do, yes.

2 Q. Do you recall -- and we can turn to one if you
3 want to, but do you recall referring to what's
4 Exhibit 1040, the final written decision in IPR 2019-451
5 relating to the '876 patent? And I can -- yeah, I'll
6 make this easier. And, sorry, I probably should have
7 just done this. If you go to page 14 of your '786
8 patent declaration, let me know when you're there.

9 A. I'm at page 14, yeah.

10 Q. Okay. And do you see this starts with a List
11 of Exhibits?

12 A. I do, yeah.

13 Q. Okay. And you considered all these in forming
14 your opinions?

15 A. Yes.

16 Q. Okay. And then if you turn a few pages
17 over to page 19, do you see an entry or a listing
18 of Exhibit 1040, the final written decision in
19 IPR 2019-00451 filed against U.S. Patent No. 9,763,876,
20 August 6, 2022?

21 MR. TOBIN: Objection, form.

22 A. I see August 6, 2020.

23 Q. (BY MR. LANDMON) 2020. Thank you.

24 A. Yeah, I can see that.

25 Q. Okay. So you considered that final written

1 decision in forming your opinions here?

2 A. Yeah.

3 Q. And you considered that with respect to all
4 three patents?

5 A. I think it's in all three of my declarations,
6 yeah.

7 Q. Okay. So do you have Exhibit 1040 with you in
8 paper?

9 A. No.

10 Q. Okay. If not, I can ask the technician Lance
11 to publish it, and you can pull it up on your screen.

12 ZOOM TECH: It's in the marked folder
13 now. You might have to refresh to see it.

14 (Exhibit 1040 marked.)

15 A. Exhibit 1040, yeah.

16 Q. (BY MR. LANDMON) Yeah. Do you have that?

17 A. Yeah.

18 Q. Okay. Great.

19 Do you understand that the '876 patent was
20 found unpatentable in that IPR proceeding?

21 A. I believe it was -- was it abandoned? Is that
22 what you say? I don't --

23 Q. Unpatentable?

24 A. I don't know whether it was unpatentable or
25 not, sorry. Let's go with my family tree.

1 Q. I can turn you to page 68 or if you could turn
2 to page 68 of this exhibit.

3 A. Yeah, just give me a second. I am just
4 looking at it.

5 Q. Okay.

6 A. Sorry. You said what page?

7 Q. Page 68.

8 A. Okay.

9 Q. Do you see at the bottom it states, Petitioner
10 establishes by a preponderance of the evidence that
11 claims 1 - 36 of the '876 patent are unpatentable?

12 A. I can read that, yeah.

13 Q. Okay. Did you consider that unpatentability
14 decision in forming your opinions in this case?

15 A. I considered '876 and the difference between
16 the other patents --

17 Q. And --

18 A. -- and the claims.

19 Q. I'm sorry.

20 A. That's all right.

21 Q. And the claims.

22 Did you consider the IPR's unpatentability
23 decision in forming your opinions here?

24 MR. TOBIN: Objection to form.

25 A. I recall reading the document.

1 Q. (BY MR. LANDMON) Okay. Why don't we turn to
2 the '876 patent.

3 MR. LANDMON: Lance, I am going to ask
4 you to publish '876 patent. It's marked as 1071
5 unless --

6 Q. (BY MR. LANDMON) You don't have that one,
7 right, Dr. Brown? I know you said you had patents, but
8 I think it was the patents at issue.

9 A. Uh-huh.

10 MR. LANDMON: So, Lance, you can go ahead
11 and publish that.

12 ZOOM TECH: Sorry, what tab is that?

13 MR. LANDMON: Hold on one second. 12.

14 ZOOM TECH: Okay. One second.

15 MR. TOBIN: Counsel, while he's doing
16 that, can you give me one moment -- I think my window
17 closed -- just so I can download it? Just hold on
18 before asking your next question, please.

19 MR. LANDMON: Uh-huh. Sure. Yeah. Just
20 let me know when you're ready.

21 MR. TOBIN: Thank you very much.

22 ZOOM TECH: That was 1071?

23 MR. LANDMON: Yes.

24 (Exhibit 1071 marked.)

25 MR. TOBIN: Could we go off record just

1 for a moment? I'm having some technical issues.

2 MR. LANDMON: Sure.

3 (Break from 11:16 a.m. to 11:17 a.m.)

4 Q. (BY MR. LANDMON) Dr. Brown, do you have
5 Exhibit 1071 in front of you?

6 A. No. Sorry, I was waiting. I have got to
7 refresh again, haven't I?

8 Q. I think so.

9 A. Whoa. Yeah, I've got it.

10 Q. And you see that's U.S. Patent No. 9,763,876,
11 right?

12 A. Yeah.

13 Q. Okay. And you considered this as part of your
14 opinion as well, right?

15 A. Yeah.

16 Q. And you understand this is the patent that the
17 PTAB found unpatentable in the previous IPR, right?

18 A. Yeah, I read that on the previous thing, yeah.
19 I think it's revoked in my family tree.

20 Q. Okay. So let's turn to what's page 41 of this
21 document. It's column 63 where the claim starts. It's
22 the second-to-last page.

23 A. Page 41. Sorry. Okay. Yeah, I'm on the
24 claims.

25 Q. Can you read claim 1 to yourself.

1 A. Yeah, I've read claim 1.

2 Q. Is it fair to say that the '867 patent claims
3 a method of treating a patient by administering a
4 formulation that is similar to the formulations claimed
5 in the '546, '414, and '786 patents?

6 MR. TOBIN: Objection, form.

7 A. Well, this just basically says an alkyl
8 glycoside, which is not the same as the other three
9 patents -- the other two patents -- three patents.

10 Q. (BY MR. LANDMON) So the reference to alkyl
11 glucosides, that's the last listing in the formulation
12 of claim 1, right?

13 A. Yeah.

14 Q. And is DDM an alkyl glycoside?

15 A. Is DDM, yes.

16 Q. Is n-DDM an alkyl glycoside?

17 A. n-DDM is a very -- is a specific alkyl
18 glycoside, yeah.

19 Q. And if you look at claim 27, do you see that
20 claim 27 is directed to the method of claim 1, wherein
21 the solution consists of diazepam, vitamin E, ethanol,
22 benzyl alcohol and -- and DDM?

23 A. I do.

24 Q. So is it fair to say that claim 27 claims or
25 is directed to and recites the same formulation that's

1 set forth in the '546 patent?

2 MR. TOBIN: Objection to form.

3 A. So in the '546 patent, claim 17 references --
4 is dependent on claim 1, which says consisting of
5 diazepam, vitamin E, ethanol, benzyl alcohol and dodecyl
6 maltoside and the method of claim 1. So that's
7 different. Method -- because we don't have method
8 patents, per se, in the -- in Europe. But anyway, other
9 than that, they list the same ingredients.

10 Q. (BY MR. LANDMON) So just so we're clear, I
11 think you've said this, but the formulations recited in
12 claim 27 of the '876 patent is essentially the same as
13 the formulation in claim 17 of the '546 patent, right?

14 MR. TOBIN: Objection, form.

15 A. It says the solution of claim 1, and then it
16 references to one which is a pharmaceutical solution
17 which links back where alkyl glycoside is then defined
18 further to dodecyl. One is a method of treating and one
19 is a pharmaceutical solution. So in that way, they're
20 different, whatever that means.

21 Q. (BY MR. LANDMON) Right. So putting aside the
22 method aspect, but just focusing on the formulation
23 aspects, you agree that there are no differences between
24 the formulation recited in claim 27 of the '876 patent
25 and claim 17 of the '546 patent, right?

1 MR. TOBIN: Same objections.

2 A. I mean, I think it's the same answer, they are
3 listing the same ingredients, but what is definitely
4 different is a pharmaceutical solution. So the '546 is
5 a composition of a formulation. And this appears to be
6 a use. I don't know what that means legally, but that's
7 the difference I can see.

8 Q. (BY MR. LANDMON) And can you look now at
9 claim 26 of the '876 patent?

10 A. Yeah.

11 Q. And would you agree that there are no
12 differences between the formulation recited in claim 26
13 of the '876 patent and claim 22 of the '546 patent?

14 MR. TOBIN: Same objection.

15 A. So 22 in the '546 says, the solution of claim
16 16. So that references claim 15, and that references
17 claim 1, which is a pharmaceutical solution, and it
18 defines the alkyl glycoside as dodecyl maltoside, so
19 that's '546. And then you said 27, didn't you?

20 Q. (BY MR. LANDMON) Claim 26 of the '876 patent.

21 A. Yeah, that's got a specific limitation, but
22 it's got a range of concentration, which isn't in 22 on
23 the '546.

24 Q. Claim 22 of the '546 is a dependent claim,
25 though, right?

1 A. Yeah, to 16. Oh, yeah. Sorry. Yeah, then
2 that's there. And then it goes back to 15. Okay.
3 Yeah. So that range is the same as well, yeah.

4 Q. Okay. So just so the record is clear, you
5 agree that there are no differences between the
6 formulation recited in claim 26 of the '876 patent and
7 claim 22 of the '546 patent, right?

8 A. Well, I mean, I presume there's a reason why
9 one says "a method of treating" and the other one says
10 "a pharmaceutical solution," but the description of the
11 ingredients appear to be the same, from what I can see.

12 Q. We'll probably have plenty of time later today
13 to talk more about the prior art and obviousness in more
14 detail, but generally speaking, do you understand that
15 the '876 patent was found unpatentable in view of the
16 same prior art references that Padagis has asserted
17 render the '546 patent unpatentable in this IPR
18 proceeding?

19 MR. TOBIN: Objection, foundation.

20 A. I don't -- honestly, I would need to go back
21 and read everything to remind myself. But if you're
22 telling me that's the case, then I'm sure it must be.

23 Q. (BY MR. LANDMON) And you didn't consider that
24 in issuing your opinion here?

25 A. I don't recollect either way, to be honest. I

1 just can't recall.

2 Q. I guess I'm trying to ask is it your opinion
3 that the PTAB was wrong when it found the '876 patent
4 unpatentable?

5 MR. TOBIN: Objection, foundation.

6 A. The PTAB? Sorry?

7 Q. (BY MR. LANDMON) Yes.

8 A. PTAB, is that the -- what's the patent --
9 what's that stand for, sorry?

10 Q. So it's the Patent Trial and Appeal Board.
11 Yeah, the Patent Trial and Appeal Board that will decide
12 this IPR that decided the IPR proceeding on the '876
13 patent.

14 A. Yeah.

15 Q. And we already discussed that in the '876
16 patent IPR, the PTAB found those claims unpatentable.
17 And I am trying to understand, is it your opinion that
18 the PTAB was wrong when it did that?

19 MR. TOBIN: Objection, foundation.

20 A. I don't have an opinion on that. I don't
21 remember giving an opinion on that either.

22 Q. (BY MR. LANDMON) Well, how can you come to a
23 contrary opinion in your declarations, having considered
24 the PTAB decision on the '876 patent, without
25 determining whether that decision was correct or

1 incorrect?

2 A. Because --

3 MR. TOBIN: Objection, foundation.

4 A. -- I am considering myself as a skilled
5 artisan, and I have put in a section about why the '876
6 patent claims are different to the '414. And that's
7 what I've been asked to look at, the '414 and the other
8 two.

9 Q. (BY MR. LANDMON) Well, I am talking now about
10 the '546 patent, though.

11 A. Well, same -- same answer.

12 Q. But the only difference that you identified
13 between the two sets of claims was that the '876 patent
14 is directed to a method, and the '546 patents are just
15 directed to a composition, right?

16 A. Yeah, but, you know, I don't recall their
17 reasoning behind their decisions. I just don't
18 remember. But I've just given an opinion on what I've
19 given an opinion on. That's all I can say.

20 Q. Did you ignore that decision by the PTAB?

21 A. No, but I've given my opinion as a skilled
22 artisan. I am not -- you know, I have given opinions
23 around what I think and how they fit together, but if
24 that's different, then it's different. It's just my
25 opinion.

1 Q. And you understand that there are skilled
2 artisans who submitted opinions in the '876 patent IPR,
3 right?

4 MR. TOBIN: Objection, foundation,
5 relevance.

6 A. If you're telling me that there were, then I'm
7 sure there were. But I'm just -- as I said, this is my
8 opinion, not theirs.

9 Q. (BY MR. LANDMON) Did you consider the
10 opinions offered by the skilled artisans in the '876
11 patent IPR proceeding?

12 A. I don't recollect their opinions, whatever
13 they were. I definitely reviewed the opinions on
14 Dr. Donovan relating to these three documents.

15 Q. Do you -- are you aware that the -- well, are
16 you aware the PTAB proceedings after there is a decision
17 can be appealed up to the Federal Circuit Court of
18 Appeals in the US?

19 MR. TOBIN: Objection, legal conclusion.

20 A. I don't know the legal ramifications, but all
21 I can tell you is that when I've been involved with the
22 US PTO, there has been a frequent number of appeals
23 after there are rejections of patents.

24 Q. (BY MR. LANDMON) And are you aware that in
25 IPR proceedings, that PTAB decisions can be appealed to

1 the Federal Circuit Court of Appeals?

2 MR. TOBIN: Same objections.

3 A. Yeah, I know there's a process. I don't know
4 exactly what it is.

5 Q. (BY MR. LANDMON) Are you aware that the
6 Federal Circuit affirmed the PTAB's decision that the
7 claims of the '876 patent were unpatentable?

8 MR. TOBIN: Objection, foundation.

9 A. I don't remember that.

10 Q. (BY MR. LANDMON) Okay. And did you take --
11 well, so I assume then you don't recall whether you
12 considered the Federal Circuit's decision when you
13 formed your opinions here, right?

14 A. I honestly don't know.

15 Q. So you mentioned before that you have opinions
16 that the claims of the '414 and '786 patents are
17 patentably distinct from the '876 patent claims, right?

18 A. Yes.

19 Q. You don't have a similar section with respect
20 or similar opinions with respect to the '546 patent,
21 right?

22 A. No, I don't.

23 Q. Can you give me a summary -- and if you want,
24 I can direct you where to look, but for why the claims
25 of the '786 and '414 patent are patentably distinct from

1 the '876 patent claims?

2 (Reporter clarification.)

3 Q. (BY MR. LANDMON) Dr. Brown, can you provide a
4 summary of your opinions as to why the claims of the
5 '786 patent and '414 patent are patentably distinct from
6 the '876 patent claims?

7 MR. TOBIN: Objection, compound.

8 Q. (BY MR. LANDMON) And if you would like, I can
9 direct you where in your reports to look.

10 A. If it's going to save time, you can do, yeah.
11 I am just going --

12 Q. Yeah, I like saving time. On the '414 patent,
13 in your declaration on the '414 patent, if you look
14 starting on page 109.

15 A. I've gone to the wrong document, so you
16 definitely saved time. Sorry. I misunderstood. I
17 thought you said the '786. So you mean '876?

18 Q. Yes. And I apologize if I gave the wrong
19 number.

20 A. I'm sure it wasn't you.

21 MR. TOBIN: Counsel, maybe you want to
22 restart that one.

23 MR. LANDMON: Yeah.

24 Q. (BY MR. LANDMON) So, Dr. Brown, just so we're
25 all on the same page, could you give me a brief summary

1 of your opinions as to why the claims of the '414 patent
2 and '786 patent are patentably distinct from the claims
3 of the '876 patent?

4 MR. TOBIN: Objection, compound.

5 A. Yeah, I mean, basically the two patents that
6 we have been talking about have a very distinct
7 description of n-dodecyl-beta-D-maltoside, whereas, the
8 '876 is really just reciting broader group alkyl
9 glucosides.

10 Q. (BY MR. LANDMON) Well, and you agree, too,
11 the '876 discloses DDM, right?

12 A. Yes.

13 Q. So is it your opinion that the key difference
14 that renders the '414 and '786 patents patentably
15 distinct from the claims of the '876 patent is that the
16 '414 and '786 patent claims are directed to n-DDM?

17 A. Yes.

18 Q. Have you identified any other key differences
19 between the claims of the '786 and '414 patent over the
20 claims of the '876 patent?

21 MR. TOBIN: Objection, compound.

22 A. I think that's the fundamental difference. I
23 think, if I recollect correctly, there was -- I would
24 need to go back and check on the '876. So I think if
25 I'm considering this correctly in answering your

1 question, the only difference was diazepam was named in
2 the '414 and '786, and in the '876, I think it was
3 benzodiazepine drug in that claim 1.

4 Q. (BY MR. LANDMON) If you're looking at claim
5 27 of the '876 patent, do you see that claim 27 --

6 A. Sorry, I didn't realize -- you asked me for
7 the general differences, and that's one.

8 MR. TOBIN: And, Doctor, I would ask you
9 to please don't interrupt him.

10 THE WITNESS: Oh.

11 MR. TOBIN: Let him finish his question.

12 A. Sorry, sir.

13 Q. (BY MR. LANDMON) No worries. It's hard to
14 do, especially over Zoom.

15 But you see that claim 27 of the '876 patent
16 specifically discloses diazepam, right?

17 A. I do.

18 Q. Or specifically claims it. So the only
19 difference you have identified between the claims of the
20 '414 and '786 patents, as opposed to the claims of the
21 '876 patent, is that the '414 and '786 patents claim
22 n-DDM, right?

23 A. That would appear so, yeah.

24 MR. LANDMON: Why don't we take a break.
25 We've been going for a while. We can go off the record.

1 (Break from 11:38 a.m. to 11:47 a.m.)

2 Q. (BY MR. LANDMON) Dr. Brown, we're going to
3 switch gears a little bit.

4 MR. LANDMON: And, Lance, if I can ask
5 you to publish, it's tab -- sorry, tab 10. It's
6 Exhibit 1072.

7 ZOOM TECH: Tab 10 on here says
8 Exhibit 2012. At the bottom it says 2012. Is that the
9 correct one?

10 MR. LANDMON: It should be the expert
11 declaration. No, no, that's -- oh, yes, that's the very
12 one.

13 ZOOM TECH: Okay.

14 MR. LANDMON: I think that's what Chris
15 is telling me.

16 MR. TOBIN: So which exhibit should I be
17 looking for?

18 MR. LANDMON: Yeah. So it's actually an
19 exhibit we haven't used yet in this IPR. So it says
20 Exhibit 2012 at the bottom. We would like to have it
21 marked in this deposition as Exhibit 1072.

22 Q. (BY MR. LANDMON) So, Dr. Brown, I am showing
23 you up on the screen what's now been marked as
24 Exhibit 1072 for this proceeding. It's entitled the
25 Expert Declaration of Professor -- and I won't pronounce

1 his name -- Gizurarson is his last name -- in Support of
2 Patent Owner's Response --

3 A. Sorry. Sorry. Sir, it's not on the screen as
4 of yet.

5 Q. I apologize. Hold on.

6 MR. TOBIN: Can I help him with that?
7 Hit F5 or refresh.

8 ZOOM TECH: It says 2012 right now. I
9 will change it later just so we can keep it moving.

10 THE WITNESS: Okay. Sorry, I was looking
11 for 1072.

12 Q. (BY MR. LANDMON) Okay. Do you have that up
13 on your screen?

14 A. Yeah.

15 Q. Okay. And do you see, Dr. Brown, this is a
16 Declaration of Professor Gizurarson in Support of Patent
17 Owner's Response to Petition for Inter Partes Review of
18 U.S. Patent No. 9,763,876? Do you see that?

19 A. I do.

20 Q. Okay. And I think you -- well, let me just
21 ask. You're not familiar with this document, right?

22 A. No.

23 Q. And you didn't review this document in forming
24 any of your opinions in your declarations?

25 A. Not that I recall, no.

1 Q. Okay. So just for your -- just so you
2 understand, this is a declaration that Professor
3 Gizurarson submitted in support of Neurelis in the '876
4 patent IPR. Have you ever spoken to Professor
5 Gizurarson?

6 A. No.

7 Q. Do you know who that is?

8 A. Sorry, not a clue.

9 Q. Okay. So if we could turn to --

10 MR. TOBIN: Counsel, is this mismarked
11 somehow? Without going into details, do you know how
12 exhibit numbers need to be done at the PTAB?

13 MR. LANDMON: So this has not been a
14 previous exhibit. And actually Lance just published it
15 with a new exhibit number, so now it says Exhibit 1072
16 if you guys refresh.

17 MR. TOBIN: Yes. So should we close out
18 of this one so we can just have a consistent record of
19 what we're talking about?

20 MR. LANDMON: Uh-huh.

21 (Exhibit 1072 marked.)

22 A. So we're now at 1072?

23 Q. (BY MR. LANDMON) Yes.

24 A. Okay.

25 Q. So this was an exhibit in the '876 patent IPR,

1 which is why it has a different exhibit number, but it
2 is now Exhibit 1072.

3 So if I can ask you to turn to -- it's page 40
4 at the bottom. I believe it's page 43 of this document,
5 just given the table of contents.

6 (Reporter clarification.)

7 MR. TOBIN: Sorry. Counsel, are you on
8 PDF page or print page? Where are you?

9 MR. LANDMON: So print page at the bottom
10 is 40. And it's page 43 of the PDF.

11 MR. TOBIN: Thank you.

12 THE WITNESS: Thank you.

13 Q. (BY MR. LANDMON) There's a section Roman
14 numeral VIII. It says, All Challenged Claims Of The
15 '876 Patent Are Valid.

16 A. I am there.

17 Q. Okay. And do you see there's that subsection
18 A entitled, The Provisional Application Incorporates By
19 Reference Alkyl Glycosides As Claimed? Do you see that?

20 A. (Witness nods head.)

21 Yes. Sorry. Nodding.

22 Q. And, Dr. Brown, similar to what you have
23 opined on the '414 and '786 patents, Professor
24 Gizurarson addressed whether the '558 provisional has
25 support for the claimed alkyl maltosides and DDM

1 specifically.

2 Do you see that in the section starting on
3 page 40?

4 MR. TOBIN: Objection, lacks foundation,
5 relevance.

6 A. I am reading Serial No. 61/040,558 ('558
7 Provisional) which the '876 patent claims priority to
8 see -- includes an incorporation by reference to a
9 1988 Sigma Catalog. The "incorporation by reference"
10 reads --

11 So I have read I think, yeah.

12 Q. (BY MR. LANDMON) Okay. Do you see that
13 Professor Gizurarson also opined, similar to you, that
14 the '558 provisional application's incorporation by
15 reference of the Sigma Catalog provide support for DDM?
16 Do you see that?

17 MR. TOBIN: Objection, lacks foundation,
18 relevance.

19 A. Which paragraph specifically are you asking me
20 to look at?

21 Q. (BY MR. LANDMON) So it's pretty much this
22 section, but it starts with as you explained on
23 paragraph 68 where he starts by referencing the Sigma
24 Catalog and the incorporation by reference of the Sigma
25 Catalog.

1 MR. TOBIN: Objection, lacks foundation.

2 A. Yeah, I've read down to B.

3 Q. (BY MR. LANDMON) So you see that, similar to
4 your position that the '558 provisional supports n-DDM,
5 Dr. Gizurarson's support an opinion that the Sigma
6 Catalog incorporation supported DDM in the '558
7 provisional. Did you see that?

8 MR. TOBIN: Objection, lacks foundation,
9 relevance.

10 A. I can see he talks about alkyl glycosides,
11 nonionic detergents, surface active agents,
12 n-dodecyl-beta-D-maltosides there. Yeah, so I can see
13 him talking about alkyl glycosides. Is that your
14 question?

15 Q. (BY MR. LANDMON) Hold on one second, sorry.

16 And you understand that there was a final
17 written decision issued on the '876 patent, right?

18 A. Yeah, you explained that before. Yeah. And I
19 do, yeah.

20 Q. Yeah. And you considered that as part of your
21 opinion, right?

22 A. Yeah.

23 MR. TOBIN: Objection, lacks foundation.

24 And, Dr. Brown -- one second, Counsel. I
25 would ask you to pause just one second so if I need to

1 object, I'll have time to do that.

2 THE WITNESS: Sorry.

3 MR. TOBIN: So we're not all three
4 talking over each other.

5 Continue, Counsel, please.

6 MR. LANDMON: Sorry.

7 Q. (BY MR. LANDMON) You didn't discuss -- sorry,
8 strike that.

9 Did you consider the final written decision on
10 the '876 patent with respect to the priority date
11 opinions that you issued here?

12 A. Sorry, can you say that again?

13 Q. Yeah. And I should probably back up.

14 Remember earlier today we were talking about
15 the opinions you issued with respect to whether the '558
16 provisional supported an earlier priority date for the
17 '414 and '786 patents? Do you remember that?

18 A. I do.

19 Q. Okay. And did you consider the final written
20 decision issued by the PTAB on the '876 patent when you
21 formulated those opinions?

22 A. I think, as I've said before, I really can't
23 remember how much detail we went into that. I mean,
24 this certainly isn't an exhibit I've seen before or
25 read.

1 Q. Okay. Let's turn back to your '786 Patent
2 Declaration, which is Exhibit 2074. And if I can direct
3 you to page 40, we're going to switch gears a little bit
4 here.

5 A. To page 40.

6 Q. Let me know when you're there.

7 A. I am there.

8 Q. Okay. And do you see a section entitled,
9 Technology Background and State of the Art?

10 A. I do, yeah.

11 Q. And you have this same section in your '546
12 and '414 patent declarations, right?

13 A. I do, yeah.

14 Q. The first section here is titled, Chemical
15 Compounds and Their Structures, right?

16 A. Yes, it is.

17 Q. All right. And in this section you're giving
18 an overview of some basic chemistry principles with
19 respect to organic compounds. Is that fair?

20 A. Yeah. Organic chemical compounds, yes.

21 Q. And if we go over to page 42, starting in
22 paragraph 68, you discuss, Alkanes, Alkyl Groups, and
23 Isomers, right?

24 A. Yeah, I continue on to discuss those, yeah.

25 Q. Okay. In paragraph 68 you explain that

1 alkanes are a type of hydrocarbon compound that are made
2 entirely of carbon and hydrogen atoms, and in which all
3 the carbon-carbon bonds are single bonds, right?

4 A. I do.

5 Q. And then continuing in that paragraph, but on
6 page 43, on the next page, you explain that, When an
7 alkane is not a standalone molecule, but is instead
8 bonded to other chemical components as a group, the
9 group name is derived by replacing the -ane of the
10 corresponding alkane by the suffix -yl. Do you see
11 that?

12 A. Yeah.

13 Q. In paragraph 69, you then go on to explain
14 that the alkanes of four or more carbons can form
15 different isomers, right?

16 A. Yes.

17 Q. And then if we turn to the next page, you
18 explain there that unbranched or straight-chain alkanes
19 are referred to as n-alkanes or normal alkanes, right?

20 A. Yes.

21 Q. And then you go on to explain that alkanes
22 that have the same number of carbon atoms can also have
23 branch structures which are different isomers, right?

24 A. Yes.

25 Q. And you give an example on page 44 of n-butane

1 as the unbranched form of butane, and iso-butane as the
2 branch structure of butane, right?

3 A. That's right.

4 Q. Is it your opinion that unbranched alkanes
5 must be named by the n prefix that you discussed here?

6 MR. TOBIN: Objection, form.

7 A. With regards to what context?

8 Q. (BY MR. LANDMON) Well, with regards to the
9 context you're talking of here.

10 MR. TOBIN: Same objection.

11 A. So what I'm talking about here is I am looking
12 at the textbooks and describing how they are named. And
13 in my opinion, these are general descriptions of
14 alkanes, such as n, iso, and then later on it talks
15 about neo. But, again, it just depends upon the context
16 that you're using them. So in pharmaceutical
17 development, you would need to be very specific about
18 the exact structure of what you were using.

19 Q. (BY MR. LANDMON) In the case of butane, is it
20 your opinion that the word "butane" could refer to
21 either n-butane or iso-butane?

22 MR. TOBIN: Objection, form.

23 A. Again, within the context of how you're
24 referring to it. In the pharmaceutical context, butane
25 would mean, as I've said, there would be two isomers,

1 but butane is a general description of the 4 carbon
2 alkane.

3 Q. (BY MR. LANDMON) Okay.

4 MR. LANDMON: Lance, if I can have you
5 pull up another document. It's tab 14, Exhibit 2051
6 from the '786 patent IPR.

7 (Exhibit 2051 marked.)

8 Q. (BY MR. LANDMON) Dr. Brown, let me know when
9 you have the exhibit up in front of you.

10 A. Sorry, what's the exhibit number?

11 Q. The exhibit number is 2051.

12 A. Yeah, I have it in front of me.

13 Q. And this is the Streitwieser reference that
14 you cited in your declarations for the points we've just
15 been discussing. Is that right?

16 A. That's right.

17 Q. So if you turn to -- hold on a second. Let me
18 get the right page. So if you turn to page 9 of the
19 PDF, I believe it's page 44 of the actual reference, but
20 it's page 9 of this document either on the PDF or at the
21 bottom where you see Exhibit 2051, you'll see page 9.
22 Let me know when you're there.

23 A. Yeah, I'm there. I'm at 3.5.

24 Q. Great.

25 And you see 3.5, it's titled, n-alkanes, the

1 Simplest Organic Compounds, right?

2 A. I do, yeah.

3 Q. Okay. And if I can point you to the last
4 sentence in the second paragraph, do you see that it
5 states, The normal alkanes are named according to the
6 number of carbon atoms in the chain (Table 3.2)?

7 A. Okay. Yeah, I've read that, yeah.

8 Q. Okay. And then the next paragraph reads that,
9 These names derive from the generic name alkane with the
10 alk- stem replaced by a stem characteristic of the
11 number of carbons in the chain. The first four members
12 of this series, methane, ethane, propane, and butane,
13 are names that came into widespread use before any
14 attempts were made to systematize the names of organic
15 compounds. The remaining names derive quite obviously
16 from Greek numbers; compare pentagon, octal, decimal,
17 and so on. Do you see that?

18 A. I do see that, yes.

19 Q. Okay. And if you turn over to the next page,
20 you will see a Table 3.2 that lists the names for
21 different n-alkanes. Do you see that?

22 A. Yeah.

23 Q. And Table 3.2 lists the 4 carbon n-alkane as
24 being named butane, right?

25 MR. TOBIN: Objection to form.

1 A. That table has an n number 4, next to it
2 butane, and then a simple structure.

3 Q. (BY MR. LANDMON) Okay. And it doesn't call
4 it n-butane, right?

5 A. No, on that table it doesn't. It doesn't
6 refer to them how the n number refers to normal in the
7 text for that table. And it does on the side say
8 "n-alkanes, the Simplest Organic Compounds."

9 Q. But when it identifies the 4 carbon n-alkane,
10 it identifies it as butane and not n-butane, right?

11 MR. TOBIN: Same objection.

12 A. But within that table, it talks about
13 "n-alkanes, the Simplest Organic Compounds" on the side.
14 That's referencing that table. So the left-hand side
15 has propane, butane, but the right-hand says --
16 references n-alkanes.

17 Q. (BY MR. LANDMON) And you're not aware of
18 chemists referring to the 4 -- sorry, strike that.

19 You're not aware of chemists referring to the
20 4 carbon n-alkane as just butane instead of n-butane.
21 Is that your testimony here today?

22 MR. TOBIN: Objection to form.

23 A. Sorry, could you repeat that again?

24 Q. (BY MR. LANDMON) Yeah. You're not aware of
25 chemists referring to the 4 carbon n-alkane as being

1 named butane and not n-butane. Is that your testimony
2 here today?

3 A. Well, what I am testifying is that it's very
4 much dependent on the environment at which you're
5 discussing them and the context thereof.

6 Q. Okay. In the context of pharmaceuticals, are
7 you aware of organic chemists who refer to the 4 carbon
8 n-alkane as being named butane and not n-butane?

9 A. That's an interesting question. I'm obviously
10 am not aware of every single quote of butane. All I can
11 say in the context of reading the patents and
12 everything, then, you know, there are a number of
13 isomers. So as I have explained before, in
14 pharmaceutical development, a skilled artisan would know
15 that the isomer form is critical in functionality, and
16 there are a number of examples of isomers, for both
17 drugs and excipients, will affect the activity of the
18 individual excipient and/or drug, just in the same way
19 as like -- I think you're probably too young -- but
20 thalidomide and some of the others, and propranolol and
21 things like that, where the isomeric form is critical.
22 There are also isomeric forms of other excipients where
23 it's important to make sure. And this is one of them.
24 So very much in the context.

25 And I think I've experienced in development

1 where there has been confusion around the naming of
2 alkanes which has led to different properties. So it's
3 like -- so methyl, 3-methyl or 2-methylpropane. I think
4 I give the example later which is also a butane, but it
5 has very different properties. So I think that -- I
6 can't speak for all chemists, but I think it's
7 fundamental in pharmaceutical development that you are
8 more specific and less general.

9 Q. So let's focus on my question. Are you aware
10 that chemists in the pharmaceutical arts prior to 2009
11 would refer to the 4 carbon n-alkane as being named
12 butane and not n-butane?

13 MR. TOBIN: Objection, speculation.

14 A. I couldn't tell you.

15 Q. (BY MR. LANDMON) You don't remember that?

16 A. At this moment in time, I don't recall that,
17 no. Well, I can --

18 Q. Is it you --

19 MR. TOBIN: Were you done with your
20 answer, Dr. Brown?

21 THE WITNESS: No.

22 A. What I can say is what I told you before, that
23 chemists working in this context, I would expect them to
24 be very much specific about the form of the alkane they
25 were talking about.

1 Q. (BY MR. LANDMON) Okay. So is it your
2 testimony, as you sit here today, that a person of
3 ordinary skill in the art prior to 2009 would only refer
4 to the 4 carbon n-alkane as butane and -- I'm sorry --
5 as n-butane and not butane?

6 MR. TOBIN: Objection to form.

7 A. That's not my testimony. My testimony is that
8 in the context of the patents and also in this context
9 here where it references it, I think it's important to
10 understand that there are different isomers, branched or
11 straight.

12 Q. (BY MR. LANDMON) Okay. So I understand what
13 you're trying to say. But I'm trying to find out what
14 POSAs did prior to 2009. And I'm asking, is it your
15 testimony as you sit here today that POSAs prior to 2009
16 would only refer to the n -- to the 4 carbon n-alkane as
17 n-butane and not just butane?

18 A. I think --

19 MR. TOBIN: Objection, form.

20 A. I think a POSA would -- should understand that
21 there is a difference from a general name and the
22 isomeric forms. What they would write down in
23 individual documents or whatever, I can't say. I am
24 just saying I believe that a POSA would understand the
25 difference and would write it down. I can't say what

1 they have done.

2 Q. (BY MR. LANDMON) So you don't recall prior to
3 2009 that it was common in the art for a POSA to refer
4 to the 4 carbon n-alkane as simply butane and not
5 n-butane? Is that your testimony as you sit here today?

6 MR. TOBIN: Same objection.

7 A. Sorry, can you repeat the question again?

8 Q. (BY MR. LANDMON) So you don't recall prior to
9 2009 that it was common in the art for a POSA to refer
10 to the 4 carbon n-alkane as being named butane and not
11 n-butane? Is that your testimony, as you sit here
12 today?

13 A. I am -- I mean, I think this edition of this
14 book which was this textbook -- it was dated long before
15 the specific region you're talking about where he has
16 highlighted the importance of n. But as you have
17 highlighted here, you believe that they've just called
18 them by their general name, although I think there's n
19 his reference there. It just depends. I don't think I
20 can give you an answer about what may have happened by
21 any number of people in the past.

22 What I am saying is I believe a POSA, our
23 person with all these different skillsets would know
24 that the n part of it is very important in the
25 functionality of the alkanes and also the alkanes linked

1 to the saccharides in terms of the n-DDM. And that's
2 all I can tell you.

3 Q. So you understand you've given opinions here
4 and purported to testify from the perspective of a
5 person of ordinary skill in the art, right?

6 A. I do, yeah.

7 Q. Okay. And you're aware of what people of
8 skill in the art were saying prior to 2009, right?

9 MR. TOBIN: Objection to form.

10 A. Am I aware of every single publication by
11 every single potential POSA ever published in the world,
12 no.

13 Q. (BY MR. LANDMON) No, that wasn't my question.
14 But you're aware of how a POSA generally used
15 nomenclature and made statements prior to 2009?

16 MR. TOBIN: Same objection, form.

17 A. I'm aware of what the POSA that I am
18 envisioning would be aware of, yes.

19 Q. (BY MR. LANDMON) What is the POSA that you're
20 envisioning? Is it the one set forth in your
21 declarations?

22 A. It is, yeah.

23 Q. Okay. And you're aware that the POSA set
24 forth in your declarations would commonly refer to the
25 4 carbon n-alkane as being simply butane and not

1 n-butane, right?

2 MR. TOBIN: Objection, form.

3 A. No, I -- so are you telling me they would
4 refer to butane, not n-butane?

5 Q. (BY MR. LANDMON) That they would refer to the
6 4 carbon n-alkane as simply butane and not n-butane,
7 right?

8 A. No, I've never said that.

9 Q. I know you haven't said that. I guess I'm
10 just asking you. You --

11 THE WITNESS: He's gone again.

12 MR. TOBIN: Counsel, you went quiet
13 again. We lost your audio. Let's go off record.

14 (Discussion off the record.)

15 Q. (BY MR. LANDMON) Dr. Brown, so I've heard
16 what you've been testifying. You believe nomenclature
17 and using the n was important. You believe that
18 different isomers were important. I am just asking how
19 a POSA prior to 2009 would state things and use
20 nomenclature. I guess I'm just confirming, as you sit
21 here today, it's your opinion that a POSA would only
22 have referred to the 4 carbon n-alkane as n-butane and
23 not just butane?

24 A. It's actually --

25 MR. TOBIN: Objection, form.

1 Give me one second, Dr. Brown. You may
2 continue. Sorry.

3 A. It's a different question to what you asked me
4 before, unless I've got it mixed up. So am I saying
5 that the POSA that I envision should refer and would
6 refer to the linear form of an alkane with the n, yes.

7 Q. (BY MR. LANDMON) I'm not asking what they
8 should have done. I am asking what they did prior to
9 2009.

10 A. There isn't -- I might be wrong, but the POSA
11 is a hypothetical person I'm envisioning with various
12 skills. My POSA would, yes.

13 Q. So your POSA would. I'm asking the people who
14 qualified for the POSA definition prior to 2009, is it
15 your position here that they would have only referred to
16 the 4 carbon n-alkane as n-butane and not just butane?

17 A. It is my testimony and opinion that they --
18 the POSA in this case, in the context of reading
19 everything that's been made available, would refer to
20 the linear alkane with the n.

21 Q. Do you have your '786 declaration in front of
22 you?

23 A. Yeah.

24 Q. Start with page 38.

25 A. Yeah.

1 Q. Okay. And actually, let's turn to page 39.
2 So page 39, paragraph 61, sets forth Neurelis's
3 definition of a POSA, right?

4 A. Yes, it does.

5 Q. And that includes a person with a master's
6 degree with many years of experience, right?

7 A. Several, yes.

8 Q. Well, it just says many, right?

9 A. Well, I'm reading a skilled artisan holds a
10 master's degree -- oh, yeah, many years. Sorry. Or a
11 PhD with several years. Sorry. Yeah.

12 Q. Is there a difference between many years and
13 several years there?

14 A. No. I just was reading the second part.

15 Q. No, no, I understood that. I didn't think of
16 this question to ask you earlier, but is there a
17 difference between many years and several years in the
18 POSA definition?

19 A. Well, several can be many, I guess. I don't
20 know. I understand that Neurelis, that's the
21 contention. In terms of several could mean many, I
22 guess it depends on the context of what they're
23 describing. I'm not sure what to answer there.

24 Q. Okay. You don't have an opinion on that?

25 A. I have an opinion on the fact that the

1 master's degree with many years and a Pharm.D degree
2 with several -- in my experience, if they're not PhD,
3 they're going to have less direct experience, so they
4 will need -- probably likely need more than a PhD. So
5 maybe that's the difference between many and several,
6 reading this context.

7 Q. It is just saying that the PhD or Pharm.D
8 would have more years of experience than the person with
9 a master's degree?

10 A. No. The opposite.

11 Q. The opposite. Okay.

12 And it says that experience would be in the
13 field of pharmaceutical research and development, right?

14 A. Yes.

15 Q. So is it your opinion, as you sit here today,
16 that people who held master's degrees with many years
17 of experience in the field of pharmaceutical research
18 and development prior to 2009 would always refer to
19 the 4 carbon n-alkane as being n-butane and not just
20 butane?

21 MR. TOBIN: Objection, form.

22 A. Again, I answer the question the same way I've
23 answered it. I believe they would, yes. Always is a
24 very hard question to answer. And in my -- when framing
25 my opinions of a POSA -- a skilled artisan, sorry, I

1 believe that they would when in the context of this --
2 of the various documents that I've been involved in
3 reviewing as specified in my declaration.

4 Q. (BY MR. LANDMON) And you don't recall -- in
5 the entirety of your career and education, you don't
6 recall reading publications by a person who would
7 qualify as a POSA prior to 2009 where they refer to the
8 4 carbon n-alkane as being simply butane and not
9 n-butane, right?

10 A. That was a very long question with lots of
11 parts. Do you think you could separate it out a bit?
12 Sorry.

13 Q. I think I can repeat it.

14 You don't recall in the entirety of your
15 career and educational experience reading a publication
16 by a person who would qualify as a POSA prior to 2009
17 where they referenced the 4 carbon n-alkane as being
18 simply butane and not n-butane. Is that your testimony
19 here today?

20 A. My testimony today is a skilled artisan
21 within -- as I've listed in the context of this case
22 would refer to a linear alkane with the n. And we have
23 to put our skilled artisan who has reviewed the patents,
24 has reviewed everything else, you know -- in my
25 experience, a skilled artisan on a different patent case

1 maybe had a different set of skills. I can't speak -- I
2 cannot speak or recall what has gone on anywhere
3 published of a -- what a skilled artisan has defined as
4 you're referencing would or wouldn't have done. What I
5 am saying is the skilled artisan in this case would
6 absolutely refer to n-alkane.

7 Q. And that's despite the fact that there were a
8 large number of publications referring to the linear
9 alkane as simply butane prior to 2009 from a person who
10 would meet the definition of a POSA. Is that your
11 testimony?

12 A. Well, you've showed me one where I think it
13 does refer to butane with an n if they're a POSA. But,
14 you know, I don't know the background of the person
15 that's written this, other than they wrote a textbook.

16 Q. Okay. You're not aware that the person who
17 wrote that textbook qualifies as a POSA?

18 A. I don't know them, sorry.

19 Q. Okay. And you're not aware of all of the
20 publications -- of any publication prior to 2009 written
21 by a person of ordinary skill in the art referring to a
22 linear alkane as just butane and not n-butane? Is that
23 your testimony here today?

24 A. So let's understand this. What you're saying,
25 if the person has written an article with a skillset

1 that has defined -- has been, as I've defined as
2 Neurelis has contended, with that experience of
3 skillset and that have written articles, which I won't
4 be aware that has written those articles, whether they
5 would be a skilled artisan or not. You're asking me if
6 I can confirm they've never written it one way or
7 another. Is that right? Because I don't think I can do
8 that, sorry.

9 Q. I'm just trying to understand what a person
10 with a master's degree with many years of experience or
11 a PhD degree with several years of experience in the
12 field of pharmaceutical research and development prior
13 to 2009 would have written. And I have heard you kind
14 of repeatedly say what they should have written and that
15 in a certain context they should have included the
16 n-butane. What I am trying to ask is was it written
17 prior to 2009 where a person who met those
18 qualifications would refer to the linear alkane as just
19 butane?

20 MR. TOBIN: Same objection.

21 A. Yeah, and what I'm saying is you've only read
22 the first four lines of what a skilled artisan is. It
23 also includes they would have further knowledge and
24 practical experience working with intranasal
25 formulations, the knowledge of physiology, anatomy of

1 the nasal cavity, and methods of administering drugs
2 intranasally. They would also have knowledge concerning
3 clinical aspects of bioavailability, tolerability and
4 patient acceptability. So this is -- this skilled
5 artisan has a group of experience of all these
6 experiences to be able to understand, you know, the case
7 we're encountering. And, therefore, I can't say what
8 they have done outside of this context. What I am
9 saying, that my skilled artisan would have written the
10 n. But that skilled artisan is not just PhD -- a
11 master's or a PhD. There's other skillsets that
12 contribute to this hypothetical skilled artisan.

13 Q. (BY MR. LANDMON) Yeah. I mean, there's
14 certainly other knowledge, and I wasn't intending to cut
15 that off. But there are, you know, I'll call it a large
16 number of people, you would agree, that prior to 2009
17 met this definition?

18 MR. TOBIN: Objection, foundation.

19 A. All I can tell you about is this is my
20 definition of a skilled artisan in this case. I can't
21 comment about skillsets of other people, because this
22 person for the course of this is this person with these
23 individual skills to be able to understand what it was
24 in this -- this point in time.

25 Q. (BY MR. LANDMON) And what's so special about

1 this person that this person would not use the common
2 practice of chemists prior to 2009 of listing -- or of
3 stating that a linear alkane is simply butane and not
4 n-butane?

5 MR. TOBIN: Objection, assumes facts not
6 in evidence.

7 A. Well, you know, again, a chemist is a chemist.
8 They may be an organic chemist. They may be a synthetic
9 chemist. They may be an analytical chemist. We're also
10 talking about this hypothetical skilled artisan with
11 experience in nasal drip delivery and physiology. We're
12 also talking about them having the knowledge of
13 bioavailability and tolerability. So that isn't your
14 standard chemist. So to define chemist with -- as just
15 as chemist I think is unfair to chemists. They have a
16 skillset. This skilled artisan here has a skillset in
17 particular to them.

18 Q. (BY MR. LANDMON) And what is particular about
19 these people that would lead them to use different
20 nomenclature than what we've seen described in the
21 publication before you and what's in enumerable
22 publications listing a linear alkane as simply butane
23 and not n-butane?

24 MR. TOBIN: Objection, assumes facts not
25 in evidence.

1 A. I can't comment on that. But what I am saying
2 is my skilled artisan, as defined here, would appreciate
3 that by not labeling materials like that correctly and
4 indicating whether they're linear or whether they're
5 branched, as I've given you examples of before, can
6 cause problems. And so it's a bit like, for example,
7 the thalidomide case I gave. They all have different
8 influences, that branch structure, the linear structure.
9 There are different melting points. There are different
10 administerabilities. Therefore, that will affect the
11 incorporation into the formulation. So there's all
12 kinds of risks to benefits there. And, therefore, I
13 believe the skilled artisan with the pharmaceutical
14 experience can -- and I hesitate -- the pharmaceutical
15 experience in developing products -- because he says
16 administering drugs. They would know that it's
17 extremely important to be definitive about the structure
18 of any ingredient.

19 Q. (BY MR. LANDMON) All right. Let's turn back
20 to the Streitwieser reference.

21 So, again, that's Exhibit 2051 back on your
22 screen. If you could turn with me to -- it's probably
23 the next page, but page 11. Let me know when you're
24 there.

25 A. Yeah, I'm on page 11.

1 Q. Okay. And do you see there's a Section 3.6
2 entitled, Systematic Nomenclature? Do you see that?

3 A. I do, yeah.

4 Q. And this section generally discusses how to
5 name different isomers of alkanes, right?

6 A. That's certainly the bit I'm looking at, yeah.

7 Q. Okay. And it identifies n-butane and
8 iso-butane as different isomers of the 4 carbon alkane,
9 right?

10 A. Yeah.

11 Q. But when it discusses isomers of pentane,
12 which has 5 carbons, it simply lists pentane and not
13 n-pentane, right?

14 MR. TOBIN: Objection to form.

15 A. So the figure I'm looking at is labeled
16 pentane, isopentane, and neopentane, with the branch
17 structures identified as in a methyl group penultimate
18 end of the chain and the central one with 4-methyl
19 groups, which is the neo.

20 Q. (BY MR. LANDMON) But to answer my question,
21 pentane is listed as pentane and not n-pentane, right?

22 A. Pentane in that table is labeled "pentane."

23 Q. Right. And even though the pentane that's
24 listed there is a linear alkane, right?

25 A. Well, as it's referring to the three -- just

1 give me one second. I just need to go back to
2 my declaration.

3 So when you look at that, there are three
4 isomers. There is the linear isomer, which is the only
5 one left. There is the isopentane and the neopentane,
6 because there are only three. I can't answer why they
7 haven't labeled the linear pentane as an n-pentane. But
8 previously they've talked about linear ones being
9 labeled n, and that because there's three, and there's
10 two already described in the classic way. You know, it
11 has to be n-pentane.

12 Q. But at least for Streitwieser's purposes, the
13 n prefix is optional and not necessary when naming
14 unbranched or straight-chain alkane, right?

15 A. I mean, I can't say whether that's true or
16 not, because in the previous one, he's listed it as
17 n-butane. So whether that's a typo or whatever -- I
18 mean, having written a few books, no textbook is free of
19 typographical mistakes. So I guess unless we go back
20 and looked if there was any erratum issued, I have no
21 idea why he hasn't put it on that one he spent so much
22 -- so much describing or describing it. And the
23 previous alkane, he's listed the same structure for
24 butane, and he's got an n in front of it. Don't know.

25 Q. If you look at the next paragraph, the

1 paragraph that's right underneath those figures, do you
2 see that that paragraph discusses a number of isomers
3 for different length alkanes? Do you see that?

4 A. Yeah, I believe so. Starting with the prefix
5 iso, is that what you mean?

6 Q. Yeah.

7 A. Yeah.

8 Q. Do you see that paragraph?

9 A. Yeah.

10 Q. Okay. And that paragraph explains while it's
11 possible to name each isomer using different prefixes
12 for alkanes with 4 or 5, there's then these couple of
13 sentences at the end of the paragraph that start with,
14 It is obviously not possible to coin a set of unique
15 prefixes like iso- and neo- to name all of the dodecane
16 isomers, or, for that matter, even the heptane isomers.
17 Clearly, it is essential that a method of systemic
18 nomenclature be devised, so that each different compound
19 may be assigned an unambiguous name.

20 Do you see that?

21 A. I do.

22 Q. So Streitwieser is explaining here that for
23 alkanes with at least 7 or more carbon atoms, the
24 isomers are not named based on the total number of
25 carbons, but instead by chemical nomenclature rules,

1 right?

2 A. He's saying -- I don't believe he said
3 nomenclature. Sorry, where is that bit? Were you
4 reading out or just summarizing it?

5 Q. I was trying to summarize it.

6 A. Okay. Sorry.

7 Q. That's okay.

8 A. Yeah, it's not possible to coin a set of
9 unique prefixes. Yeah, he definitely says that in that
10 paragraph. However, in the paragraph after, he refers
11 to the International Congress of Chemists, specifically
12 of IUPAC, who did come up with a system of labeling them
13 all, I believe.

14 Q. And that -- "IUPAC," is that how you say it?

15 A. I think that's as close as I got, but, yeah, I
16 think so.

17 Q. Okay. And the IUPAC nomenclature was known
18 before 2009, right?

19 A. Well, he's certainly quoting it here before
20 2009, because there was an International Congress of
21 Chemists from Geneva in 1892, yeah.

22 Q. Okay. And you're familiar with the IUPAC rule
23 for chemical nomenclature?

24 A. I know it exists, and I know how it's labeled
25 it, and I learned it in my first year of my degree and

1 follow-on, so yes.

2 Q. Will you agree that the IUPAC rules for
3 chemical nomenclature are generally regarded as the most
4 authoritative source for determining how to name
5 chemical compounds?

6 A. I mean, I think it is -- in my opinion, the
7 IUPAC will tell you, as it says it there actually --
8 will give you the full name of everything in terms of
9 the structure so there is no confusion. But I think
10 that doesn't mean to say the general naming still
11 doesn't go on.

12 Q. And do you see in the second paragraph on
13 this, it says that, The IUPAC system of alkane
14 nomenclature is based on the simple fundamental
15 principle of considering all compounds to be derivatives
16 of the longest single carbon chain present in the
17 compound? And then it goes on to say, Appendages to
18 this chain are designated by appropriate prefixes. The
19 chain is then numbered from one end to the other. Do
20 you see that?

21 A. I do.

22 Q. And do you see underneath it shows an example
23 of 2-methylpentane, right?

24 A. Yeah.

25 Q. The "pentane" part of this name comes from the

1 5 carbon atoms that make up the longest carbon chain in
2 the compound, right?

3 A. Indeed that's the case, yes.

4 Q. Okay. And even though 2-methylpentane has six
5 carbon atoms total, it's not named hexane, right?

6 A. Well, it's not there labeled hexane, no. It's
7 labeled 2-methylpentane. It's a different nomenclature
8 system. There's the general one that we've been talking
9 about previously. And there's the IUPAC, which has its
10 own set of rules.

11 Q. And would you agree that a POA would
12 understand, based on the IUPAC nomenclature rules, that
13 hexane refers to a straight-chain alkane having six
14 carbons while 2-methylpentane refers to a branched
15 alkane having six carbons?

16 MR. TOBIN: Objection to form.

17 A. I would agree that my skilled artisan would
18 understand that if something was labeled n-hexane, it
19 was a linear chain. If just labeled hexane, it has, you
20 know, several connotations. This is very specific
21 because it's got a methyl group, so it would be
22 isohexane.

23 Q. (BY MR. LANDMON) And a skilled artisan
24 wouldn't understand that hexane refers to the
25 straight-chain alkane having six carbons, while

1 2-methylpentane refers to the branch alkane having six
2 carbons. Is that your testimony?

3 A. So I think that when you are labeling
4 specifically structures, n-hexane is what my skilled
5 artisan would use or understand as linear. I think
6 generally hexane would cover the number of isomers that
7 exist in that. And, you know, I can't explain why
8 Streitwieser labeled the first structure with the n and
9 the second structure without it unless it was a typo or
10 the fact it was assumed because the other two isomers
11 were there. But I think the label of hexane doesn't
12 really give you an idea of ultimately the structure in
13 that generic labeling system.

14 Q. Are you aware that the IUPAC publishes what is
15 known as the Blue Book that includes detailed rules for
16 naming organic compounds? Are you aware of that?

17 A. I know they consider, yeah, rules. And some
18 of the drugs I've worked on, they've had to use that to
19 name their drug. But, fortunately, I wasn't involved in
20 it.

21 Q. Okay. Yeah, sorry, maybe this was unclear.
22 But I guess I'm asking you are you aware that the IUPAC
23 publishes the Blue Book?

24 A. I'm aware they publish the rules. I didn't
25 appreciate it was in a Blue Book. But I know you can

1 look online and get the rules. I don't know what was
2 available in 2009 --

3 Q. Okay.

4 A. -- I'm afraid to say. Apologies.

5 Q. And the IUPAC rules for nomenclature, are you
6 aware that they don't recommend naming straight-chain or
7 unbranched alkanes with the n prefix?

8 MR. TOBIN: Objection, form.

9 A. Well, don't they recommend to name them like
10 in the name with the structures of like this, and is
11 there alphabetical difference of different functional
12 groups?

13 THE WITNESS: Sorry.

14 (Reporter clarification.)

15 A. Yeah, so I was not aware that they stated that
16 IUPAC shouldn't label hexane as hexane, I think you
17 said, is that right, the linear form of hexane?

18 Q. (BY MR. LANDMON) Sorry, I may have asked it
19 incorrectly, but -- or confusingly.

20 Are you aware that there is no IUPAC
21 recommendation to name straight-chain or unbranched
22 alkanes with the n prefix? Are you aware of that?

23 A. Are you asking me now or in 2009?

24 Q. Either.

25 A. Well, the answer to either is I -- off the top

1 of my head, I do not know what the instructions were in
2 2009. And nowadays if I wanted to discover that, it's a
3 lot easier, but, no. Off the top of my head, no, I
4 wasn't aware of that.

5 Q. The IUPAC rule for naming straight-chain or
6 unbranched alkanes is to simply identify the compound
7 based on the Greek numbers without including the n
8 prefix, right?

9 MR. TOBIN: Objection, assumes facts.

10 A. As I've said, I'm not aware of that. So you
11 would need to show me that.

12 Q. (BY MR. LANDMON) Okay.

13 A. Sorry.

14 Q. And you didn't consider that in issuing your
15 opinions here?

16 A. I know IUPAC had different labeling because I
17 mentioned it and gave you an example. I don't recall
18 using any exhibits around that labeling system because
19 of how they were labeled in the relevant documents.
20 There's a different way I describe in my background
21 about the labeling that I think was being used at the
22 time in this particular set of patents, challenge
23 patents or whatever, and the associated documents.

24 Q. Let's turn back to your declaration for the
25 '786 patent.

1 MR. TOBIN: Counsel, if you're keeping
2 the same line, let's keep going a little more. If
3 you're switching to a new line, it would be a good time
4 to take lunch soon.

5 MR. LANDMON: It's kind of marginal, so
6 we can -- yeah, we can take lunch now.

7 MR. TOBIN: Thanks. Let's go off record.

8 (Break from 12:46 p.m. to 1:34 p.m.)

9 Q. (BY MR. LANDMON) Dr. Brown, welcome back from
10 lunch. If I can have you turn to your declaration in
11 relation to the '786 patent.

12 A. I am there.

13 Q. Okay. So let's turn I guess first to page 46.

14 A. Yes.

15 Q. Okay. And if you see right at the bottom, you
16 have a statement saying, In the figure below, a handful
17 of the 355 isomers that -- and is that dodecane or
18 "dodecane"?

19 A. "Dodecane."

20 Q. "Dodecane." Thank you.

21 So I will repeat this.

22 In the figure below, a handful of the 355
23 isomers that dodecane can adopt is presented. Do you
24 see that?

25 A. Yes.

1 Q. And then you have them at the top of page 47
2 depicted there. Do you see that?

3 A. I do.

4 Q. And you say underneath that figure that
5 n-dodecane is the linear isomer depicted at the top of
6 that figure, but dodecane can adopt 354 other isomeric
7 forms, only a few of which are depicted above. Do you
8 see that?

9 A. I do.

10 Q. And then you go on to say that, Other than
11 n-dodecane, every other isomer of dodecane is branched
12 in one or more locations. Do you see that?

13 A. I do.

14 Q. So the top structure in the figure at the top,
15 that has 12 carbon atoms in a straight or unbranched
16 chain. Is that right?

17 A. Yes.

18 Q. And you would agree that that is named
19 dodecane or n-dodecane, right?

20 A. n-dodecane.

21 Q. And the other compounds you included here also
22 have 12 carbon atoms, right?

23 A. Yes, they do. Yeah.

24 Q. But none of the other six carbons, other than
25 the top one, have 12 carbon atoms in a consecutive

1 chain, right?

2 A. Yeah, they don't. Yes.

3 Q. So would you agree that using the IUPAC
4 nomenclature rules that we discussed earlier, that none
5 of the six compounds you included here would have a
6 dodecyl or dodecane name?

7 MR. TOBIN: Objection to the form.

8 A. Would I agree? My understanding is that they
9 would -- the rules are for IUPAC, they adopt the longest
10 chain which would be on the left top one. That would be
11 11, which I think is on undecyl. So that would be
12 undecyl. And then when you count the number of
13 continuous carbons, then that's, if you like, the
14 straight-chain. That's how IUPAC will label them.

15 Q. (BY MR. LANDMON) And just so we're clear, I
16 think you said undecyl. Is that U-N-D-E-C-Y-L?

17 A. Yes, the 11 carbon.

18 Q. And so just so I'm clear, that's the compound
19 that is in the middle row to the left. What would the
20 name be of the compound in the middle row, but all the
21 way to the right that also has 11 carbons?

22 A. I think that would be 2-methylundecane.

23 Q. Okay. So if a compound is named dodecane or
24 has a dodecyl substituent without the n prefix, you
25 would understand that it is describing an alkane having

1 12 carbon atoms in a straight or unbranched chain under
2 the IUPAC nomenclature, right?

3 MR. TOBIN: Objection, form.

4 A. Under the IUPAC nomenclature, did you say?
5 Sorry.

6 Q. (BY MR. LANDMON) Yes.

7 A. So would I understand that? Under the
8 IUPAC nomenclature, if it was labeled something
9 2-methyldodecane, my understanding is that that would
10 mean there was a linear chain of 12 carbons described
11 and under IUPAC.

12 Q. You said 2-methyl?

13 A. Well, so if -- what I'm saying, if it was
14 branched, yeah. So because your question, unless I
15 misunderstood, was if IUPAC labeled something with
16 dodecane on it, yeah?

17 Q. Uh-huh.

18 A. Then if it was labeled n-dodecane, it would be
19 linear. If it was 2-methyldodecane, that would mean it
20 was branched with the continuous straight-chain being
21 12 carbons.

22 Q. And will you also understand under the IUPAC
23 nomenclature rules that if it was just labeled dodecane,
24 then it would have 12 carbon atoms in a straight or
25 unbranched chain?

1 MR. TOBIN: Objection to form.

2 A. Again, I would have thought that would have
3 been called n-dodecane.

4 Q. (BY MR. LANDMON) Okay. So if you saw
5 something labeled just dodecane under the IUPAC
6 nomenclature, you wouldn't understand that it had 12
7 carbon atoms in a straight or unbranched chain?

8 MR. TOBIN: Objection, form.

9 A. My recollection of how they label -- IUPAC
10 label things is one thing. How they're labeled in the
11 patents in this context is different because I'm not
12 sure whether IUPAC comes into the labeling of the
13 patents.

14 Q. (BY MR. LANDMON) The patents didn't use IUPAC
15 nomenclature. Is that what you're saying?

16 A. Well, what I have understood is that when
17 they're labeling n-methyl-beta-D -- sorry. When they're
18 labeling n-dodecyl-beta-D-maltose, that is a very
19 specific labeling of the structure. I am not aware how
20 that labeling compares to under IUPAC, whether they're
21 the same or not. I don't recall.

22 Q. And in the questions I was just asking, you
23 mentioned a compound that you called 2-methyldodecane.
24 Would that compound have 13 carbon atoms total?

25 A. I believe in the IUPAC definition, as we

1 talked about before when we did -- when we talked about
2 how you could label iso-butane and things like that,
3 they would have the carbon as a methyl and that it would
4 be the linear chain, so that in total would have 13.

5 Q. So in your -- turning back to your
6 declaration, you mentioned that there are 355 isomers
7 that dodecane can adopt, right?

8 A. Yes.

9 Q. And these are 355 isomers of a 12-carbon
10 alkane. Is that right?

11 A. Yes.

12 Q. And, sorry, I asked that a little clunky, but
13 each of these 355 isomers would have 12 carbon atoms.
14 Is that right?

15 A. They would have I believe 12 carbon atoms,
16 yes, under that nomenclature.

17 Q. And each of those 355 isomers would have 26
18 hydrogen atoms. Is that right?

19 A. I believe that's correct, yes.

20 Q. And would each of those isomers contain only
21 single bonds?

22 A. Saturating bonds, yeah. Call them bonds and
23 call them hydrogen --

24 (Reporter clarification.)

25 A. Saturated carbon-carbon bonds and

1 carbon-hydrogen bonds.

2 Q. (BY MR. LANDMON) Would it have been difficult
3 for a POSA in 2009 to sit down and draw all 355 isomers
4 of a 12-carbon alkane?

5 MR. TOBIN: Objection, form.

6 A. I think that would take a long time and with
7 all the variables to put together, but I don't believe
8 that it's -- wouldn't be possible for them to do as you
9 go through the iterations. No, I don't believe it would
10 be an impossible process for them to draw out the
11 different structures, but it would take a fair amount of
12 time.

13 Q. (BY MR. LANDMON) Although it would take a
14 fair amount of time, you agree that a POSA would have
15 been able to envision all 355 isomers of a 12-carbon
16 alkane in 2009, right?

17 A. I think -- I think that it's certainly
18 possible that they could draw out the variations in the
19 chain structures, in the isomers. But as I said, 355 is
20 going to take a long time. And I'm guessing if I was
21 the POSA, I would still systematically look into the
22 methyl groups and in the alcohol groups and then the
23 butyl groups, ensuring you get the same structure. So
24 having never tried it at that time as a POSA, but at all
25 as myself in 2026, I couldn't say definitively either

1 way. But it's definitely possible.

2 Q. Let's turn to page 61 of your declaration.
3 And do you see you have a section entitled,
4 Benzodiazepines, Including Diazepam? Do you see that?

5 A. Yes.

6 Q. And you explain that these drugs were
7 well-known and had long been used by 2008, right?

8 A. That's, indeed, I believe true, yeah.

9 Q. And you mentioned that they were used to treat
10 seizures when administered by IV or rectal suppository,
11 right?

12 A. I don't think -- I mention that in the text,
13 yeah.

14 Q. Yes.

15 A. Yeah, as an anticonvulsant, anti --
16 anxiolytic, sedative, muscle-relaxant, they have
17 different -- different efficacies based on strength and
18 potency and how they're delivered and formulated.

19 Q. By 2008 the nasal route was viewed as a
20 promising alternative for the administration of drugs
21 that were previously only available via IV or injection
22 routes, right?

23 MR. TOBIN: Objection to form.

24 A. Nasal delivery was certainly an area of
25 investigation for delivery both locally and systemically

1 into the bloodstream and also potentially to the brain.

2 Q. (BY MR. LANDMON) And it was a promising area,
3 right?

4 A. For certain drugs, yeah, within a context of
5 the type of drug and the type of dosage form and the
6 condition being treated, there were a number of products
7 on the market for nasal delivery.

8 Q. And if we turn to paragraph 108, which is on
9 page 64, do you see that you explain that it was known
10 that diazepam is a highly lipophilic molecule?

11 A. Yeah.

12 Q. And diazepam was already in the market by
13 2008, right?

14 A. As far as I remember.

15 Q. But not in nasal formulations, right?

16 A. Again, not as far as I remember.

17 Q. And a POSA would have been motivated to
18 develop or optimize other formulations of diazepam,
19 right?

20 MR. TOBIN: Objection, form.

21 A. Other formulations compared to --

22 Q. (BY MR. LANDMON) What was already on the
23 market.

24 A. There wasn't anything on the market for nasal.

25 Q. Correct. Yeah. So there were nonnasal

1 formulations on the market. And I guess what I was
2 asking, you would agree with me that in 2008, a POSA
3 would have been motivated to develop or optimize
4 diazepam to create other formulations, right?

5 MR. TOBIN: Objection to form.

6 A. Develop or optimize, that would indicate that
7 they had already been developed. But I think there was
8 an accepted understanding that diazepam for this
9 application, the way it was originally applied in those
10 approved formulations had its limitations, so I think
11 various routes of direct -- direct entry into the
12 systemic -- systemic circulation, like nasal, like the
13 oral mucosa, something where it got across quickly,
14 would have been something that had an avenue of product
15 development.

16 Q. (BY MR. LANDMON) And POSAs would have been
17 motivated to research that, correct?

18 MR. TOBIN: Same objection.

19 A. Well, that's an interesting question. And a
20 POSA, in my definition, with experience I think -- would
21 they appreciate the limitations of and the challenges of
22 delivering this drug via the currently approved routes,
23 yes.

24 Obviously, developing a product is very
25 costly, expensive, et cetera, et cetera, with risks and

1 benefits. So that's a different question.

2 Q. (BY MR. LANDMON) You would agree that in
3 pharmaceuticals generally, there's always a motivation
4 to improve upon products that are on the market, right?

5 A. Motivation by whom? Who are you talking about
6 specifically?

7 Q. Persons of ordinary skill in the art.

8 A. Again, a person of ordinary skill in the art
9 with their experience, they could be academic and they
10 could be commercial. In the commercial world, which is
11 where I've lived for a long time, a POSA would
12 understand the limitations and challenges to other
13 routes of delivery, especially this skilled artisan.
14 Would they have been driven to develop it is very much
15 in the commercial world and even in the academic
16 world -- is driven by people with money.

17 Q. Why don't we turn to the next section of your
18 declaration. You have a section entitled,
19 Bioavailability. Do you see that?

20 A. I do.

21 Q. And you discuss general principles relating to
22 bioavailability of a drug in this section, right?

23 A. Yes, I do.

24 Q. And do you agree that small lipophilic drugs
25 like diazepam often resulted in plasma concentration

1 profiles resembling that of IV injection and
2 bioavailabilities up to 100 percent, right?

3 MR. TOBIN: Objection, form.

4 A. Sorry, what route are you talking about?

5 Q. (BY MR. LANDMON) Let's start with IV.

6 A. I mean, IV infusion by definition is injecting
7 it directly into the bloodstream, so that would have
8 100 percent bioavailability.

9 Q. And how about nasal?

10 MR. TOBIN: Objection, form.

11 A. Nasal very much depends upon the drug in
12 question and the formulation used, the disease itself,
13 and the ease of delivering it, and that's a complex
14 multifactorial challenge. You also have the risk of too
15 high a concentration going in, having a risk of systemic
16 toxicity as well. So, generally speaking, there will be
17 a therapeutic window to achieve. The bioavailability
18 you get from that dosage forms is basically how you
19 measure whether you're achieving efficacy or any
20 systemic toxicity challenges.

21 MR. LANDMON: Lance, I am going to ask
22 you to bring up another document. It's tab 13. And I
23 am going to ask that that be marked as Exhibit 1073.

24 (Exhibit 1073 marked.)

25 Q. (BY MR. LANDMON) Dr. Brown, let me know when

1 you have that in front of you.

2 A. I have it in front of me.

3 MR. TOBIN: I don't have it in front of
4 me yet. Is there -- oh, pardon me. Let me download
5 that one. One moment, please.

6 MR. LANDMON: Take your time.

7 MR. TOBIN: Thank you.

8 It says I don't have permission to download
9 documents.

10 Chad, is that just an issue on my end or do
11 you have the same issue?

12 MR. LANDMON: It's working on my end.
13 Why don't we go off the record for a minute.

14 MR. TOBIN: All right. Sorry about that.

15 (Discussion off the record.)

16 Q. (BY MR. LANDMON) Dr. Brown, do you have
17 Exhibit 1073 in front of you?

18 A. Yeah, I do. Yeah.

19 Q. Okay. And do you see this is a textbook
20 entitled, Enhancement in Drug Delivery, edited by Elka
21 Touitou and Brian Barry?

22 A. I do.

23 Q. If you turn with me to -- it's page 15 of the
24 PDF. Let me know when you're there.

25 A. Page 15 of the PDF. Page 15 of the PDF.

1 Q. Yeah. Let me know when you're there. It's
2 part of the table of contents.

3 A. Oh, yeah. Sorry. Yeah, I'm there.

4 Q. Okay. And if you look down at Chapter 19,
5 there's a chapter entitled, Physiological Factors
6 Affecting Nasal Drug Delivery. Do you see that?

7 A. I do.

8 Q. Okay. And you were one of the four authors of
9 that chapter, right?

10 A. I was, indeed.

11 Q. Okay. So if we then turn --

12 A. Sorry, can we take a minute? The first author
13 was somebody that died in a cycling crash and you've
14 just --

15 THE WITNESS: Can I get a minute?

16 MR. TOBIN: Let's take a break.

17 THE WITNESS: Sorry.

18 MR. LANDMON: No, let's go off the
19 record.

20 (Break from 2:00 p.m. to 2:01 p.m.)

21 Q. (BY MR. LANDMON) So, Dr. Brown, if you could
22 turn to page 22 of the PDF, it's labeled at the top
23 page 360.

24 A. Yeah.

25 Q. And do you see a section entitled 19.3.2

1 titled, Permeability?

2 A. I do, yeah.

3 Q. And if you could -- do you see the first
4 sentence there, it says, Systemic drug delivery by the
5 nasal route offers many potential advantages over some
6 other routes, including rapid absorption and high
7 systemic availability? Do you see that?

8 A. I do, yeah.

9 Q. And if we turn to the next page, which is
10 page 23 of the document, but it's page 361 of the
11 article, if you could just read to yourself the last
12 paragraph in that, it starts with "lipophilic drug
13 molecules."

14 A. Yeah, I've read it.

15 Q. And you would agree that in 2007, when you
16 authored this chapter, you understood that lipophilic
17 drug molecules were known to be rapidly and efficiently
18 absorbed across the nasal epithelium?

19 A. What I knew at the time and a POA would know
20 at the time is that they can be absorbed up to a
21 bioavailability of up to 100 percent, yeah.

22 Q. And it was known in -- never mind, strike
23 that.

24 And if we could turn to page 364 of this,
25 which is page 26 of the document, do you see a section

1 entitled 19.4.3 entitled, Formulation Approaches?

2 A. Yes.

3 Q. And the first sentence under that says, As a
4 result of the physiological constraints outlined, a
5 number of formulation strategies have been devised to
6 optimize or improve nasal delivery of drugs (Figure
7 19.3). Do you see that?

8 A. I do.

9 Q. Do you agree that in 2007, formulators were
10 motivated to optimize and improve nasal delivery of
11 drugs via different formulation strategies?

12 MR. TOBIN: Objection, form.

13 A. I mean, this chapter is a review of the
14 approaches that could be used, the benefits and
15 challenges of delivery via the nasal mucosa. And it's a
16 guidebook for students, generally speaking. And it
17 talks about -- that particular figure talks about
18 lipophilicity, charge, molecular weight and all the
19 factors affecting absorption, along with the formulation
20 requirements, concentration, dosage form, pH, and then
21 what the barriers are, which obviously can challenge
22 delivery, and then the ways the absorption can be
23 enhanced, both physical and chemical.

24 Q. (BY MR. LANDMON) So let me try my question
25 again.

1 Do you agree that in 2007 formulators were
2 motivated to optimize and improve nasal delivery of
3 drugs via different formulation strategies?

4 MR. TOBIN: Objection, form.

5 A. I don't know. That very much depends upon the
6 drug.

7 Q. (BY MR. LANDMON) Well, how about with
8 diazepam? Would you agree that in 2007, formulators
9 were motivated to optimize and improve nasal delivery of
10 diazepam via different formulation strategies?

11 MR. TOBIN: Same objection.

12 A. Well, again, with the way you've asked the
13 question, there wasn't any nasal formulations available
14 to optimize or enhance. So they couldn't do it because
15 there wasn't any.

16 Q. (BY MR. LANDMON) Okay. Would you agree that
17 in 2007, a POSA was motivated to create a nasal delivery
18 formulation of diazepam?

19 A. As I've said and as this book exemplifies,
20 there are a number of routes of delivery that you can
21 take. You've selected one chapter, but in the context,
22 there's a lot of other routes, including the ones I've
23 described before, as in oral mucosa, buccal sublingual.
24 There is also, I believe, transdermal, if I recall
25 correctly. And that includes -- and there's vagina and

1 uterus. Yeah, there are a number of routes that were
2 being investigated by POSAs at the time to improve
3 delivery both locally and systemically. That's what
4 product development is about.

5 Q. And there were a number of routes because
6 POSAs were motivated to develop alternative ways to
7 deliver diazepam prior to 2008, right?

8 MR. TOBIN: Same objection.

9 A. I think there was a need for many drugs, both
10 from an interest point of view and a commercial point of
11 view, to develop dosage forms, alternative dosage forms
12 to what exist, both for the patient, both the product
13 itself and branding, and also for intellectual
14 properties and, you know, commercial value. So there
15 was a lot of motivation, and there continues to be a lot
16 of motivation. You have to look at ways of delivering
17 drugs most efficiently. I guess it's a bit like the
18 GLP-1s at the moment, which I believe you're lucky
19 enough now to have. So Mounjaro and Wegovy that were
20 originally developed as an injection, which obviously
21 can be problematic for the patient if they don't like
22 injections, and you now over in the US have an oral
23 dosage form tablet that's given, I believe -- I think
24 once a day. So, you know, the pharmaceutical industry
25 wouldn't exist without a drive to develop drugs and

1 products for efficient delivery, optimized delivery, as
2 you called it.

3 Q. (BY MR. LANDMON) So if we could turn to the
4 next page of this article, page 365 at the top, page 27
5 of the PDF. Do you see there's a section at the bottom
6 19.4.4, labeled, Absorption Enhancers? Do you see that?

7 A. Yeah. Yeah.

8 THE WITNESS: I think he might have
9 frozen.

10 MR. TOBIN: No, I think he's still
11 thinking. I don't know that he froze.

12 THE WITNESS: Either that or he's not
13 breathing.

14 MR. TOBIN: Counsel, can you hear us?

15 THE WITNESS: He's gone completely. I've
16 got a puffin.

17 MR. TOBIN: Let's go off record.

18 (Discussion off the record.)

19 A. I am looking at 19.4.4, Absorption Enhancers.

20 Q. (BY MR. LANDMON) So thank you. And thank you
21 for dealing with the technical issues.

22 So let's look back at that section. And let
23 me remind myself what my question was. So the first
24 sentence in that section explains that by 2007, it was
25 known that penetration enhancers were useful to

1 facilitate the absorption of drugs administered
2 intranasally, right?

3 MR. TOBIN: Objection, form.

4 A. It doesn't say that. It says of high
5 molecular weight molecules.

6 Q. (BY MR. LANDMON) Okay. So you would agree,
7 though, that the first sentence explains that
8 penetration enhancers were used to facilitate the
9 absorption of high molecular weight molecules, right?

10 A. That's what it says, yeah.

11 Q. And if we turn to the next -- no, not the next
12 page -- a few pages forward, to page 370, which on the
13 PDF is number page 32, do you see there's a section
14 entitled 19.7, Conclusion and Challenges for the Future?

15 A. I do.

16 Q. And if you -- it's kind of long, so I will let
17 you read it. Why don't you read the first paragraph.
18 Let me know when you're done.

19 A. Yeah, I've read that.

20 Q. So would you agree that in 2007, the nasal
21 route was generating increasing interest as a route for
22 the administration of local treatments in a
23 cost-effective and patient-friendly way?

24 A. Well, that's what I've written in the text.
25 You just repeated it, so yeah.

1 Q. So you would agree with that?

2 A. I think that at the time, from a formulation
3 development perspective, that it stands alone as a
4 potential and route of delivery and was attracting
5 ever-increasing interest for ingredient-specific
6 challenges, as it alludes to in the next sentence.

7 And I believe I talked about the pain and
8 migraine and panic attacks were in your previous
9 question, and I think specifically it talks about
10 systemic delivery of compounds that can only be
11 delivered by injection as in proteins, peptides, and
12 vaccines, which are very much large molecular weight,
13 according to my -- our previous discussion and then
14 targeting the CNS, which is the olfactory delivery.

15 So it was attracting increasing interest
16 specifically in those areas at that time.

17 Q. And wouldn't you agree that at the time it was
18 attractive, that a specific intranasal route was
19 attractive for crisis treatment where rapid onset of
20 action is desirable?

21 A. As I said before, that was one route of a
22 number to achieve fast-acting delivery for, you know,
23 what you're describing as crisis, you know, the kind of
24 approaches and needs of treating people for an immediate
25 effect, in much the same way as sublingual, oral mucosa

1 and rectal, in fact.

2 Q. And would you agree that the treatment of
3 seizures would be considered a crisis treatment where
4 rapid onset of action is desirable?

5 A. I think that's -- I am not a -- well, I am a
6 doctor, and I would argue I'm a proper doctor, but my
7 doctor would argue she's a proper doctor, because she's
8 a medic. But you've got me going on about something
9 that's not relevant for this conversation.

10 I am not a medical doctor, but, yeah, I
11 would -- from my perspective, I would consider that to
12 be true. Sorry I waffled.

13 Q. It was a good explanation. Thank you.

14 Okay.

15 A. Sorry, one thing I -- the bigger picture stuff
16 of crisis management is the ability to deliver -- get to
17 the patient before they're undergoing the condition,
18 yeah.

19 So, for example, you can inject a patient --
20 this is where my expertise comes in. You can inject a
21 patient and they do not have to be awake or around or
22 able to inhale, yeah. And they don't have to have their
23 mouth open or anything like that. Now, obviously,
24 rectal delivery, you know, if they're not aware and will
25 give you consent, and that's -- in most places, I think

1 apart from France, that's a no-no.

2 So as a diabetic that doesn't care about
3 needles, I'd still believe that injection will suit some
4 things. I think other routes of delivery that we've
5 talked about, including the oral mucosa, a bit like the
6 nitroglycerin sprays, and also, as you've highlighted,
7 the nasal delivery are all routes.

8 And there's also risks with those routes. So
9 it's a consideration dependent on a big package of
10 considerations, including the drug, the patient, the
11 type of formulation used, the toxicity challenges, the
12 ability to deliver, and, unfortunately -- and at the
13 time and now, also cost of goods, which I think when you
14 read this, it talks about some of the challenges of
15 nasal delivery, as well as the benefits, so -- the
16 issues about mucociliary clearance and metabolism.

17 So it is very much dependent upon the drug.
18 So, you know, there are potential benefits and potential
19 risks. And a POSA would know and have to consider all
20 those when selecting the formulation and the route and
21 the composition.

22 Because in the commercial world and in product
23 development and all that kind of stuff, less in pure
24 research and academia, all of those are enormous
25 considerations to undertake, because to get a delivery

1 system to market is no trivial matter. It's relatively
2 simple to evaluate potential in a test tube, but to take
3 it through the entire process is something else let's.

4 Q. Let's switch gears a little bit. I think you
5 still have your declaration on the '786 patent in front
6 of you?

7 A. I do.

8 Q. Okay.

9 MR. TOBIN: Counsel, are we done with
10 Exhibit 1073 for now?

11 MR. LANDMON: Yes.

12 MR. TOBIN: Okay. You can close that, if
13 you want, Dr. Brown.

14 THE WITNESS: Closed. Oh, I have lost
15 the whole thing now, sorry. Hold on. Where is it in
16 Zoom? Do we need to pull that back up?

17 MR. TOBIN: Yeah, let's go off record
18 again.

19 MR. LANDMON: Okay.

20 (Discussion off the record.)

21 Q. (BY MR. LANDMON) Dr. Brown, so let's look at
22 your declaration for the '786 patent, as I mentioned,
23 and turn to page 126. Let me know when you're there.

24 A. I am there.

25 Q. On the first paragraph on that page, it's

1 paragraph number 208, you're talking -- you discuss
2 Exhibit 1009 which you call the Gwozdz-PCT.

3 A. "Gwozdz." I think it's "Gwozdz" I've been
4 told is how you say it.

5 Q. Okay. "Gwozdz"?

6 A. "Gwozdz," yeah, I believe so. But it's
7 irrelevant. I know who you mean.

8 Q. I will do my best saying "Gwozdz."

9 MR. LANDMON: For the court reporter's
10 benefit, it's G-W-O-Z-D-Z.

11 Q. (BY MR. LANDMON) So you're talking about
12 Exhibit 1009 and you say that it purports to trace
13 priority to US provisional patent application filed on
14 March 28, 2008. Do you see that?

15 A. Yes.

16 Q. And then in paragraph 209, you discuss your
17 opinion about the '558 provisional supplying written
18 description for the challenged claims and then say that
19 you were informed by counsel and, therefore, you
20 understand that the Gwozdz-PCT should not be considered
21 prior art to the challenged claims. Do you see that?

22 A. I do.

23 Q. To the extent that the '558 provisional
24 application does not support the challenged claims of
25 the IPR patents, you understand that Gwozdz would then

1 be prior art against all three of those patents, right?

2 MR. TOBIN: Objection, form.

3 A. Sorry, can you ask me that again?

4 Q. (BY MR. LANDMON) Yeah. To the extent that
5 your opinion is incorrect and the '558 provisional
6 application does not support the challenged claims of
7 the IPR patents, you understand that Gwozdz would then
8 be prior art against all three patents, right?

9 A. So if the '558 -- so I am going to have to
10 work through this. It's a long question. If the '558
11 doesn't supply a written description of the challenged
12 claims, yeah, then Gwozdz would not be considered prior
13 art to the challenged claims. I understand that, yes.
14 That's why I've considered it, nevertheless, as a
15 document. There's lots of negatives and positives in
16 there that confused me. Sorry.

17 Q. No, I totally understand.

18 In paragraph 210, you go on to explain that
19 Gwozdz discloses pharmaceutical formulations containing
20 a mixture of tocopherols or tocotrienols and one or more
21 alcohols and/or glycols, right?

22 A. Yes.

23 Q. And you explain that the Gwozdz formulations
24 are suitable for solubilizing therapeutic agents, in
25 particular, lipophilic therapeutic agents, right?

1 A. What I described is drugs that are only
2 slightly soluble in water. And Gwozdz provides the
3 ability to dissolve -- dissolve them to produce a
4 solution.

5 Q. And Gwozdz explains that diazepam is one of
6 those types of therapeutic agents, right?

7 A. Yeah, diazepam is mentioned in the patent
8 itself.

9 Q. And the Gwozdz provisional also explains that
10 combining tocopherol and ethanol has been found to
11 provide solubility to diazepam approaching the 10
12 percent level, right?

13 MR. TOBIN: Objection, form.

14 Q. (BY MR. LANDMON) I can turn you there, so --
15 and maybe you're turning there. Do you have the Gwozdz
16 provisional?

17 A. I do, yeah. I'm just going to that
18 particular --

19 MR. TOBIN: Counsel, I think there's two
20 ships passing in the night in terms of documents he has
21 in front of him. Can I clarify the record on this?

22 MR. LANDMON: Yes.

23 MR. TOBIN: I think, Counsel, you're
24 asking specifically about the Gwozdz provisional?

25 MR. LANDMON: Yes.

1 MR. TOBIN: He doesn't have the Gwozdz
2 provisional open.

3 THE WITNESS: Oh, no.

4 MR. LANDMON: Okay.

5 A. You need to put it on the screen.

6 Q. (BY MR. LANDMON) Dr. Brown, do you have that
7 in your binder or no?

8 A. No.

9 Q. Okay. That's okay. We can bring that up.

10 MR. TOBIN: We can also print it, if you
11 want, or just go on the screen?

12 MR. LANDMON: I'm sorry?

13 MR. TOBIN: If you want, we can print it
14 or we can keep going and just go on the screen.

15 MR. LANDMON: Yeah, we can just go on the
16 screen.

17 I think it's tab 16, Lance. And it should
18 already be marked as Exhibit 1064.

19 (Exhibit 1064 marked.)

20 A. Yeah, I have it on the screen.

21 Q. (BY MR. LANDMON) Okay. So if we turn to page
22 7 -- hold on. Let me make sure I'm on the right page.

23 A. Is that the page 7 labeled by yourselves or
24 that's 7 of the actual patent? Sorry.

25 Q. That's what I'm trying to figure out. I think

1 it's -- yeah, so page 7 at the top, which is actually
2 page 9 of the PDF. It starts with --

3 A. Got it.

4 Q. The paragraph starts with, In accordance with
5 the present invention.

6 A. Yeah.

7 Q. Okay. If we look then starting around line
8 10, do you see there's a paragraph saying, As a
9 nonlimiting example?

10 A. I do, yeah.

11 Q. Okay. And then do you see that the second
12 sentence there explains that combining tocopherol and
13 ethanol has been found to provide solubility of the
14 diazepam approaching the 10 percent level? Do you see
15 that?

16 A. I do.

17 Q. And then it goes on to say, by way of
18 illustration, at 70 percent tocopherols to 30 percent
19 ethanol (200 proof) diazepam is soluble to greater than
20 or equal to 8 percent and at 95 percent tocopherol to
21 5 percent ethanol (200 proof) diazepam is soluble at
22 greater than or equal to 9 percent. Do you see that?

23 A. I do.

24 Q. You then agree that the Gwozdz provisional
25 application disclosed formulations containing a mixture

1 of tocopherols and alcohols that would be suitable for
2 making diazepam solutions, right?

3 A. For making a solution of diazepam within those
4 ranges. As it says it's soluble, those two together on
5 their own would produce a solution of diazepam at the
6 ranges they've suggested, which I think the examples, as
7 you elegantly spoke, is 8 and 9 percent.

8 Q. You agree that Gwozdz discloses formulation
9 that are less irritating to the skin and/or mucous
10 membranes than pure alcohol solutions, right?

11 A. You're going to have to have to help me. Why
12 would I think? It would very much depend upon the
13 context. They could be maybe less irritating than some
14 and not as irritating as others.

15 This particular one here, there are claims
16 around it. And for the different -- it seems to be a
17 plethora of different formulation approaches within --
18 where those solutions are then made into formulations,
19 complying potentially lots of other ingredients
20 depending upon the type of formulation. So as far as I
21 can read, the solutions it's coming up with produces
22 increased solubility of diclofenac when they're together
23 than when they're apart -- diclofenac? -- diazepam.
24 Sorry.

25 Q. If I can direct you back to your '786 patent

1 declaration, top of page 127. Let me know when you're
2 there.

3 A. I am there.

4 Q. And you quote Gwozdz there as stating that it
5 achieves a formulation that is, quote, much less
6 irritating to the skin and/or mucous membranes than pure
7 alcohol solutions. Do you see that?

8 A. Yeah. I do quote that.

9 Q. Okay. And you agree that Gwozdz does, in
10 fact, disclose formulations like that?

11 A. The PCT, the Gwozdz-PCT states that it
12 achieves a formulation that is much less irritating to
13 the skin or mucous membranes than pure alcohol solutions
14 and a higher loading. That's what it says.

15 Q. Right. And you don't disagree with that?

16 A. I don't have an opinion whether -- whether
17 that has or not because it's -- it depends very much on
18 the conditions under which you're testing it. I mean,
19 that's what the patent claims. That's what the patent
20 is saying.

21 Q. You don't dispute that, though?

22 A. There's nothing for me to dispute. I'm just
23 reading what the patent claims.

24 Q. Okay. And you agree that the formulations
25 disclosed in Gwozdz are useful for nasal administration,

1 right?

2 MR. TOBIN: Objection to form.

3 A. Well, it's an interesting question. Are they
4 useful for nasal administration? They are a series of
5 solutions that were put together with levels of
6 tocopherol and the alcohols. I am not sure whether they
7 came to light in any commercial product. So for me a
8 nasal formulation that demonstrates, that delivery needs
9 to get to a point where it's a product that is being
10 approved for use and is therapeutically active, has the
11 quality required to be reproduced, be manufactured, and
12 is safe to use. This is describing a system, the Gwozdz
13 or "Gwozdz" --

14 THE WITNESS: Sorry, I am not waving at
15 you. I am trying to get the lights back on.

16 A. And that's what it's saying. Can I say that
17 this would end up in a product on the market? No, I
18 couldn't say that it definitely would.

19 Q. (BY MR. LANDMON) Let's look back at your
20 declaration, go to page 128. Do you see you have a
21 discussion of the Meezan reference? Do you see that?

22 A. I do.

23 Q. Do you see in paragraph 212 you mention that
24 the authors of Meezan are Elias Meezan, Dennis Pillion,
25 and Edward Maggio? Do you see that?

1 A. I do, yeah.

2 Q. Okay. And you're aware that Edward Maggio is
3 also an inventor of the three patents at issue in the
4 IPR proceedings?

5 A. I am aware of that, yes.

6 Q. And in paragraph 212, you explain that Meezan
7 is directed to nonirritating, nontoxic compositions
8 providing enhanced bioavailability and more specifically
9 to alkyl glycosides or saccharide alkyl ester
10 compositions for delivery of therapeutic agents to a
11 subject, right?

12 A. I am.

13 Q. And you would agree that Meezan discloses
14 penetration enhancers that were use useful for nasal
15 formulations of drugs, right?

16 MR. TOBIN: Objection to form.

17 A. I mean, Meezan does disclose penetration
18 enhancers that appear to enhance the delivery of a
19 biologically active in the examples across various
20 routes, including the eye and the nose.

21 Q. (BY MR. LANDMON) Do you have the Meezan
22 reference in your binder?

23 A. Well, I thought I had the Gwozdz, but I
24 didn't. Let me -- so I have Exhibit 1010.

25 Q. Okay. Great.

1 MR. LANDMON: And, Lance, if I can ask
2 you to pull up tab 18 really for my benefit.

3 (Exhibit 1010 marked.)

4 Q. (BY MR. LANDMON) Dr. Brown, you're welcome to
5 look at the screen, but it is Exhibit 1010 we're going
6 to ask you about.

7 A. Okay.

8 Q. Let me know when you have it up on your screen
9 or if you're going to use your paper version.

10 A. I have it up on the screen.

11 Q. Okay. So if I can get you to turn to page 5
12 of the PDF. Let me know when you're there.

13 A. Yeah, I'm there.

14 Q. All right. Do you see the section entitled,
15 Summary Of The Invention? It starts with paragraph
16 numbered 4.

17 A. Yeah.

18 Q. Okay. And do you see the first sentence there
19 says that, The present invention is based, in part, on
20 the development of a therapeutic composition containing
21 a drug enhancing agent useful for increasing the
22 absorption and bioavailability of the drug, while at the
23 same time avoiding various adverse toxic affects of the
24 drug? Do you see that?

25 A. I do.

1 Q. And then a few sentences down, but in the same
2 paragraph there's a sentence starting with, Accordingly.
3 Do you see that?

4 A. In particular one advantage -- oh, after
5 NOAEL. Accordingly, the present invention provides,
6 yeah.

7 Q. Yes. So there it says, Accordingly, the
8 present invention provides compositions, including alkyl
9 glycosides and/or saccharide alkyl esters and a
10 therapeutic agent. Do you see that?

11 A. I do.

12 Q. And there's a parenthetical after therapeutic
13 agent, right?

14 A. There is.

15 Q. And the first example listed is small molecule
16 organic drug molecules. Do you see that?

17 A. I do.

18 Q. So Meezan disclosed that its penetration
19 enhancers could be used in formulations including small
20 molecule organic drug molecules. You agree with that,
21 right?

22 A. No, I wouldn't.

23 Q. Okay. So you disagree with what that says
24 right there?

25 A. I disagree in the context of what the whole

1 document is about where later the molecular weight
2 ranges are defined that are considered to be small,
3 which is, you know, the 1,000 mark. So I think small
4 molecular organic drug molecules in that molecular
5 weight range with the context of everything else is one
6 thing, but I think you have to read the whole -- whole
7 document to understand what they mean by small molecule
8 organic drug molecules. You know, equally as you do
9 when they're talking about low molecular weight
10 peptides, as exenatide in the GLP-1 inhibitors, and then
11 much larger ones like proteins in nonpeptide
12 therapeutics.

13 Q. Okay. So let's turn back to your declaration
14 again on the '786 patent to page 130.

15 A. I am there.

16 Q. And do you see you have a section entitled,
17 The Combination Fails to Disclose Every Element of the
18 Challenged Claims? Do you see that?

19 A. Sorry. Can you tell me the --

20 Q. Sorry. Page 130.

21 A. Yeah.

22 Q. And then at the bottom, there's a section
23 entitled, The combination --

24 A. Oh, yeah. Sorry. I was looking in the text
25 rather than the headers.

1 Q. Yeah. And in this section you address two
2 issues. You address that, in your opinion, Gwozdz and
3 Meezan do not disclose n-DDM, and you discuss that
4 Gwozdz includes water in the disclosed formulations. Do
5 you agree with that?

6 A. I think because Gwozdz talked about various
7 types of formulations, yeah, including nonaqueous and
8 aqueous.

9 Q. And these are the only two elements of the
10 challenge claims of the '786 and '414 patents that you
11 opine are not disclosed in Gwozdz and Meezan, right?

12 MR. TOBIN: Objection, form.

13 A. When you say "the only two," what they are --
14 they are the fact that in terms of the claims, I am
15 stating that n-dodecyl-beta-D-maltoside is in the '786,
16 and I don't believe Gwozdz or Meezan disclose that
17 n-DDM.

18 Q. (BY MR. LANDMON) Right. And other than the
19 n-DDM and then the issue that -- where you assert that
20 Gwozdz includes water in the disclosed formulations, you
21 don't identify any other elements of the claims of the
22 '786 or '414 patents that are not disclosed in Gwozdz
23 and Meezan. Is that fair?

24 A. I am just going to go to the construction of
25 the claims. Yeah, they're the two areas I focused on in

1 my declaration.

2 THE WITNESS: Uh-oh. Oh, no, he's
3 moving.

4 MR. LANDMON: Sorry, can you hear?

5 THE WITNESS: Yeah, no. Sorry, I thought
6 you froze, but you haven't.

7 MR. LANDMON: No.

8 Q. (BY MR. LANDMON) And we discussed before, the
9 '546 patent doesn't claim n-DDM, so you have only opined
10 that the '546 patent -- strike that. Let me start over
11 again.

12 We discussed before, the '546 patent doesn't
13 claim n-DDM. So for your declaration for the '546
14 patent, you are focused solely on the fact that Gwozdz
15 includes water with respect to those claims, right?

16 MR. TOBIN: Objection to the form.

17 Q. (BY MR. LANDMON) Let me make that question
18 easier because that was really too hard of a question.

19 You have not opined that Gwozdz and Meezan do
20 not disclose DDM as recited in the claims of the '546
21 patent, right?

22 A. Sorry, can you just give me a second?

23 Q. Uh-huh.

24 A. I think, yeah, my declaration on the '546 is
25 around -- is principally around the aqueous nature and

1 the water levels present on the description in Gwozdz.

2 Q. Okay. So let's talk about your opinions that
3 Gwozdz and Meezan do not disclose n-DDM. First I want
4 to turn to page 152 of your declaration. Let me know
5 when you're there. Sorry. Declaration on the '786
6 patent.

7 A. Yeah, I'm there.

8 Q. Okay. And do you see you have a subsection
9 heading saying, The "penetration enhancers" language in
10 Gwozdz-PCT language was added in 2009? Do you see that?

11 A. I do.

12 Q. So it's your opinion that the Gwozdz
13 provisional application did not have a disclosure of
14 penetration enhancers. Is that right?

15 A. I think what my opinion is, the key reference
16 of penetration enhancers doesn't appear in the 2008
17 provisional. It occurs in the 2009.

18 Q. Right. So let's look back at the 2008
19 provisional.

20 MR. LANDMON: Lance, I am going to ask
21 that you bring back up tab 16, which is Exhibit 1064.

22 A. Yeah, I'm there.

23 THE WITNESS: He's not moving.

24 THE REPORTER: Chad just disappeared.

25 MR. TOBIN: Let's go off the record.

1 (Break from 2:49 p.m. to 3:03 p.m.)

2 Q. (BY MR. LANDMON) So, Dr. Brown, we were
3 talking about the Gwozdz provisional application. And I
4 guess let me just clarify first. Do you have that in
5 front of you on your screen, Exhibit 1064?

6 A. I do.

7 Q. Okay. I think I had done this already. But,
8 sorry, if I can get you to skip ahead a couple pages to
9 page 3, do you see it starts with the Background of the
10 Invention?

11 A. Page 3.

12 Q. You guys are quiet now.

13 MR. TOBIN: Counsel, maybe you want to
14 clarify which page 3 you're talking about.

15 Q. (BY MR. LANDMON) Page 3 of the PDF.

16 A. Okay. Sorry. Yeah. Background of the
17 Invention, I'm there.

18 Q. And then it goes on for the next few pages,
19 three to -- three and a half pages on the background.
20 Do you see that?

21 A. Yeah.

22 Q. And the background section discusses what was
23 disclosed in various prior art articles and patent
24 publications that a POSA would have considered relevant
25 for lipophilic drug formulation, right?

1 A. Yeah. There are certainly some examples in
2 there.

3 Q. And if we go to -- it's page 5 of the PDF,
4 which is also marked page 5 at the bottom, but it's
5 marked page 3 at the top to make everything very
6 confusing.

7 A. I've got it.

8 Q. Okay. And on that page -- sorry, let me see
9 what paragraph. If you look at the bottom of that page,
10 do you see a paragraph that starts with, Similarly, U.S.
11 Patent No. 6,962,691? Do you see that?

12 A. I do.

13 Q. Okay. Is it okay if I refer to that as the
14 '691 patent?

15 A. Sure.

16 Q. Okay. Have you considered the '691 patent as
17 part of your opinions in the case?

18 It's not, to my knowledge, listed in your list
19 of exhibits.

20 A. Okay. I will -- so it's not to your
21 knowledge, and I cannot find it in my list.

22 MR. LANDMON: So if I can ask Lance --

23 A. Sorry, do you know the name of the -- oh,
24 you're going to bring it up, aren't you? Sorry.

25 Q. (BY MR. LANDMON) Yeah.

1 A. I can tell you if I've come across it
2 somewhere else, I guess.

3 Q. Okay.

4 MR. LANDMON: So, Lance, if you can pull
5 up tab 17, but I am also going to ask that you mark that
6 as Exhibit 1074.

7 (Exhibit 1074 marked.)

8 A. No. Yeah, all good. I don't recall ever
9 seeing it.

10 Q. (BY MR. LANDMON) And the title of this patent
11 is entitled, Topical Spray Compositions, right?

12 A. It is.

13 Q. And the abstract mentions that it's directed
14 to a topical, medicinal spray composition. Do you see
15 that?

16 A. A topical, medicinal spray, yeah.

17 Q. And do you see in the second sentence, it
18 references that the composition comprises at least one
19 medicament? Do you see that?

20 A. I do.

21 Q. And then it goes on to say, The composition
22 may further comprise at least one permeation enhancer.
23 Do you see that?

24 A. I do.

25 Q. So the '691 patent is directed to a liquid

1 sprayable pharmaceutical formulation containing a drug
2 substance in various excipients. Do you agree with
3 that?

4 MR. TOBIN: Objection, lacks foundation.

5 A. The composition of the invention may further
6 comprise at least one permeation enhancer, at least one
7 solubilizer, at least one plasticizer, and at least one
8 water soluble additive. A metered dose of the
9 composition can be sprayed on a topical site.

10 MR. TOBIN: Dr. Brown, are you reading to
11 yourself or to us?

12 THE WITNESS: No, no, sorry.

13 A. I've just gone through it. That would appear
14 to be, from my reading of that abstract only, a skin
15 formulation.

16 Q. (BY MR. LANDMON) And spray that to the skin?

17 A. Yes.

18 Q. Okay. And you see that it discloses
19 permeation enhancers, right? We already discussed that?

20 MR. TOBIN: Objection, lacks foundation.

21 A. Well, in the abstract it says at least one
22 permeation enhancer.

23 Q. (BY MR. LANDMON) Okay. And if we turn to
24 page 3 of the PDF, and I am going to ask you to look at
25 column 3, which is the left-hand column on that page.

1 Do you see that it defines permeation enhancers?

2 MR. TOBIN: Objection, lacks foundation,
3 relevance.

4 A. Sorry, I am not there yet. I am just skimming
5 through -- skimming through page 2.

6 Q. (BY MR. LANDMON) Okay.

7 A. So I have not seen it before, so. Yeah, it's
8 definitely for skin.

9 I am now on column 3. Did you say column 4?

10 Q. No, column 3. There's a definition of
11 permeation enhancers. Do you see that?

12 A. I do.

13 Q. Can you read that to yourself?

14 MR. TOBIN: What lines, Counsel?

15 THE WITNESS: 10 to 16.

16 MR. TOBIN: Thank you.

17 A. Yeah, I have read that.

18 Q. (BY MR. LANDMON) So do you agree that the
19 '691 patent discloses the use of permeation enhancers to
20 increase absorption of drugs through the skin?

21 MR. TOBIN: Objection, lacks foundation.

22 A. What it states is "refers to a component used
23 to enhance the penetration rate of drugs through the
24 skin, preferably by temporarily diminishing the
25 impermeability of the skin." So that's what it says

1 that I am reading.

2 Q. (BY MR. LANDMON) And do you agree that the
3 '691 patent explains that surfactants were one known
4 type of permeation enhancer?

5 MR. TOBIN: Objection, lacks foundation.

6 A. I mean, that patent describes surfactants as a
7 dermal -- surfactant is an example of dermal penetration
8 enhancers, specifically for dermal.

9 And dermal has a dead layer of skin across it
10 called the stratum corneum. The nasal mucosa doesn't.
11 And so skin is known to be the least permeable membrane
12 with the stratum corneum intact compared to most routes
13 of delivery. It's an area I also have studied and
14 developed products in.

15 And the product in my previous research you
16 asked me about, which was talking about hyaluronic acid,
17 if you recall back in the -- when you were asking me
18 about my experience, that was an excipient we looked at
19 as a permeation enhancer/sustained release agent for
20 many routes of delivery, including the skin. And a
21 product came to market that I was involved in called
22 Solaraze, which contained hyaluronic acid, which was
23 the -- just to link it back, was the excipient that was
24 claimed to be a penetration enhancer that's resulted in
25 additional clinical trials because you had to show it

1 was essential.

2 The other list of permeation enhancers like
3 lipophilic solvents -- well, they can be there for any
4 reason, not just penetration enhancers. Menthol is a
5 sensory signal and is often used in formulation to give
6 a signal that the skin product is working. Fatty acid
7 esters and polyhydric alcohols are also -- alcohols, not
8 arseholes -- alcohols -- sorry -- are used as a soluble
9 enhancer. They can also aim with the feel and the
10 aesthetics.

11 Q. (BY MR. LANDMON) Let's turn back to your '786
12 patent declaration and I am going to turn you to page
13 131. Let me know when you're there.

14 A. I'm there.

15 Q. And this section really starts on page 130 and
16 it sets forth your opinion as to why the Gwozdz-PCT and
17 Meezan do not disclose n-DDM. Do you see that?

18 A. I do, yeah, on the top of page 131.

19 Q. And in paragraph 219, which is on page 131 and
20 goes over to 132, you opine that the n prefix refers to
21 the fact that the dodecyl moiety is linear, right?

22 A. I do.

23 Q. You then show a figure on the next page, top
24 of page 132, that breaks n-DDM down into its
25 subcomponents, which has n-dodecyl on the right,

1 correct?

2 A. Yes.

3 Q. And in paragraph 220, you then go on to say
4 that, as shown in the skeletal formula above, the
5 dodecyl chain of the n-DDM molecule is linear, not
6 branched. Do you see that?

7 A. I do.

8 Q. And we discussed this earlier, but if the
9 alkyl moiety in the skeletal formula in your report had
10 12 carbons in a branch structure, its IUPAC name would
11 not include dodecyl at all, right?

12 MR. TOBIN: Objection to form.

13 A. No, that refers there to n-dodecyl. So I'm
14 just looking at what it said. You're saying dodecyl.
15 There's no description of an IUPAC naming for variations
16 around that.

17 Q. (BY MR. LANDMON) Right. And if the alkyl
18 moiety on the skeletal formula in your report had 12
19 carbons in a branch structure, the IUPAC name would not
20 include dodecyl at all, right?

21 A. I think when we talked about that before, that
22 was my understanding of the IUPAC. But as I said, I'm
23 not sure how IUPAC worked in 2008, '09 at the time, but
24 certainly through the way it was worked through, you
25 would expect the branches to be labeled and the

1 continuous chain have to be labeled based on the number
2 of carbons.

3 Q. So if we turn to paragraph 269 of your
4 declaration, which is --

5 A. Did you say page -- oh, yeah, paragraph 269.

6 Q. Yeah. It's on page 169.

7 A. Yeah. Sorry.

8 Q. So you state there that, Meezan teaches to use
9 "highly branched" alkyl glycosides rather than linear
10 alkyl glycosides like n-DDM, right?

11 A. I do.

12 Q. And you say the same thing in other paragraphs
13 of your report as well?

14 A. I do.

15 Q. For example, in paragraph 272 --

16 A. Yeah. Sorry.

17 Q. No, no. It's -- one second, I'm sorry. Okay.

18 So in paragraph 272, you have a similar
19 discussion, and then in the middle you have an indented
20 sentence from Meezan that is coming from Meezan 149,
21 right?

22 A. Yeah, paragraph 149, yeah.

23 Q. Yeah. Sorry. Exhibit 1010 Meezan, and
24 paragraph 149, right?

25 A. Yeah, I do.

1 Q. Okay.

2 I am not frozen. I am just looking at
3 something else. Sorry.

4 A. It's fine.

5 MR. TOBIN: Counsel, I appreciate the
6 clarification.

7 THE WITNESS: We've had a lot of freezes.

8 MR. LANDMON: Yeah. I got confused
9 because I was looking for paragraphs instead of pages.

10 Q. (BY MR. LANDMON) So if you turn over the page
11 to page 172, do you see that you have a diagram that's
12 laid out there that purports to show different species
13 of dodecyl maltoside? Do you see that?

14 A. I do.

15 Q. And you don't cite anything for this figure
16 that you have set forth there, right?

17 A. No.

18 Q. Did you create this diagram?

19 A. Did I personally create it, no. Did I look at
20 it and go through some iterations, yes.

21 Q. Was it prepared by counsel for you?

22 A. I honestly can't remember, but I would assume
23 so, yes. It was certainly part of the drafting process
24 from my original draft to explain the different isomers
25 and what -- I found it useful to explain not only the

1 end, but the beta and alpha and the D and L.

2 Q. Let's now turn to Meezan. I can't remember,
3 is that a document you had in your binder?

4 A. I have Exhibit 1010.

5 MR. TOBIN: Counsel, before we get there,
6 just on the real-time, just so we don't have an issue
7 later, DNL, I think it was "D and L."

8 THE WITNESS: Yeah, it was D "and" L.
9 Sorry.

10 THE REPORTER: Thank you.

11 THE WITNESS: That's me being northern.

12 MR. TOBIN: Forgive the interruption,
13 Counsel. Please proceed.

14 MR. LANDMON: No worries.

15 Q. (BY MR. LANDMON) So it's Exhibit 1010 is
16 Meezan. Do you have that in front of you?

17 A. I do, yeah.

18 Q. Okay.

19 A. I am actually finding it easier to look on the
20 screen if that was possible, but it's a bit bigger. I
21 can zoom in for an old man's eyes.

22 Q. Okay. We can have that brought up.

23 A. Okay.

24 MR. LANDMON: That is -- I think it's tab
25 18, Lance.

1 ZOOM TECH: It's still in the folder.
2 You should be able to pull it up.

3 Q. (BY MR. LANDMON) Dr. Brown, I think all you
4 have to do is --

5 A. I've got it up. Thank you.

6 Q. Oh, you have it. Okay. Perfect.

7 Okay. So we were talking how your report,
8 your declaration cites paragraph 149 in Meezan. So why
9 don't we go to that paragraph. It's on page 17 of the
10 PDF. Let me know when you're there.

11 A. I am on 149.

12 Q. Okay. And do you see it relates to Example 2,
13 and it starts with statements saying, Stability of the
14 alkyl glycoside depends, in part? Do you see that?

15 A. I do.

16 Q. And do you see later in that sentence it
17 refers to the highly branched alkyl chains including DDM
18 that you cited to?

19 A. Yeah. I can see that.

20 Q. And that's what you rely on for your opinions,
21 correct?

22 And let me clarify all this. Paragraph 149 of
23 Meezan is what you rely on for your opinions that Meezan
24 teaches the use of highly branched alkyl glycosides
25 rather than linear alkyl glycosides, right?

1 A. I am just looking back to my declaration.

2 MR. TOBIN: I will have an objection, but
3 you can continue.

4 THE WITNESS: Sorry.

5 A. So, yeah, that's the 149 paragraph in Meezan
6 that I have taken that first sentences out up to
7 stabilizing effects.

8 Q. (BY MR. LANDMON) And that's what you rely on
9 for your opinion that Meezan teaches to use highly
10 branched alkyl glycosides rather than linear alkyl
11 glycosides like n-DDM, right?

12 MR. TOBIN: Objection, form.

13 A. Well, if we go through Meezan, I think there's
14 other evidence that TDM appears to have better effects
15 and in the Meezan patent on the other examples. And in
16 the context of the patent, there's wording here that
17 describes others highly branched, and the patent is
18 around principle -- I think he attaches dodecyl and
19 decyl maltoside in the generic form and how they work in
20 the delivery of biologics across the various membranes.
21 So I think it would be truer to say it's the whole
22 context of the patent that informed my decision. But
23 there is specific -- there is a mention there. But
24 there's that mention there and also the descriptions
25 around the examples relating back to that.

1 Q. (BY MR. LANDMON) And you rely on paragraph
2 149 of Meezan to teach a POSA that highly branched alkyl
3 chains, including DDM, also have stabilizing effects,
4 right?

5 A. Again, it's the context of the whole thing.
6 You have your 12 and 4 n, which -- and I have already
7 talked about variation isomers. They are silent on the
8 use of n in terms of stating they're linear. And as you
9 increase up the number of carbons, they are -- there's
10 more isomers available. And the isomers are, with the
11 exception of the linear one, are all highly branched.

12 So, again, I am going to answer it the same
13 way. It's -- you can't take that one sentence out of
14 isolation. That certainly says that they're highly
15 branched, but there's also, you know, the context of the
16 fact that it's -- Meezan is silent to the use of n
17 anywhere.

18 MR. LANDMON: Lance, if I can have you
19 pull up tab 19 and have you mark it as Exhibit 1075.

20 (Exhibit 1075 marked.)

21 Q. (BY MR. LANDMON) Dr. Brown, let me know when
22 you have that open on your screen.

23 A. I have it up on my screen.

24 Q. Dr. Brown, what I am handing you is an
25 amendment that occurred during the prosecution history

1 for the Meezan patent. As you see at the bottom, it's
2 dated August 13, 2007.

3 You didn't review the file history of Meezan
4 when you formed your opinions in these IPRs, right?

5 A. Not that I -- I can't recall doing so.

6 Q. And if you turn to page 3 --

7 A. Is that page 3 of the PDF?

8 Q. Sorry. It's page 5 of the PDF. Sorry. Let
9 me back up. Let's start on page 3 of the PDF. Do you
10 see it's entitled, Amendment?

11 A. Amendments to the specification? Is that what
12 you mean?

13 Q. Yes.

14 A. Yeah, okay.

15 Q. So you see that the Meezan specification has
16 been amended? Do you see that?

17 MR. TOBIN: Objection, lacks foundation.

18 A. Well, that's what it says, yeah.

19 Q. (BY MR. LANDMON) And then if you start on the
20 next page, page 4 of the PDF, you see that it's entitled
21 "Amendments to the Specification" and then keeps going
22 for a few pages?

23 A. Yeah.

24 Q. And if we go to the top of page 6 of the
25 PDF -- let me know when you're there.

1 A. Where it says, please replace paragraph 0117?

2 Q. Yeah, with the following amended paragraph.

3 Do you see that?

4 A. Yeah.

5 MR. TOBIN: Counsel, to save time, will
6 you give me a running objection on foundation?

7 MR. LANDMON: Sure.

8 MR. TOBIN: Okay. Running objection on
9 this exhibit as it lacks foundation.

10 Q. (BY MR. LANDMON) So you see that amendment
11 that was made to paragraph that's numbered 117 here? Do
12 you see that?

13 A. I do.

14 Q. Okay. And does this look familiar as
15 corresponding to the paragraph 149 of the published
16 Meezan reference that you rely on?

17 MR. TOBIN: Objection, relevance.

18 A. Yes. It's got struck through some words.

19 Q. (BY MR. LANDMON) Yeah. And in particular,
20 what has been struck through is "branching" is replaced
21 with "length of the alkyl chain." And then other highly
22 branched, the "highly branched" is replaced with "long
23 alkyl chains including DDM." Do you see that?

24 A. I do.

25 Q. So the highly branched alkyl chains including

1 DDM language that you relied on in your declaration was
2 changed and actually reads "long alkyl chains including
3 DDM," right?

4 MR. TOBIN: Objection.

5 A. No, because I didn't say I relied upon it. I
6 said it formed -- formed part of my understanding of
7 Meezan, which included the lack of the n descriptor.

8 Q. (BY MR. LANDMON) Yeah. And, I mean, I wasn't
9 trying to say that you only relied on one thing. But
10 you do rely in paragraph 272 and in other parts of your
11 declaration on paragraph 149 in Meezan, correct?

12 A. I certainly have used that in coming to my
13 conclusions.

14 Q. In fact, in paragraph 272, you not only
15 italicize, you bold and underline the words "highly
16 branched," right?

17 A. Yeah, to highlight the words.

18 Q. And those words have and were in the prior art
19 changed from highly branched to long alkyl chains. Do
20 you see that?

21 MR. TOBIN: Objection, mischaracterizes
22 the document.

23 A. Well, in what I'm looking at and the
24 amendment, branching has been changed to length and
25 highly branched has changed to long. They -- there's no

1 other additions in there around the n form, you know,
2 the iso form, the neo form. It's just got the general
3 wording of tetradecylmaltoside and dodecyl maltoside
4 with the change around "long" to -- from "highly
5 branched."

6 Q. (BY MR. LANDMON) And the word "long" implies
7 that Meezan was referring to a straight-chain dodecyl
8 moiety, correct?

9 MR. TOBIN: Objection, form.

10 A. In the context of me and the word "long" --
11 because this is the first time I've seen "long"
12 introduced, and it was "highly branched" before. So I
13 guess what I would need to do is look at where else --
14 if where else they've used long. I mean, long -- I
15 don't really know what long means as it comes up now.
16 Sorry, I can't answer that question.

17 Q. (BY MR. LANDMON) Long could imply that Meezan
18 is referring to a straight-chain n-dodecyl, right?

19 MR. TOBIN: Objection, form.

20 A. Well, I don't believe so, because if they were
21 referring to a long chain n-dodecyl, they would have
22 said n-dodecyl surely.

23 Q. (BY MR. LANDMON) Well, it says "long" alkyl
24 chains instead of "highly branched," which is what you
25 were relying on when you bolded, italicized, and

1 underlined the words. Isn't it possible that the long
2 of Meezan refers to a straight-chain dodecyl moiety or
3 an n-dodecyl?

4 MR. TOBIN: Object to form.

5 A. And, again, I guess my answer to you is they
6 don't use the word "n." And we've already been through
7 the different ways of labeling. I can't tell you why
8 they've removed "branched," but I just can't assume from
9 this -- the document that you've said without reading
10 the whole context and the -- you know, the context of
11 why it was changed what they were trying to achieve.

12 Q. (BY MR. LANDMON) So you have no opinion in
13 this matter as to what Meezan discloses in light of the
14 amendments to the specification, because you haven't
15 considered those. Is that correct?

16 A. No.

17 MR. TOBIN: Objection to the form.

18 A. No, I'm not saying that. What I said was this
19 formed and helped to inform my decision, my opinion
20 around what Meezan was saying in the aqueous
21 formulations with biologics that it was stating, and it
22 doesn't state n. And even with this change, it still
23 doesn't say n, as far as I can see, unless there was
24 another change somewhere else you're not telling me
25 about.

1 Q. (BY MR. LANDMON) But you don't understand
2 what this change meant. I asked you what this change
3 meant and whether it could have meant that is was
4 referring to a straight-chain n-dodecyl. And you said,
5 I don't know. I would need to consider all the changes.
6 I just want to confirm that you don't know because you
7 didn't consider the changes to the specification of
8 Meezan, correct?

9 MR. TOBIN: Objection, relevance.

10 A. Well, I think I've already said that I hadn't
11 seen this before. I have already said that I came
12 together with my opinion on reading the whole patent.
13 What you've given me here is the change of three words,
14 which I definitely used as a reason why they were
15 talking about branched. But my opinion, as it stands at
16 the moment, is because they haven't used the n to
17 clearly state it's linear. And we've been through this
18 before, but they are using the general terms dodecyl
19 maltoside. It doesn't give me any cause to believe that
20 what may or may not have happened in terms of what --
21 this now means n, because if they meant n, surely they
22 would have used n.

23 Q. (BY MR. LANDMON) You agree that Meezan
24 discloses the use of alkyl glycosides, including dodecyl
25 maltoside as penetration enhancers, right?

1 A. I agree that the form of dodecyl maltoside --
2 and it's on page 170 of my declaration along 270 --
3 actually, the reference of Meezan, sorry, covers
4 dodecyl maltoside DDM alpha-D, beta-D and micro-D.
5 Nowhere does it specify, even with this change
6 n-dodecyl-beta-D-maltoside. And as that's fundamental
7 to the two documents we've been talking about, to me,
8 that's an important difference.

9 Q. You agree that Meezan discloses the use of
10 dodecyl-beta-D-maltoside, right?

11 A. I do. On paragraph 56 -- 156 and 157 I say in
12 my declaration.

13 Q. So let's turn back to Meezan, Exhibit 1010.
14 Do you still have that in front of you?

15 A. I will do shortly.

16 Q. Okay. Let me know when you're there.

17 A. I'm there.

18 Q. All right. If you could turn to -- it's page
19 12 of the PDF, paragraph 92. And do you see at the
20 bottom of that page, it references a Hovgaard reference?
21 Do you see that?

22 A. In Hovgaard-1, 1996.

23 Q. Yeah. And it carries over to the bottom of
24 that page to the top of the next page talking about some
25 of the disclosures in a study and then references a

1 Hovgaard-2. Do you see that?

2 A. Yeah, Hovgaard-2. Yeah, fourth line down on
3 9, on the left.

4 Q. And then it ends with a sentence saying,
5 Hence, an improved aspect of the invention is that the
6 surfactant increases the bioavailability of a drug to
7 the target tissues, organs, system, et cetera, as well
8 as increase drug stability. Do you see that?

9 A. I do.

10 Q. And in paragraph 92, DDM is identified as one
11 of two preferred alkyl glycosides, right?

12 MR. TOBIN: Objection to form.

13 A. It says, It has been shown that alkyl
14 glycosides, particularly alkylmaltosides and more
15 specifically, dodecylmaltoside (DDM) and
16 tetradecylmaltoside (TDM), stabilize insulin in solution
17 and prevent aggregation of the peptide.

18 Q. (BY MR. LANDMON) If we turn now, same
19 document, scrolling down to paragraph 156, it's on page
20 18 of the PDF. Let me know when you're there.

21 A. I'm there.

22 Q. And do you see paragraph 156 discusses some
23 testing that was performed on eye drop formulations,
24 including 0.5 percent DDM? That's not -- 0.5 percent
25 dodecyl-B-D-maltoside? Do you see that?

1 A. Insulin administered ocularly, yes.

2 Q. Yeah, and it references to Table 1?

3 A. Yes.

4 Q. Okay. And then if you go down to the next
5 paragraph, paragraph 157, Meezan discloses that these
6 studies show that alkylmaltosides with the longer alkyl
7 chains (or number of carbon atoms), e.g., dodecyl-,
8 tridecyl- and tetradecyl-beta-D-maltosides are more
9 effective. Do you see that?

10 A. I do.

11 Q. And paragraphs 156 and 157 that we just talked
12 about, Meezan expressly discloses the use of
13 dodecyl-beta-D-maltoside, right?

14 A. Meets and expressly discloses. Sorry, is that
15 what you said? Meets?

16 Q. No. That Meezan expressly discloses in
17 those two paragraphs, 156 and 157, the use of
18 dodecyl-beta-D-maltoside?

19 A. I am just going to go to example 3. So she
20 definitely -- sorry, "she" -- Meezan definitely has them
21 written down in 156 and 157, and there is a table of
22 data on Table 1 for eye delivery, various strengths of
23 dodecyl maltoside. Not the term that we've just talked
24 about, which is dodecyl-beta-D, but it's in the same
25 example where the concentration increases and the drop

1 in blood D-glucose values decreased to a point where 0.5
2 percent gives the best effect.

3 But later on, when you look at some of the
4 tables, I think a tetradecylmaltoside at .5 percent,
5 there is a different set of data.

6 Q. Let's focus on Table 1 first.

7 A. Okay. Sorry. Yeah.

8 Q. So we were describing that paragraphs 156 and
9 157 use dodecyl-beta-D-maltoside, right?

10 A. Table 1 says dodecyl maltoside.

11 Q. Right. And Table 1 is using dodecyl maltoside
12 as shorthand for dodecyl-beta-D-maltoside, right?

13 MR. TOBIN: Objection, form.

14 A. Well, it doesn't say it. It just says
15 dodecyl maltoside. And in the text it says,
16 dodecyl-beta-D-maltoside. I am just stating it as
17 I'm reading it.

18 Q. (BY MR. LANDMON) Right. And a POSA reading
19 paragraphs 156 and 157 and their reference to Table 1
20 would understand that when Table 1 says dodecyl
21 maltoside, it is shorthand for dodecyl-beta-D-maltoside,
22 right?

23 MR. TOBIN: Same objection.

24 A. I could see why -- I could see why you would
25 say that, and it would appear, because the data is

1 describing the experiment that's referenced above, that
2 that would be the case.

3 Q. (BY MR. LANDMON) So based on what we've just
4 reviewed, do you agree that Meezan discloses
5 dodecyl-beta-D-maltoside as a penetration enhancer?

6 MR. TOBIN: Objection to form.

7 A. Do I agree it specified it as a penetration
8 enhancer? It specifies that it enhances delivery and
9 decreases the blood glucose values, which I know all
10 about, for delivery via eyedrops, which I find a very
11 strange route.

12 I am not aware of any -- apart from
13 potentially students with vodka, I am not aware of many
14 dosage forms where they're trying to achieve systemic
15 delivery via the eye. But -- so I wouldn't like to say
16 what's going on there, but certainly the presence of
17 dodecyl maltoside is diminishing the blood glucose
18 levels, which, of course, is the actual effect of
19 insulin. So more insulin is getting across from
20 baseline, and that trend is going up, but there isn't a
21 0 percent. So I can't see the data where they've --
22 where they've just looked at it going down. When
23 they've not looked at dodecyl maltoside, which for me is
24 the classic definition of penetration enhancement, where
25 you compare with and without increasing strengths. And

1 the time of minus 20, minus 10 are going up and down a
2 bit. But there does seem to be a concentration effect.
3 But then it seems to be optimized at .375 percent.

4 So that would say in this experiment in the
5 eye .375 percent seems to be having a higher effect than
6 .25 or .5.

7 Q. (BY MR. LANDMON) So would a POSA understand
8 after reading paragraphs 156 and 157 and Table 1 of
9 Meezan that dodecyl-beta-D-maltoside is acting as a
10 penetration enhancer?

11 MR. TOBIN: Same objection.

12 A. I have answered the question. I am unaware
13 where -- I don't see the 0 percent. And there is no
14 linear response, but there is an effect of -- based on
15 strength of where the blood glucose goes down. So the
16 penetration of insulin apparently into the bloodstream
17 via a route -- because it's -- I'm not familiar with,
18 the blood glucose that it's measuring is going down, so
19 the insulin delivery to the bloodstream has been
20 enhanced.

21 Q. (BY MR. LANDMON) So does that mean that a
22 POSA reading paragraphs 156 and 157 and Table 1 would
23 understand that the dodecyl-beta-D-maltoside was
24 operating as a penetration enhancer?

25 MR. TOBIN: Same objection.

1 A. Again, it's within the context of defining a
2 penetration enhancer. As I've mentioned to you
3 previously, the change in strength may change the
4 solubility which may change the release, which can cause
5 enhanced absorption where it's purely a physical effect
6 and not penetration enhancement effect. There's no
7 solubility assessments of maximum thermodynamic
8 activity. There's no assessment about interaction. I
9 can't see the 0 percent or there may be minus 20, minus
10 10. It's trying to suggest that. So there's several
11 potential interesting observations from that data. And
12 if I was reviewing it, I would say before you could
13 clearly state anything was a penetration enhancer, you
14 need to do the controls and you need to consider
15 thermodynamic activity. And I believe a POSA would know
16 that.

17 MR. LANDMON: Lance, I am going to ask
18 you to bring up another tab, tab 20. And if you can
19 mark that Exhibit 1076.

20 (Exhibit 1076 marked.)

21 Q. (BY MR. LANDMON) Dr. Brown, let me know when
22 you've got that document in front of you.

23 A. I have it in front of me.

24 Q. So Exhibit 1076, Dr. Brown, is a declaration
25 of Dr. Edward Maggio filed in an application related to

1 the Meezan prior art reference. Have you reviewed this
2 before, this declaration?

3 A. I don't recall reviewing it.

4 Q. Okay. It's not in your materials considered
5 list, so I wasn't asking as a test.

6 You understand that Dr. Edward Maggio is an
7 inventor on the three patents at issue in the IPR
8 proceeding, right?

9 A. I do, yeah.

10 Q. So in this document, if we turn to paragraph 3
11 on the first page, he states that he's familiar with the
12 contents of the application, he's reviewed an Office
13 Action, and he understands the examiner has rejected
14 certain claims under 103 as obvious. Do you see that?

15 MR. TOBIN: Objection, lacks foundation.

16 A. I understand the examiner has rejected claims
17 7, 9 to 15, 17 and 18, as allegedly obvious over Meezan
18 in view of Lahat, et al.

19 Q. (BY MR. LANDMON) Okay. And if we go back to
20 paragraph 2, do you see there's a couple sentences
21 describing his background, and Dr. Maggio says at the
22 end he considers himself to be an expert in the field of
23 pharmaceutical chemistry, in particular, in the area of
24 pharmaceutical formulations? Do you see that?

25 MR. TOBIN: Objection, lacks foundation.

1 A. I do see that. I am reading it, yeah.

2 Q. (BY MR. LANDMON) And he has a PhD in
3 biochemistry. Do you see that?

4 A. Yeah, from the University of Michigan.

5 Q. And if you turn to the next page --

6 MR. TOBIN: Counsel, while there's no
7 pending question, I would ask, just so we have a clear
8 record, maybe ask if the witness is actually reading
9 something or testifying to it.

10 MR. LANDMON: Okay.

11 Q. (BY MR. LANDMON) If we could turn to the next
12 page, Dr. Brown, and take a look at paragraph 5 for me.
13 Why don't you read that to yourself.

14 Let me know when you're done reading that.
15 Are you done reading that paragraph, Dr. Brown?

16 A. I am, yeah. I am just trying to reference it
17 across to --

18 Q. I am not sure there's anything to reference
19 yet.

20 A. Right.

21 Q. So you see in this paragraph that
22 Dr. Maggio --

23 MR. TOBIN: Were you finished with your
24 last answer?

25 THE WITNESS: That's fine. Just keep

1 going. I will just come back to it.

2 Q. (BY MR. LANDMON) Do you see in paragraph 5,
3 Dr. Maggio, who is an inventor on the patents at issue
4 in these three IPRs and an inventor in Meezan, says that
5 the present invention, in other words, what's disclosed
6 in Meezan, is directed or is based on the discovery that
7 alkyl glycoside, dodecyl-beta-D-maltoside (also referred
8 to as n-dodecyl-beta-D-maltoside)? Do you see that,
9 where he says that?

10 MR. TOBIN: Objection to form, foundation
11 and hearsay.

12 A. You've read out what it says.

13 Q. (BY MR. LANDMON) Okay. So Dr. Maggio
14 characterizes the Meezan prior art reference as
15 disclosure of dodecyl-beta-D-maltoside it was referring
16 specifically to n-dodecyl-beta-D-maltoside, didn't he?

17 MR. TOBIN: Objection to form,
18 foundation, hearsay.

19 A. So what the question I was going to is he's
20 talking about the central nervous system.

21 Q. (BY MR. LANDMON) Okay.

22 A. And, particularly, the CSF. So maybe I'm
23 being deaf, but where is that described in Meezan?

24 Q. I don't know, Dr. Brown. I will let you take
25 a look at that in your spare time.

1 All I'm asking is that Dr. Maggio -- you agree
2 that Dr. Maggio equates dodecyl-beta-D-maltoside as
3 disclosed in Meezan as also referring to
4 n-dodecyl-beta-D-maltoside, right?

5 MR. TOBIN: Objection, misstates the
6 document and hearsay.

7 A. He states that the alkyl glycoside,
8 dodecyl-Beta-D-maltoside (also referred to as
9 n-dodecyl-beta-D-maltoside). When he says also referred
10 to, is he describing that that's how he is referring to
11 it, how it's defined in the document that he's
12 considering? It's a bit long descriptive in the moment,
13 but it certainly says dodecyl-beta-D-maltoside (also
14 referred to n-dodecyl-beta-D-maltoside). But I don't
15 understand the second part which is increases absorption
16 of therapeutic agents to the cerebral spinal fluid
17 when -- why is he making an observation on a document
18 that doesn't have that in it?

19 Q. (BY MR. LANDMON) All I was asking -- and
20 you've already confirmed -- is what he refers to the two
21 ingredients or not the two ingredients. That he equates
22 dodecyl-beta-D-maltoside to n-dodecyl-beta-D-maltoside.
23 But we can move on.

24 Let's look at to paragraph 7. If you could
25 read through paragraph 7 to yourself. Let me know when

1 you're done.

2 A. This is referring to Appendix A. Yeah.

3 Q. So you see in the second sentence there, he
4 says, Further, one would expect to observe a similar
5 increase in absorption by dodecyl-beta-D-maltoside for
6 other therapeutic agents, such as antiseizure agents.
7 Do you see that?

8 A. Yeah, I do. Yeah.

9 Q. And in your declarations in this IPR
10 proceeding, you've opined that based on Meezan and
11 Gwozdz, a POSA would not be motivated to use DDM as a
12 penetration enhancer in formulations containing
13 antiseizure agents like diazepam, right?

14 A. When having Gwozdz in front of you and going
15 to Meezan and reading Meezan, which talks all about --
16 in my opinion, highlights its use, as was also -- we
17 discussed in the chapter where I got a bit emotional,
18 that the use of enhancers for large molecular weight
19 stuff is often a requirement, what he's opined -- I
20 believe the word that you use -- that, further, one
21 would expect to observe a similar increase for other
22 therapeutics, such as antiseizure agents. He doesn't
23 specify what antiseizure agents, and he's giving an
24 opinion. I just need to look at -- so he's talking
25 about nasal administration by the CNS. I am looking at

1 the appendix.

2 MR. TOBIN: For the record, Counsel, just
3 because you're not in the room, I think the witness is
4 looking at Exhibit 1076 right now.

5 A. I thought that's what I was supposed to be
6 looking at, no?

7 Q. (BY MR. LANDMON) Yes.

8 MR. LANDMON: But thank you, Counsel.

9 A. I mean, looking at the practicalities of
10 the experiment, his formulation has
11 n-dodecyl-beta-D-maltoside, undecyl-beta-D-maltoside,
12 and propylene glycol and cyclodextrin and sodium tauro
13 -- Tauro, which is a bile salt. So he's got one, two,
14 three, four, five potential enhancers. He's not
15 reported any of the solubility effects, any of how they
16 work in isolation altogether. So I'm not sure -- he's
17 obviously written it, but I wouldn't have made those
18 claims. I mean, I think that experiment is very poorly
19 designed, and I wouldn't expect that of a POSA.

20 Q. (BY MR. LANDMON) Is it your opinion that
21 Dr. Maggio is not a POSA?

22 A. It's my opinion that that experiment --
23 because I don't know the context of why that experiment
24 was performed like that, so I can't speak to that. I
25 would just say in isolation in reading this document,

1 because that's all I've been given, I am interested to
2 know why they've looked at olfactory delivery with a
3 combination of potential enhancers, all of which have
4 their own risks and benefits. And I mean, my -- the way
5 I work is simple is best. He's gone the opposite way
6 with the five -- the bile salt, the cyclodextrin, the
7 propylene glycol and the two n-dodecyls and n-dodecyl
8 maltoside. I am not sure what this is telling me about
9 n-dodecyl-maltoside, but there's mixture.

10 Q. It's fair to say you disagree with
11 Dr. Maggio's opinions?

12 MR. TOBIN: Objection, lacks foundation.

13 A. I didn't say that. I just said I can't -- I
14 would need to understand more of why the experiment was
15 designed like this. What other experimentation was
16 performed behind it? I'm just saying that I find the
17 design of the experiment with the antibody HF
18 formulation -- because it's an antibody frame it's
19 delivering. There's no examples of antibodies, as far
20 as I recall, in Meezan. And it's a completely different
21 setup because they've used five different ingredients
22 rather than the aqueous. I mean, it doesn't even say
23 whether there's water in here and -- unless I've missed
24 it. They've used five different ingredients rather than
25 the one that was compared side by side in Meezan. So I

1 am not going to cast aspersions on Dr. Mezin's
2 expertise. I am just questioning, in my role here now,
3 that experiment, which is how you're giving me this,
4 because it's definitely after 2009.

5 Q. (BY MR. LANDMON) And just so we're clear,
6 Counsel didn't provide you with any of the prosecution
7 history from Meezan, including this document?

8 A. I haven't seen this document before.

9 Q. Okay. And Exhibit 1076, just so the record is
10 clear?

11 A. I haven't seen, as far as I recall,
12 Exhibit 1076 - 20 - Maggio Declaration.

13 Q. Let's move on. And another opinion you've
14 expressed in your declarations is that Meezan would
15 motivate a POSA to use TDM rather than DDM or any other
16 alkyl glycosides, right?

17 A. I think, yeah, that is my opinion.

18 Q. So if we turn to page 173.

19 A. Of?

20 Q. Sorry. That's always good. Your declaration
21 for the '786 patent.

22 Do you see paragraph 275?

23 A. Yeah.

24 MR. TOBIN: Counsel, before you ask, I
25 have a lot of documents open. Let me get there quickly

1 so I can be there with you.

2 MR. LANDMON: Yeah. Let me know when
3 you're ready.

4 MR. TOBIN: You said paragraph 275?

5 MR. LANDMON: Yeah, on page 173.

6 MR. TOBIN: Okay. Thank you, everybody.
7 I'm with you.

8 Q. (BY MR. LANDMON) So if you see there,
9 Dr. Brown, you opine there that if a skilled artisan who
10 already knew of Gwozdz-PCT happened upon Meezan and
11 considered its disclosures, you believe that a person
12 would have found that Meezan suggests using alkyl
13 glycosides with longer chains than 12 carbons (dodecyl)
14 as more efficacious options, in particular, branched
15 tetradecyl-maltoside (TDM, 14 carbons). Do you see
16 what?

17 A. I do.

18 Q. And you say, The figures, examples,
19 specification, and claims all point to TDM as the most
20 preferred option. Do you see that?

21 A. I do.

22 Q. And then on page -- sorry, in paragraph 276,
23 it starts at the bottom and then goes on to the next
24 page, on page 174, you note that Meezan discloses that
25 TDM has what you call the greatest effect, not DDM. Do

1 you see that?

2 A. I do.

3 Q. But you do agree, right, that Meezan
4 identified DDM, including dodecyl-beta-D-maltoside to be
5 an effective penetration enhancer?

6 MR. TOBIN: Objection, form.

7 A. As I said, I think Meezan identifies that TDM
8 performs better than DDM and has done some experiments
9 to demonstrate in those experiments that by comparison
10 TDM outperforms DDM in the aqueous systems that it
11 describes for large molecular weight molecules. I think
12 we've already been through the question about, you know,
13 what Meezan describes as DDM and TDM, as far as I
14 recall. But all I'm saying in that -- in that section
15 is that if a skilled artisan were to read that, that
16 they would likely read it, and if they came across it,
17 they would read it, they would appreciate that actually
18 this is for large molecular weight compounds and that
19 they would focus on TDM based on the data presented.

20 Q. (BY MR. LANDMON) So I understand your opinion
21 is that Meezan discloses that TDM is a better
22 penetration enhancer. But you also agree that Meezan
23 discloses DDM to be an effective penetration enhancer,
24 right?

25 MR. TOBIN: Objection to form.

1 A. I mean, DDM is used in the experiments. As I
2 have highlighted later, it has an effect. But I've also
3 explained later that there's a number of other
4 considerations in those experiments. So I am not
5 sure -- in the true definition of the penetration
6 answer, those are the investigations to undertake around
7 what all of the different ingredients that they've
8 looked at -- whether that be tetradecyl, dodecyl, decyl,
9 and what's going on with solubility and the ability for
10 the drug to leave that formulation.

11 What there isn't either here is whether those
12 decreases in, for example, Table 1 that we talked about
13 before or Table 2, is whether those decreasing levels
14 are purely down to a stability effect, because all it's
15 got in here is the kind of -- is absorption via those
16 routes being enhanced via the presence of those
17 materials. And all I'm saying is there's potential
18 other explanations. Say penetration enhancement is one
19 explanation, and there are other ones. And
20 interestingly, as the chain length increases, that will
21 affect the solubility, which will also impact the
22 release of drug from the formulation. It will also
23 impact its absorption across the biological membrane for
24 the nasal mucosa or the eye which will then affect the
25 effect it has. So that's a physical means of enhancing

1 delivery and not truly what we've been discussing and
2 the understanding of what's defined as a penetration
3 enhancer. And in the example, going back to the
4 previous thing by -- that we looked at, the previous
5 exhibit by the name of the person I didn't agree about
6 the design of the experimentation, the fact is they were
7 using bile salts and cyclodextrins that may have had a
8 similar effect. So I guess what I am clumsily trying to
9 say is there are a number of explanations around why
10 these factors might be observed, but in the context of
11 this, penetration enhancement is one of a number of
12 explanations which would require more investigation.
13 But looking at the context of this, the key experiments
14 are a driving force, solubility and stability. But as
15 the data stands at the moment, you know, TDM is
16 outperforming dodecyl maltoside in that claim level of
17 enhancement in this particular patent, and TDM is used
18 also in that system, as well as some others.

19 Q. (BY MR. LANDMON) Is it your understanding of
20 obviousness law that a POSA would only choose the
21 excipient to incorporate into a formulation that
22 performs the best?

23 A. Well, my problem with it is if a skilled
24 artisan -- I'm not sure why they would look at this and
25 take anything from it, based on Gwozdz, because of what

1 it explains and what it's doing. So my challenge here
2 is that I'm not sure a skilled artisan would -- even if
3 they came across it amongst the plethora of papers there
4 are, if they came across it, read it, why they would
5 even consider looking at it, because these are aqueous
6 formulations of large molecular weight drugs. They are
7 not the kind of -- those examples exemplified in Gwozdz.

8 So that's my opinion as it stands now, which I
9 think I've made clear in my opinion about why Meezan
10 doesn't really have any bearing because of what it says
11 about it and what it's used for.

12 Q. Let's turn again to your '786 patent
13 declaration at page 135. Let me know when you're there.

14 A. I am on 135.

15 Q. Okay. And do you see you have a section that
16 starts on that page, the heading says, Gwozdz-PCT
17 Includes Water in the Disclosed Formulations? Do you
18 see that?

19 A. Yeah.

20 Q. And if we turn a couple of pages forward --
21 it's the same section -- I just wanted to set the
22 section up -- to page 138, and in paragraph 228, you
23 explain in the context of claim construction, the
24 challenged claims recites a pharmaceutical solution
25 consisting of various components. Do you see that?

1 A. I do.

2 Q. And you opine that Dr. Donovan previously
3 offered opinions that the challenged claims should be
4 interpreted to require the presence of no water, even in
5 trace amounts. Do you see that?

6 A. I do.

7 Q. And you base your opinions about the water
8 content issues discussed in the declaration on your
9 understanding Dr. Donovan's claim construction arguments
10 from the district court litigation, right?

11 A. Yeah, that's Reference 239.

12 Q. I'm sorry, Reference 239?

13 A. Exhibit 2069.

14 Q. Oh, okay. Thank you.

15 You haven't expressed any of your own opinions
16 about whether consisting of in the challenged claims
17 should be construed to allow for the inclusion of small
18 amounts of water or not, right?

19 A. I think my opinion is that when you have a
20 composition including ethanol, as we've talked about
21 before, inherently within whatever the pharmaceutical
22 grade that's allowed that you use, there will be a level
23 of water ranging from point -- I guess .5 percent
24 depending on your really proof, which you're using in
25 pharmaceuticals and you don't have to drink. And then

1 you've got -- which is dehydrated, and then you have the
2 dehydrated, which is where there's a percent or so. So
3 there will -- in my opinion and in my experience, there
4 will be water in this formulation, both because of it in
5 the presence of ethanol, but because most formulations
6 will take on water during manufacture, during storage
7 potentially, and also during use. So you will have
8 water there in the end use situation.

9 And I guess does this misconceived opinion --
10 you know, in my opinion that, you know, something like
11 ethanol doesn't have a PH, but because -- because water
12 is present in part to a lot of it, there will be what is
13 called an apparent PH, which measures the hydrogen ions.
14 So I believe there is water present in anything that
15 contains ethanols and other excipients as well.

16 Q. I muted myself. Sorry about that.

17 Have you set forth in anyplace in your
18 declarations an opinion as to the claim construction, in
19 particular, with the words "consisting of" in the
20 claims?

21 A. Yeah, I believe I talk about that in -- if
22 we're looking at 276 -- it's on page 123.

23 MR. TOBIN: Counsel, again, just because
24 you're not in the room, he's flipping through the '786
25 patent declaration.

1 MR. LANDMON: I appreciate that. Thank
2 you, Counsel.

3 Q. (BY MR. LANDMON) So, Dr. Brown, you know, I
4 did read through this section. I see that you have a
5 discussion of consisting of. I see that you have
6 Neurelis's position from the district court on the top
7 of page 124. I see a discussion of Dr. Donovan's
8 opinion from the district court litigation on what
9 consisting of -- I guess what I don't see is your own
10 affirmative claim construction position on consisting
11 of. Is that fair?

12 A. I mean, I believe consisting of is -- my
13 opinion is the same as Neurelis's, which is the addition
14 of those particular components that when it says
15 consisting of, but I don't agree with the Padagis
16 construction because I believe that inherently that will
17 include other parts of that excipient as I've explained
18 when you asked me for an opinion that can include, for
19 example, water for ethanol, for benzyl alcohol. In my
20 experience on it, that will also be in reportable levels
21 of benzoic acid and benzaldehyde, which if you look at
22 the certificate of analysis, will be present there and
23 can be fundamental both in the forms of formulation
24 stability and delivery and also toxicity.

25 So I think consisting of is -- includes what's

1 included, but there will be other components a part of
2 it, and that's the point I'm making about why I believe
3 there will be small amounts of water, amongst other
4 things, in the -- in the compositions.

5 Q. So to the extent that your position on claim
6 construction is adopted and the Padagis position and
7 Dr. Donovan's position is not, would you agree that your
8 opinions on Gwozdz-PCT, including water in the disclosed
9 formulations, are then moot?

10 A. Well, no, because I think Gwozdz does
11 reference aqueous and nonaqueous in some examples.

12 Q. And is it your opinion that those nonaqueous
13 formulations still have water in them?

14 A. There's been no water added. But if they
15 contain ethanol, by definition there will be levels of
16 water contained in the ethanol.

17 Q. So you would then agree, if that construction
18 was adopted, that the Gwozdz disclosures do disclose the
19 claim formulations?

20 MR. TOBIN: Objection to form.

21 A. What I'm saying is Gwozdz is all about the
22 examples used and teaches about solutions that are
23 nonaqueous, yeah. Nonaqueous to me means there is not
24 any significant level. So if you have an aqueous
25 formulation, it means water is in the continuous phase.

1 So if you have an aqueous gel, it will be predominantly
2 water. If you have an oil and water emulsion, so a
3 cream, water will be in the continuous phase. That will
4 still be predominantly aqueous. If you have water in
5 oil, which in the UK and the US we call an oily based
6 cream that you would call an ointment in some cases,
7 there will be small amounts of water present in that.
8 So I think the terms aqueous and nonaqueous meet that
9 criteria when there is a dominant part of containment of
10 water in the aqueous system, but in a nonaqueous system,
11 inherently that may well include contain water levels.
12 So, ironically, in the US, your ointments can contain up
13 to 20 percent water, as far as I recall. In the UK,
14 they would be called water in oil emulsions, which are
15 still considered aqueous, but they still have a
16 significant part of water in them.

17 Q. (BY MR. LANDMON) So if your opinion on the
18 consisting of language, which I understand is to allow
19 some amounts of water in the formulation, if that is
20 adopted, then you would agree with me that Gwozdz
21 discloses formulations that are the formulations set
22 forth in the claims, right?

23 MR. TOBIN: Objection, mischaracterizes.

24 A. I think if you want to go to the claims, we
25 can talk through them. All I am saying is in the

1 definition of consisting of, that that doesn't exclude
2 things like water and oil, because they could be there,
3 as has been detailed in that table, which is Padagis's
4 construction.

5 Q. (BY MR. LANDMON) So then the ethanol that's
6 disclosed in Gwozdz would meet the claim limitation
7 under your position on what consisting of means,
8 correct?

9 MR. TOBIN: Objection, form.

10 A. What claim limitation? There's nowhere we're
11 talking about a claim, sorry.

12 Q. (BY MR. LANDMON) The ethanol claim
13 limitation.

14 MR. TOBIN: Same objection, form.

15 A. Yeah, which particular one?

16 Q. (BY MR. LANDMON) So let's turn back to -- we
17 were on page 135 of your '786 patent declaration. And
18 you have a lengthy -- sorry. Strike that.

19 You have a discussion on that page, continuing
20 to the next few pages, that in your opinion Gwozdz-PCT
21 does not disclose the ethanol under Dr. Donovan's
22 position in the litigation that the claims don't allow
23 for the presence of water. Is that an accurate summary
24 of your position there?

25 A. I didn't understand what you were saying,

1 because I was trying to follow it. Did you say 224 or
2 225?

3 Q. So it starts on paragraph 224, but it keeps
4 going for a number of paragraphs.

5 A. So all I'm saying, which is what I've been
6 continuing saying, is a skilled artisan would have
7 understood. Even at the dehydrated, there still will be
8 a level of water as part of the ethanol.

9 Q. And it's your position that the claims of the
10 patents at issue allow for the presence of water with
11 the use of the word consisting of. That's what you said
12 before, right?

13 MR. TOBIN: Objection, argumentative.

14 A. No, I didn't say that. What I've been saying
15 is what I've written, which is that consisting of
16 means -- what I believe it means, which will be that
17 inherently -- although there will be some water in the
18 ethanol -- even at its purest form, there will be water
19 there.

20 Q. (BY MR. LANDMON) Right. So then the
21 disclosure in Gwozdz of ethanol would meet the claim
22 limitations which claim a formulation consisting of,
23 amongst other ingredients, ethanol?

24 MR. TOBIN: Objection, form.

25 A. Well, the claim -- the claims include ethanol,

1 yeah, definitely.

2 Q. (BY MR. LANDMON) And it's your position that
3 the claims allow for some amount of water to be in the
4 ethanol, right?

5 A. It's my position that if ethanol is there,
6 there will be some water in the ethanol.

7 Q. So under your construction of consisting of
8 that allows for some water to be present, then you agree
9 with me that Gwozdz discloses ethanol under the claims,
10 right?

11 A. I think -- why don't you take me to the claims
12 you're specifically talking about.

13 Q. All right. Let's go back to page 10 then of
14 your '786 declaration.

15 A. Sorry, you asked me a question, which I was
16 trying to answer. And I said because you're talking
17 about Gwozdz.

18 Q. Yeah.

19 A. So we're not going back to that. I need to
20 back to -- is this my '786 declaration?

21 Q. Yeah. It's -- I mean --

22 A. I am just concerned about which document.
23 That's fine. Which document are we talking about?

24 Q. We're talking about, yeah, your '786 patent
25 declaration.

1 A. Yeah.

2 Q. And you have a position in here that we've
3 been talking about that Gwozdz-PCT doesn't meet the
4 claim limitations because, in your position -- in your
5 opinion, the ethanol disclosed there has some amount of
6 water, right?

7 MR. TOBIN: Objection to form.

8 A. Again, what I'm saying is consisting of
9 includes what's described in the composition, but, you
10 know, inherently there will be some water present in
11 ethanol. And I was particularly, as we've referred to,
12 is that Dr. Donovan's position seemed to be in the court
13 action, there wouldn't be any, unless I'm reading it
14 wrong. And what I'm saying is that there will be.

15 Q. (BY MR. LANDMON) And you agree that
16 Gwozdz-PCT then discloses ethanol in a composition under
17 your construction of the claim term, right?

18 MR. TOBIN: Objection to form.

19 A. Sorry, I don't understand that question.
20 Claim term? What claim term? Which specific claim?
21 There is claim 1, which talks about alcohols or glycols
22 with tocopherols and tocotrienols.

23 Q. (BY MR. LANDMON) I guess I am trying to
24 understand your opinion that starts on page 135 of your
25 declaration for the '786 patent. Your opinion is that

1 Gwozdz-PCT doesn't meet the claim limitation because it
2 discloses formulations having water, right?

3 A. My position on page 135, 224 says that
4 Gwozdz-PCT includes -- under that section Dr. Donovan
5 relies on Gwozdz-PCT to disclose solutions of
6 diazepam in Vitamin E, benzyl --

7 (Reporter clarification.)

8 A. -- Vitamin E, benzyl alcohol, and ethanol.
9 Gwozdz discloses that the preferred use of an ethanol
10 that is biocompatible in the sense that it is nontoxic
11 and does not cause any physiological and pharmacological
12 effects. Gwozdz goes on to state, the ethanol is
13 desirably 180 to 200 percent -- sorry -- 200 proof,
14 which is in the range of 90 to 100 percent ethanol.

15 Accordingly, Dr. Donovan is relying on
16 exemplary solutions of diazepam using 190-proof and
17 200-proof of ethanol.

18 A skilled artisan knows -- would appreciate
19 that a nonethanol component of that composition would
20 have been water. And it is not possible, as I go into
21 later, to even distill ethanol to remove it completely,
22 because it forms an azeotrope with a different melting
23 point, which means you just can't get rid of it. So
24 it's always there, even on the 200-proof. And even
25 dehydrated ethanol is not water-free.

1 Q. And if we turn to page 137 of your declaration
2 for the '786 patent --

3 A. Yeah.

4 Q. -- the last sentence in that paragraph talks
5 about, The full embodiment, copied below, expressly
6 states that the pharmaceutical solutions with
7 penetration enhancers, and in paren, the only disclosure
8 she cites in Gwozdz-PCT of a penetration enhancer)
9 include water as an added ingredient. Do you see that?

10 A. I do.

11 Q. And if we turn over to the next page, it then
12 says, The instant pharmaceutical solutions comprising a
13 therapeutic agent, one or more tocopherols and/or
14 tocotrienols and one or more alcohols and/or glycols can
15 also be formulated into a pharmaceutical composition for
16 injection by combining the instant pharmaceutical
17 solution, e.g., saline solution or water and a vitamin E
18 solubilizing agent such as Cremophor. Do you see this?

19 A. I do.

20 Q. So this passage that you cite to from Gwozdz
21 was explaining that the formulations were intended to be
22 administered via injection adding saline solution or
23 water, right?

24 A. Yeah, they don't give the ratios, but they're
25 combining there pharmaceutical solution with saline or

1 water -- it should be water-free injection, but yeah.

2 Q. And that was a formulation intended for
3 injection, not intranasally, right?

4 A. That was a formulation for injection, yes.

5 Q. And a POSA would have understood at the time
6 that the inclusion of water in an injectable or IV
7 solution is standard practice, right?

8 MR. TOBIN: Objection to the form.

9 A. A POSA would appreciate that the injection
10 needs to be aqueous in nature.

11 Q. (BY MR. LANDMON) And you would agree that
12 there isn't a need to include penetration enhancers for
13 an injectable formulation because the drug is directly
14 injected into the bloodstream, right?

15 A. Well, interestingly in this they talk about
16 penetration enhancers being included and humectants. So
17 I guess as they're so -- they're talking about
18 injection. There's different forms of injection, not
19 just intravenous. There's intradermal injection,
20 subcutaneous injection. If you inject intradermally,
21 for example, it's still stuck in the skin, so there may
22 well be a need for a penetration enhancer if you inject
23 it IV. But this doesn't just describe IV. Then --
24 then, yeah, I am not aware of any examples off the top
25 of my head that have penetration enhancers.

1 But, equally, as I've said before, in
2 pharmaceutical regulation, there are a number of
3 excipients present which will act -- will be
4 multifunctional. So they may well be being used as a
5 solvent -- as I said, a solvent especially in
6 suspensions. It controls the release, may enhance
7 diffusion, may enhance dissolution. It depends on your
8 definition. In certain injections, for intradermal, for
9 example, it might include a penetration enhancer which
10 will act as breaking down the skin tissue, such as
11 potentially salicylic acid. And in fact, intradermal
12 injections, because this is a bit nondescript, can be
13 aqueous or nonaqueous. I mean, I think your question
14 about IV is, generally speaking, you don't want to be
15 injecting lots of stuff that isn't compatible with the
16 body in an intravenous injection. But there are other
17 ones. You also get injections into the eye, into the
18 front, back, and side. Those injections can be
19 sustained release injections, which would be
20 fundamentally solid. So, yes, I can understand why all
21 those things are listed because there are so many
22 different forms of injection.

23 MR. LANDMON: We've been going for a
24 while. Why don't we take a break and go off the record.

25 THE WITNESS: Okay.

1 (Break from 4:39 p.m. to 4:56 p.m.)

2 Q. (BY MR. LANDMON) Dr. Brown, if I could have
3 you turn back to the Gwozdz provisional application,
4 which is Exhibit 1064. We had it up on our screen
5 before, but you might have it as well.

6 MR. TOBIN: We don't.

7 A. I don't have 1064. So I will go back to
8 the --

9 THE WITNESS: Blimey, I've got all these
10 documents.

11 A. I can confirm Exhibit 1064 - 16 - Gwozdz.

12 Q. (BY MR. LANDMON) Great. So I am going to ask
13 you to turn to page 8 of the PDF. It's marked page 6 at
14 the top.

15 A. Yeah.

16 Q. And if you could turn to the -- or not turn.
17 Look at the paragraph at the bottom. Do you see there's
18 a paragraph that starts with, examples of alcohol(s) for
19 use in the present invention? Do you see that?

20 A. I do.

21 Q. And Gwozdz discloses various alcohols,
22 including ethanol, benzyl alcohol and combinations,
23 right?

24 A. Yeah.

25 Q. And you agree that -- sorry.

1 You don't dispute that Gwozdz discloses that
2 its formulations can contain a mixture of ethanol and
3 benzyl alcohol, right?

4 A. I mean, that's one of a number of things that
5 are within the patent, because there's examples there.
6 And it says one or more solvents, so they're listed
7 there.

8 Q. And if you go about a halfway down that
9 paragraph, the sentence starts on the far right-hand
10 column. Do you see one sentence starts with, preferred
11 is the use of ethanol? Do you see that?

12 A. I do.

13 Q. And then if you look around line 25, there's a
14 sentence that says, In this regard, the ethanol is
15 desirably 180 to 200 proof ethanol. Do you see that?

16 A. I do.

17 Q. And then it says, i.e., in the range of 90 to
18 100 percent ethanol. Do you see that?

19 A. Yeah, I do.

20 Q. Okay. And 100 percent means 100 percent,
21 right?

22 A. Well, I think we talked about this. It's not
23 possible to get 100 percent ethanol. Because of the
24 azeotrope that's formed between ethanol, you just can't
25 produce it. So I think, as I talked about before, even

1 200 proof or 100 percent ethanol will have a small
2 amount of water present, which is why it talks about
3 greater than 99.5, and a POSA would have known that at
4 the time.

5 Q. So it's your opinion in this proceeding, in
6 these proceedings, that 100 percent doesn't mean
7 100 percent. Is that right?

8 A. I think you can acquire 100 percent ethanol,
9 yeah, and you can use it in your formulation
10 development, as you can denatured and dehydrated. All
11 I'm saying is that the laws -- even distillation will
12 not get rid of it unless you go to the -- to the benefit
13 of where you could get rid of it completely, where you
14 put these filters in that will bind all the water, and
15 then it's 100 percent. The molecular sieves they're
16 called. And I do talk about that. My experience is
17 that that is a technique often used, but commercially
18 it's an extremely expensive approach to use, so far from
19 common. But I would expect a POSA to understand the use
20 of molecular sieves.

21 Q. Okay.

22 MR. LANDMON: Counsel, subject to any
23 questions you have, I have no further questions.

24 Thank you for your time, Dr. Brown.

25 THE WITNESS: Thank you.

1 MR. TOBIN: We appreciate your
2 efficiency, Counsel.

3 Give me just three minutes to check my notes.
4 We can go off the record and come back real soon.

5 MR. LANDMON: Okay.

6 (Break from 5:00 p.m. to 5:02 p.m.)

7 EXAMINATION

8 BY MR. TOBIN:

9 Q. Dr. Brown, one of the chemicals we heard a lot
10 about today is insulin. Do you recall that?

11 A. I do.

12 Q. Do you happen to remember the molecular weight
13 of insulin?

14 A. I just checked my sugar. It's about around
15 5,000 Daltons. I need to check -- I'm feeling
16 something. Yeah, it's okay.

17 5,800, nearly 6 kilodaltons.

18 MR. TOBIN: Okay. No further questions.
19 Thank you.

20 THE WITNESS: We timed that right.

21 MR. LANDMON: I have no further
22 questions. Thank you, Dr. Brown. I appreciate your
23 time. We can go off the record.

24 (Signature reserved.)

25 (Proceedings ended at 5:03 p.m.)

1 I, MARC BROWN, PhD, have read the foregoing
2 deposition and hereby affix my signature that same is
3 true and correct, except as noted above.
4

5 _____
6 MARC BROWN, PhD
7

8 THE STATE OF _____)
9 COUNTY OF _____)

10 Before me, _____, on
11 this day personally appeared MARC BROWN, PhD, known to
12 me (or proved to me under oath or through
13 _____) (description of identity
card or other document)) to be the person whose name is
subscribed to the foregoing instrument and acknowledged
to me that they executed the same for the purposes and
consideration therein expressed.

14 Given under my hand and seal of office this
15 _____ day of _____, _____.
16

17 _____
18 NOTARY PUBLIC IN AND FOR
19 THE STATE OF _____
20 COMMISSION EXPIRES: _____
21
22
23
24

25 Job No. HOU7950193

Page 216

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4
5 PADAGIS US LLC
6 Petitioner,

7 v.

8 NEURELIS, INC.
9 Patent Owner.

10 Case No. IPR2025-00465

11 Patent 11,241,414
12
13
14

15 REPORTER'S CERTIFICATION
16 DEPOSITION OF MARC BROWN, PhD
17 MARCH 17, 2026
18

19 I, Julie C. Brandt, Certified Shorthand Reporter in
20 and for the State of Texas, hereby certify to the
21 following:

22 That the witness, MARC BROWN, PhD, was duly sworn
23 by the officer and that the transcript of the oral
24 deposition is a true record of the testimony given by
25 the witness;

Page 217

1 Before completion of the deposition, review of the
2 transcript [X] was [] was not requested. If requested,
3 any changes made by the deponent (and provided to the
4 reporter) during the period allowed are appended hereto;

5 That the amount of time used by each party at the
6 deposition is as follows:

7 Mr. Landmon.....05 HOUR(S):52 MINUTE(S)

8 Mr. Tobin.....00 HOUR(S):01 MINUTE(S)

9 That pursuant to information given to the
10 deposition officer at the time said testimony was taken,
11 the following includes counsel for all parties of
12 record:

13 FOR THE PETITIONER:

14 Chad A. Landmon (Remote via Zoom)
15 Christopher Jones (Remote via Zoom)
16 POLSINELLI
17 1401 Eye ("I") Street, N.W.
18 Suite 800
19 Washington, D.C. 20005
20 clandmon@polsinelli.com
21 chris.jones@polsinelli.com

22 FOR THE PATENT OWNER:

23 David Tobin
24 McDERMOTT WILL & SCHULTE
25 2801 Harwood Street

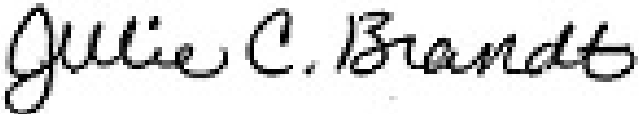
1 Suite 2600
2 Dallas, Texas 75201
3 dtobin@mwe.com

4 -and-

5 Hannah Hurley
6 McDERMOTT WILL & SCHULTE
7 650 Live Oak Avenue
8 Suite 300
9 Menlo Park, California 94025-4885
10 hhurley@mwe.com

11 I further certify that I am neither counsel for,
12 related to, nor employed by any of the parties or
13 attorneys in the action in which this proceeding was
14 taken, and further that I am not financially or
15 otherwise interested in the outcome of the action.

16 Certified to by me March 20, 2026.

17
18 
19

20 Julie C. Brandt, CSR, RMR, CRR
21 Texas CSR No. 4018
22 Expiration Date: 10/31/27

23 Veritext Legal Solutions
24 Firm Registration No. 571
25 300 Throckmorton Street, Suite 1600
Fort Worth, Texas 76102
817-336-3042

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

March 20, 2026

RE: Padagis US LLC v. Neurelis, Inc

DEPOSITION OF: Marc Brown , PhD (# 7950193)

The above-referenced witness transcript is available for read and sign.

Within the applicable timeframe, the witness should read the testimony to verify its accuracy. If there are any changes, the witness should note those on the attached Errata Sheet.

The witness should sign and notarize the attached Errata pages and return to Veritext at errata-tx@veritext.com.

According to applicable rules or agreements, if the witness fails to do so within the time allotted, a certified copy of the transcript may be used as if signed.

Yours,
Veritext Legal Solutions

[& - 149]

&	162:15 183:1	1075 4:23	126 142:23
& 2:9 3:14,21 6:8,20 218:24 219:6	184:10 205:13 10/31/27 219:20 100 130:2,8	171:19,20 1076 4:24 184:19,20,24 190:4 192:9,12	127 149:1 128 150:20 12865 219:19 12:46 119:8
0	133:21 207:14	108 127:8	13 27:6 123:24
0 182:21 183:13 184:9 0.01 39:13,13 0.5 179:24,24 181:1 00 218:8 01 218:8 0117 173:1 05 218:7 09 165:23	212:18,20,20 212:23 213:1,6 213:7,8,15 1009 143:2,12 1010 4:15 151:24 152:3,5 166:23 168:4 168:15 178:13 103 185:14 1040 4:16 66:4 66:18 67:7,14 67:15 1064 4:17 146:18,19 157:21 158:5 211:4,7,11 1071 4:18 69:4 69:22,24 70:5 1072 4:19 82:6 82:21,24 83:11 84:15,21,22 85:2 1073 4:20 130:23,24 131:17 142:10 1074 4:22 160:6,7	109 79:14 10:04 37:23 10:16 37:23 10:42 51:4 10:45 51:4 11 109:23,25 121:11,17,21 11,241,414 1:10 20:13,16 217:10 11,793,786 21:5 21:8 117 173:11 11:16 70:3 11:17 70:3 11:38 82:1 11:47 82:1 12 69:13 120:15,22,25 122:1,10,21,24 123:6 124:9,13 124:15 125:4 125:15 165:10 165:18 171:6 178:19 193:13 123 199:22 124 200:7	126 142:23 127 149:1 128 150:20 12865 219:19 12:46 119:8 13 27:6 123:24 124:4 130:22 172:2 130 4:20 154:14,20 164:15 131 45:3 164:13,18,19 132 164:20,24 135 197:13,14 203:17 206:24 207:3 137 59:15,24 60:23 61:14 208:1 138 52:15 58:22 59:8 197:22 14 4:25 66:7,9 92:5 193:15 1401 3:6 218:17 146 4:17 149 166:20,22 166:24 169:8 169:11,22 170:5 171:2 173:15 174:11
1			
1 39:2,13 41:25 52:5 68:11 70:25 71:1,12 71:20 72:4,6 72:15 73:17 81:3 154:10 178:22 180:2 180:22 181:6 181:10,11,19 181:20 183:8 183:22 195:12 206:21 1,000 154:3 10 9:20 38:24 82:5,7 145:11 147:8,14			

[15 - 2051]

15 39:11,13 73:16 74:2 131:23,25,25 185:17 152 4:15 157:4 156 178:11 179:19,22 180:11,17,21 181:8,19 183:8 183:22 157 178:11 180:5,11,17,21 181:9,19 183:8 183:22 16 39:9,10 73:16 74:1 146:17 157:21 162:15 211:11 160 4:22 1600 219:22 169 166:6 17 1:16 6:5 38:13,17 39:1 39:15,21 40:19 72:3,13,25 160:5 169:9 185:17 215:3 217:17 170 178:2 171 4:23 172 167:11 173 192:18 193:5	174 193:24 17th 2:6 18 58:9 152:2 168:25 179:20 185:17 180 207:13 212:15 184 4:24 1892 113:21 19 5:4 66:17 132:4 171:19 19.3 134:7 19.3.2 132:25 19.4.3 134:1 19.4.4 137:6,19 19.7 138:14 190 207:16 1986 23:20 1988 86:9 1996 178:22 1998 26:17 1:34 119:8 1s 136:18	192:12 202:13 219:16 220:2 200 147:19,21 207:13,13,17 207:24 212:15 213:1 20005 3:8 218:19 2000s 25:12 36:8,21 2007 133:15 134:9 135:1,8 135:17 137:24 138:20 172:2 2008 18:4 45:8 47:18 61:18 126:7,19 127:13 128:2 136:7 143:14 157:16,18 165:23 2009 18:4 26:8 26:13,18,19 29:8 45:8 47:17 55:9 57:17 59:17 61:18 96:10 97:3,14,15 98:3,9 99:8,15 100:19 101:9 101:14 103:18 104:7,16 105:9 105:20 106:13 106:17 107:16	108:2 113:18 113:20 117:2 117:23 118:2 125:3,16 157:10,17 192:4 2011 36:16 2012 82:8,8,20 83:8 2014 13:14 2017 13:18,22 14:1 2019-00451 66:19 2019-451 66:4 2020 66:22,23 2021 14:14 2022 24:13 25:20 37:13 66:20 2023 24:24 2024 14:17 2025 24:13 37:13 2026 1:16 2:6 6:5 125:25 215:3 217:17 219:16 220:2 2049 4:25 13:24 14:4,7 22:11 2051 5:1 92:5,7 92:11,21 109:21
	2		
	2 96:3 114:23 115:4,7,14 116:1 121:22 122:9,12,19 123:23 162:5 169:12 179:1,2 185:20 195:13 20 5:5 183:1 184:9,18		

[2069 - 4:56]

2069 198:13 2072 5:4 19:12 19:15 38:3 2073 5:5 20:10 20:12 41:13 2074 5:6 21:2,4 43:12 52:3 89:2 208 143:1 209 143:16 21 5:6 210 144:18 212 150:23 151:6 214 4:5,9 215 4:11 217 4:12 219 164:19 22 38:13,17 39:6,16,22 40:19 73:13,15 73:22,24 74:7 132:22 220 165:3 224 204:1,3 207:3 225 204:2 228 197:22 23 133:10 239 198:11,12 24 13:15 14:7 25 183:6 212:13	26 73:9,12,20 74:6 124:17 133:25 2600 2:10 3:16 219:1 269 166:3,5 27 71:19,20,24 72:12,24 73:19 81:5,5,15 137:4 270 178:2 272 166:15,18 174:10,14 275 192:22 193:4 276 193:22 199:22 28 46:25 143:14 2801 2:9 3:15 218:25 2:00 132:20 2:01 132:20 2:49 158:1	3.2 93:6,20,23 3.5 92:25 3.5. 92:23 3.6 110:1 30 38:22 147:18 300 3:23 219:8 219:22 32 138:13 354 120:6 355 119:17,22 124:6,9,13,17 125:3,15,19 36 68:11 360 132:23 361 133:10 364 133:24 365 137:4 370 138:12 375 183:3,5 38 61:22,25 101:24 39 102:1,2 3:03 158:1	110:18 112:12 152:16 162:9 171:6 172:20 40 23:25,25 85:3,10 86:3 89:3,5 4018 6:10 219:20 41 70:20,23 414 5:5 20:16 20:22 41:12,17 41:20,25 42:6 42:6,12 43:24 44:2,4,12,20,25 46:5 48:3,5 63:16 64:7,22 64:25 65:12 71:5 76:6,7 78:16,25 79:5 79:12,13 80:1 80:14,16,19 81:2,20,21 85:23 88:17 89:12 155:10 155:22 42 89:21 43 85:4,10 90:6 44 90:25 92:19 46 119:13 47 120:1 4:39 211:1 4:56 211:1
	3	4	
	3 4:3 96:3 158:9,11,14,15 159:5 161:24 161:25 162:9 162:10 172:6,7 172:9 180:19 185:10	4 92:1 93:23 94:1,9,18,20,25 95:7 96:11 97:4,16 98:4 98:10 99:25 100:6,22 101:16 103:19 104:8,17 110:8	

[5 - 876]

5	50:7 52:15,19	67 4:16	119:11 142:5
5 110:12	52:22 53:10,19	68 68:1,2,7	142:22 148:25
112:12 115:1	54:2,10,19	86:23 89:22,25	154:14 155:10
147:21 152:11	55:1,2,19	69 4:18 90:13	155:15,22
159:3,4 172:8	56:10,23 57:3	691 159:14,16	157:5 164:11
181:4 183:6	57:4,5 58:23	160:25 162:19	192:21 197:12
186:12 187:2	59:11,13 63:12	163:3	199:24 203:17
198:23	63:20 64:15,18	7	205:14,20,24
5,000 214:15	64:23 65:11	7 4:8 112:23	206:25 208:2
5,800 214:17	85:24 86:6,14	146:22,23,24	79 52:4 60:23
52 46:24,25	87:4,6 88:15	147:1 185:17	7950193 1:22
47:2,7 218:7	143:17,23	188:24,25	220:4
546 5:4 19:18	144:5,9,10	70 38:24	8
20:5 38:2,10	56 178:11	147:18	8 147:20 148:7
38:14 41:21	571 219:22	74 44:22,23	211:13
42:4,8 43:24	58 38:7,8	746 52:2	8,895,546 19:14
44:5,15 46:9	59 62:10	75201 3:17	19:18
46:15,24 47:12	5:00 214:6	219:2	80 52:15 58:4
47:23 48:3,4	5:02 214:6	76102 219:23	800 3:7 218:18
48:16,18 49:5	6	786 5:6 21:9,16	817-336-3042
49:8 50:8 71:5	6 4:4 66:20,22	43:11,11,17,20	219:23
72:1,3,13,25	172:24 211:13	43:23 44:5,12	84 4:19
73:4,13,15,19	214:17	46:5 48:3,5	867 71:2
73:23,24 74:7	6,962,691 4:22	52:2 61:22,23	876 4:16,19
74:17 76:10,14	159:11	63:16 64:6,22	66:5 67:19
78:20 89:11	61 102:2 126:2	65:12 66:7	68:11,15 69:2
156:9,10,12,13	61/040,558	71:5 78:16,25	69:4 72:12,24
156:20,24	45:11,18 86:6	79:5,17 80:2	73:9,13,20
558 45:12,21,25	63 70:21	80:14,16,19	74:6,15 75:3
46:6,10,15	64 41:13 127:9	81:2,20,21	75:12,15,24
47:13,24 48:9	650 3:22 219:7	85:23 88:17	76:5,13 77:2
48:18 49:4,9	66 43:15,18	89:1 92:6	77:10 78:7,17
49:20,23 50:1		101:21 118:25	79:1,6,17 80:3

[876 - additional]

80:8,11,15,20 80:24 81:2,5 81:15,21 84:3 84:25 85:15 86:7 87:17 88:10,20	35:10 140:16 141:12 145:3 195:9 able 107:6,23 125:15 140:22 169:2	accepted 128:8 accordance 147:4 accuracy 220:8 accurate 15:17 20:5,22 21:16 203:23 achieve 32:3 130:17 139:22 176:11 182:14 achieves 149:5 149:12 achieving 30:1 30:5 34:9 130:19 acid 27:1,3 28:4,19,21 30:10 32:12,15 40:7 163:16,22 164:6 200:21 210:11 acknowledged 216:12 acquire 213:8 act 210:3,10 acting 139:22 183:9 action 13:20 29:16 139:20 140:4 185:13 206:13 219:13 219:15 active 27:10 30:17,25 55:3	55:9,11,20,22 56:2,20 57:11 57:18 87:11 150:10 151:19 actives 26:22 28:11,16 activity 32:1 95:17 184:8,15 acts 35:12 56:13 58:6,17 actual 11:21 32:16 38:1 92:19 146:24 182:18 actually 7:1 22:19 26:3 27:15 28:2,18 30:20 32:14 36:16 53:11 82:18 84:14 100:24 102:1 114:7 147:1 168:19 174:2 178:3 186:8 194:17 added 40:23 59:17 60:6,9 157:10 201:14 208:9 adding 208:22 addition 28:16 32:4 200:13 additional 31:18 40:15
9	above 2:5 120:7 165:4 182:1 216:2 220:5 absolutely 9:3 19:19 35:10 105:6 absorbed 133:18,20 absorption 28:8 31:9 56:14 58:7,14 58:16,17 133:6 134:19,22 137:6,19 138:1 138:9 152:22 162:20 184:5 188:15 189:5 195:15,23 abstract 160:13 161:14,21 academia 141:24 academic 37:9 129:9,15 acceptability 107:4		
9 92:18,20,21 147:2,22 148:7 179:3 185:17 9,763,876 4:18 66:19 70:10 83:18 90 23:20 207:14 212:17 92 5:1 178:19 179:10 94025-4885 3:24 219:9 95 38:22 147:20 99.5 213:3 9:07 6:6 9:12 2:6			
a			
a.m. 2:6 6:6 37:23,23 51:4 51:4 70:3,3 82:1,1 abandoned 67:21 ability 29:20,21 29:23,24 31:11			

[additional - alkane]

58:4,10 59:16 163:25 additions 175:1 additive 161:8 address 155:1,2 addressed 21:25 85:24 addresses 20:5 addressing 20:22 administerabi... 109:10 administered 6:10 126:10 138:1 180:1 208:22 administering 71:3 107:1 109:16 administration 38:20 39:17,23 126:20 138:22 149:25 150:4 189:25 adopt 119:23 120:6 121:9 124:7 adopted 201:6 201:18 202:20 advantage 153:4 advantageous... 58:13	advantages 133:5 adverse 152:23 advise 24:16 aesthetics 164:10 affect 31:9 95:17 109:10 195:21,24 affected 29:22 affecting 132:6 134:19 affects 152:23 affirmative 200:10 affirmed 78:6 affix 216:1 afraid 117:4 agency 34:3 agent 55:20 56:20 57:18 152:21 153:10 153:13 163:19 208:13,18 agents 55:3,4,9 55:11,23 56:2 57:11 87:11 144:24,25 145:6 151:10 188:16 189:6,6 189:13,22,23 aggregation 179:17	ago 11:16 13:1 23:25 agree 10:3 41:19 43:22 54:12 60:9 63:15,19,23 72:23 73:11 74:5 80:10 107:16 114:2 115:11,17 120:18 121:3,8 125:14 128:2 129:2,24 133:15 134:9 135:1,8,16 138:6,20 139:1 139:17 140:2 147:24 148:8 149:9,24 151:13 153:20 155:5 161:2 162:18 163:2 177:23 178:1,9 182:4,7 188:1 194:3,22 196:5 200:15 201:7 201:17 202:20 205:8 206:15 209:11 211:25 agreed 44:9 agreements 11:1 220:14 ahead 8:1 33:13 69:10	158:8 aiding 30:13 aim 164:9 airway 33:23 33:23 airways 36:17 al 185:18 alcohol 38:23 39:4 40:6 71:22 72:5 125:22 148:10 149:7,13 200:19 207:8 211:18,22 212:3 alcohols 144:21 148:1 150:6 164:7,7,8 206:21 208:14 211:21 alk 93:10 alkane 90:7,10 92:2 93:9,23 94:9,20,25 95:8 96:11,24 97:4,16 98:4 98:10 99:25 100:6,22 101:6 101:16,20 103:19 104:8 104:17,22 105:6,9,22 106:18 108:3 108:22 110:8
---	---	---	--

[alkane - apologize]

110:24 111:14 111:23 114:13 115:13,15,25 116:1 121:25 124:10 125:4 125:16 alkanes 89:22 90:1,14,18,19 90:19,21 91:4 91:14 92:25 93:5,21 94:8 94:13,16 96:2 98:25,25 110:5 112:3,12,23 117:7,22 118:6 alkyl 38:24 39:9,11,14 44:8 60:7,10 61:15 71:7,10 71:14,16,17 72:17 73:18 80:8 85:19,25 87:10,13 89:22 151:9,9 153:8 153:9 165:9,17 166:9,10 169:14,17,24 169:25 170:10 170:10 171:2 173:21,23,25 174:2,19 175:23 177:24 179:11,13 180:6 187:7	188:7 192:16 193:12 alkylmaltosid... 179:14 180:6 allegedly 185:17 allotted 220:15 allow 198:17 202:18 203:22 204:10 205:3 allowed 40:24 41:1 198:22 218:4 allows 205:8 alludes 139:6 alpha 168:1 178:4 alphabetical 117:11 alternative 126:20 136:6 136:11 altogether 190:16 amended 172:16 173:2 amendment 4:23 171:25 172:10 173:10 174:24 amendments 172:11,21 176:14	american 54:7 amount 23:9 32:14 38:23 40:24,25 50:19 125:11,14 205:3 206:5 213:2 218:5 amounts 198:5 198:18 201:3 202:7,19 analogy 30:6 analysis 40:8 63:12 64:14 65:13 200:22 analytical 108:9 anatomy 106:25 ane 90:9 animal 27:25 answer 7:25 8:1 33:12 35:14 48:21,25 49:12,17 56:6 56:21 57:6 73:2 76:11 96:20 98:20 102:23 103:22 103:24 110:20 111:6 117:25 171:12 175:16 176:5 186:24 195:6 205:16	answered 103:23 183:12 answering 80:25 answers 64:10 anti 126:15 antibiotic 27:19 antibodies 191:19 antibody 191:17,18 anticonvulsant 126:15 antiseizure 189:6,13,22,23 anxiolytic 126:16 anybody 27:24 anyplace 199:17 anyway 72:8 anyways 13:13 apart 10:23 141:1 148:23 182:12 apnea 24:15 33:6,8,15,24 apologies 27:23 54:21 57:9 117:4 apologize 35:15 79:18 83:5
--	---	--	--

[apparent - asking]

apparent 199:13	60:3 63:20 85:18 128:9	approximately 36:3	artisan 57:11 76:5,22 95:14
apparently 183:16	143:13,24 144:6 147:25	aqueous 155:8 156:25 176:20	102:9 103:25 104:20,23,25
appeal 1:3 75:10,11 217:3	157:13 158:3 184:25 185:12	191:22 194:10 197:5 201:11	105:3,5 106:5 106:22 107:5,9
appealed 77:17 77:25	211:3 application's 86:14	201:24 202:1,4 202:8,10,15	107:10,12,20 108:10,16
appeals 77:18 77:22 78:1	applications 45:1 59:18	209:10 210:13 area 126:24	109:2,13 115:17,23
appear 74:11 81:23 151:18	applied 62:8 128:9	127:2 163:13 185:23	116:5 129:13 193:9 194:15
157:16 161:13 181:25	apply 22:2 63:11	areas 139:16 155:25	196:24 197:2 204:6 207:18
appearances 3:1 4:3 6:13	appreciate 14:3 41:9 109:2	argue 140:6,7 argumentative 204:13	artisans 77:2 77:10
appeared 216:10	116:25 128:21 167:5 194:17	arguments 198:9	arts 96:10 ascertain 62:15
appearing 2:11 appears 73:5	200:1 207:18 209:9 214:1,22	arseholes 164:8 art 8:23 47:20	aside 72:21 asked 35:15
170:14 appendages 114:17	approach 213:18	55:8 57:16 74:13,16 89:9	47:3,21 50:6 51:14 55:17
appended 218:4	approaches 134:1,14	97:3 98:3,9 99:5,8 105:21	64:12,20 65:13 76:7 81:6
appendix 189:2 190:1	139:24 148:17 approaching 145:11 147:14	129:7,8 143:21 144:1,8,13	101:3 117:18 124:12 135:12
applicable 220:7,14	appropriate 34:17 114:18	158:23 174:18 185:1 187:14	163:16 177:2 200:18 205:15
application 4:15 45:11,13	approved 34:23 128:10	article 105:25 133:11 137:4	asking 14:16 24:1 46:20
45:18 46:6,11 46:16 47:13,24	128:22 150:10	articles 106:3,4 158:23	49:1,6 56:25 57:2,20 59:2
49:5 52:12			69:18 86:19 97:14 100:10

[asking - barry]

100:18 101:7,8 101:13 106:5 116:22 117:23 123:22 128:2 145:24 163:17 185:5 188:1,19 aspect 72:22 179:5 aspects 23:13 72:23 107:3 aspersions 192:1 assert 155:19 asserted 74:16 assessment 184:8 assessments 184:7 assigned 112:19 associated 118:23 assume 7:15 22:4 78:11 167:22 176:8 assumed 116:10 assumes 108:5 108:24 118:9 atoms 90:2,22 93:6 112:23 115:1,5 120:15 120:22,25 122:1,24 123:7	123:24 124:13 124:15,18 180:7 attached 9:11 220:10,12 attaches 170:18 attacks 36:2 139:8 attempt 35:14 attempts 93:14 attorney 2:11 6:14 16:20 48:22 attorneys 16:12 219:13 attracting 139:4,15 attractive 139:18,19 audio 9:15,18 9:19 43:4 100:13 august 66:20 66:22 172:2 author 132:12 authored 133:16 authoritative 114:4 authors 132:8 150:24 availability 133:7	available 101:19 117:2 126:21 135:13 171:10 220:6 avenue 3:22 128:14 219:7 avoidance 9:9 avoiding 152:23 awake 140:21 aware 58:22 59:10 77:15,16 77:24 78:5 94:17,19,24 95:7,10 96:9 99:7,10,14,17 99:18,23 105:16,19 106:4 116:14 116:16,22,24 117:6,15,20,22 118:4,10 123:19 140:24 151:2,5 182:12 182:13 209:24 azeotrope 207:22 212:24	28:24 33:19 44:1 45:16 49:11 50:18 59:15 60:8 61:22 62:1 65:1,19 72:17 74:2,20 80:24 88:13 89:1 109:19,21 111:1,19 118:24 119:9 124:5 137:22 142:16 148:25 150:15,19 154:13 157:18 157:21 163:17 163:23 164:11 170:1,25 172:9 178:13 185:19 187:1 196:3 203:16 205:13 205:19,20 210:18 211:3,7 214:4 background 89:9 105:14 118:20 158:9 158:16,19,22 185:21 banana 9:12 barrier 34:10 barriers 134:21 barry 7:10 131:21
		b	
		b 87:2 179:25 back 10:14 13:6 14:6 15:25 22:11 25:16,24 26:15	

[base - bit]

base 198:7	100:16,17	benzyl 38:23	bile 190:13
based 28:18	103:23 104:1	39:3 40:6	191:6 196:7
48:21 112:24	109:13 112:4	71:22 72:5	bind 213:14
114:14 115:12	113:2,13	200:19 207:6,8	binder 146:7
118:7 126:17	123:25 124:15	211:22 212:3	151:22 168:3
152:19 166:1	124:19 125:7,9	best 7:12,24	bioavailabilit...
182:3 183:14	126:8 135:24	9:21 16:25	130:2
187:6 189:10	136:18,23	17:1 35:14	bioavailability
194:19 196:25	139:7 141:3	62:24 143:8	58:18 107:3
202:5	143:6 155:16	181:2 191:5	108:13 129:19
baseline 182:20	175:20 177:19	196:22	129:22 130:8
basic 37:9	184:15 189:20	beta 41:23 42:7	130:17 133:21
89:18	193:11 199:14	42:14,19,25	151:8 152:22
basically 18:2	199:21 200:12	44:4 51:22	179:6
33:25 71:7	200:16 201:2	52:7,18 53:7	biochemistry
80:5 130:18	204:16	60:13,17 80:7	186:3
basis 56:22,25	benefit 143:10	87:12 123:17	biocompatible
56:25	152:2 213:12	123:18 155:15	207:10
bearing 23:19	benefits 109:12	168:1 178:4,6	biological 55:6
197:10	129:1 134:14	178:10 180:8	55:21,25 57:7
bed 33:22	141:15,18	180:13,18,24	195:23
beginning 6:14	191:4	181:9,12,16,21	biologically
17:24	benzaldehyde	182:5 183:9,23	151:19
behalf 6:18,22	40:7	187:7,8,15,16	biologics
6:23 14:22	benzodiazepine	188:2,4,8,9,13	170:20 176:21
belated 41:4	37:6,12 38:20	188:14,22,22	bit 12:11 13:4
believe 11:20	81:3	189:5 190:11	28:21 31:3
14:23 22:24	benzodiazepi...	190:11 194:4	37:25 62:23
26:2 38:15	23:17,19,20,24	better 11:20	82:3 89:3
40:2 41:18	24:21 26:12	42:7 170:14	104:11 109:6
60:5 61:2,15	35:17,20 36:1	194:8,21	110:6 113:3
65:20 67:21	36:9,22 126:4	big 141:9	136:17 141:5
85:4 92:19	benzoic 40:7	bigger 44:2	142:4 168:20
97:24 98:17,22	200:21	140:15 168:20	183:2 188:12

[bit - butane]

189:17 210:12 blimey 211:9 blood 34:10 181:1 182:9,17 183:15,18 bloodstream 28:2 33:16 127:1 130:7 183:16,19 209:14 blue 116:15,23 116:25 bluetooth 9:11 bnezaldehyde 200:21 board 1:3 75:10,11 217:3 body 210:16 bold 174:15 bolded 175:25 bonded 90:8 bonds 90:3,3 124:21,22,22 124:25 125:1 book 22:20,22 98:14 116:15 116:23,25 135:19 books 111:18 bottle 9:12 bottom 60:23 68:9 82:8,20 85:4,9 92:21 119:15 137:5	154:22 159:4,9 172:1 178:20 178:23 193:23 211:17 brain 34:10 127:1 branch 90:23 91:2 109:8 110:16 116:1 165:10,19 branched 97:10 109:5 115:14 120:11 122:14,20 165:6 166:9 169:17,24 170:10,17 171:2,11,15 173:22,22,25 174:16,19,25 175:5,12,24 176:8 177:15 193:14 branches 165:25 branching 173:20 174:24 branding 61:2 136:13 brandt 1:23 2:7 6:9 217:19 219:19 break 8:4,6,8 9:24,25 37:20	37:21,23 51:4 70:3 81:24 82:1 119:8 132:16,20 158:1 210:24 211:1 214:6 breaking 10:25 32:18 210:10 breaks 164:24 breathing 33:25 137:13 brian 131:21 brief 79:25 bring 130:22 146:9 157:21 159:24 184:18 broad 35:5 broader 80:8 brought 28:25 168:22 brown 1:15 2:3 4:7 5:4,5,6 6:4 6:23 7:4,8,10 19:13 20:1 25:3 33:12 37:24 41:3 46:17 48:20 50:23 51:5 52:1 69:7 70:4 79:3,24 82:2 82:22 83:15 85:22 87:24 92:8 96:20 100:15 101:1	119:9 130:25 131:16 132:21 142:13,21 146:6 152:4 158:2 161:10 169:3 171:21 171:24 184:21 184:24 186:12 186:15 187:24 193:9 200:3 211:2 213:24 214:9,22 215:2 216:1,5,10 217:16,22 220:4 buccal 35:23 135:23 butane 90:25 91:1,1,2,19,20 91:21,21,24 92:1 93:12,24 94:2,4,10,10,15 94:20,20 95:1 95:1,8,8,10 96:4,12,12 97:4,5,5,17,17 98:4,5,10,11 99:25 100:1,4 100:4,6,6,22,23 101:16,16 103:19,20 104:8,9,18,18 105:9,13,22,22 106:16,19
--	--	---	--

[butane - chain]

108:3,4,22,23 110:7,8 111:17 111:24 124:2 butyl 125:23	104:8,17 110:8 112:23 114:16 115:1,1,5 120:15,22,25 121:17 122:1 122:24 123:7 123:24 124:3,9 124:13,15,25 124:25 125:1,4 125:15 180:7 carbons 90:14 93:11 110:12 112:25 115:14 115:15,25 116:2 120:24 121:13,21 122:10,21 165:10,19 166:2 171:9 193:13,15 card 216:11 care 141:2 career 25:9 33:1 104:5,15 carries 178:23 cartt 17:10 case 1:9 12:14 13:16,19 14:9 14:23 37:1 68:14 74:22 91:19 101:18 104:21,25 105:5 107:6,20 109:7 115:3	159:17 182:2 217:9 cases 10:22 13:9 14:20 16:11 202:6 cast 192:1 catalog 53:3,9 53:12,14,23 54:14,16,23,25 55:13,18 56:8 56:9,18 57:1,3 57:8,15 58:2 58:20 59:9,23 59:25 61:6,10 65:3,21 86:9 86:15,24,25 87:6 cause 2:5 13:15 109:6 177:19 184:4 207:11 caution 48:22 cavity 107:1 central 2:7 6:6 110:18 187:20 cerebral 188:16 certain 26:21 32:6 106:15 127:4 185:14 210:8 certainly 7:23 8:5,7 9:14,16 9:19,23 19:8 19:10 88:24	107:14 110:6 113:19 125:17 126:24 159:1 165:24 167:23 171:14 174:12 182:16 188:13 certificate 4:12 40:8 200:22 certification 217:15 certified 6:9 217:19 219:16 220:16 certify 217:20 219:11 cetera 128:25 128:25 179:7 cgm 9:9 chad 3:3 6:16 9:15,19 16:24 131:10 157:24 218:14 chain 90:18 93:6,11 110:18 111:14 114:16 114:18,19 115:1,13,19,25 117:6,21 118:5 120:16 121:1 121:10,14 122:1,10,20,25 123:7 124:4 125:19 165:5 166:1 173:21
c			
c 1:23 2:7 6:1 11:20 17:11 121:16 217:19 219:19 california 3:24 219:9 call 8:4 29:13 37:9 94:3 107:15 124:22 124:23 143:2 193:25 202:5,6 called 12:7 28:22 35:2 98:17 123:3,23 137:2 163:10 163:21 199:13 202:14 213:16 calling 53:21 capability 61:19 carbon 90:2,3,3 90:22 92:1 93:6,23 94:9 94:20,25 95:7 96:11 97:4,16 98:4,10 99:25 100:6,22 101:16 103:19			

[chain - claims]

175:7,18,21 176:2 177:4 195:20 chains 169:17 171:3 173:23 173:25 174:2 174:19 175:24 180:7 193:13 challenge 31:20 60:16 118:22 130:14 134:21 155:10 197:1 challenged 44:25 45:7 85:14 143:18 143:21,24 144:6,11,13 154:18 197:24 198:3,16 challenges 128:21 129:12 130:20 134:15 138:14 139:6 141:11,14 change 83:9 175:4 176:22 176:24 177:2,2 177:13 178:5 184:3,3,4 215:4 changed 174:2 174:19,24,25 176:11	changes 4:11 22:12 177:5,7 215:1 218:3 220:9 changing 65:22 chapter 132:4,5 132:9 133:16 134:13 135:21 189:17 chapters 22:20 22:23,25 characteristic 93:10 characteristics 24:2 characterizes 187:14 charge 28:8 134:18 check 80:24 214:3,15 checked 214:14 checking 46:21 61:23 chemical 89:14 89:20 90:8 112:25 113:23 114:3,5 134:23 chemicals 40:15 214:9 chemist 108:7,7 108:8,9,9,14,14 108:15	chemistry 5:3 23:12 89:18 185:23 chemists 94:18 94:19,25 95:7 96:6,10,23 108:2,15 113:11,21 chitosan 26:23 27:3 choose 196:20 chris 6:17 82:14 chris.jones 3:10 218:21 christopher 3:4 218:15 circuit 46:18 77:17 78:1,6 circuit's 78:12 circulation 30:4 128:12 cite 59:23 167:15 208:20 cited 92:14 169:18 cites 169:8 208:8 civil 13:20 claim 39:1,2,5 39:9,10,11 41:24 44:15 45:13,15 48:5 52:5 58:9,24	59:12 62:12,16 62:19,20 63:2 63:4,19 64:9 64:13 65:18 70:21,25 71:1 71:12,19,20,20 71:24 72:3,4,6 72:12,13,15,24 72:25 73:9,12 73:13,15,16,17 73:20,24,24 74:6,7 81:3,4,5 81:15,21 156:9 156:13 196:16 197:23 198:9 199:18 200:10 201:5,19 203:6 203:10,11,12 204:21,22,25 206:4,17,20,20 206:20,21 207:1 claim's 42:11 claimed 31:16 32:21 41:21 43:24 71:4 85:19,25 163:24 claiming 58:15 claims 38:13,17 39:15,18,21,24 40:18,20,25 41:17,19 42:4 42:5,6,8,13
---	---	---	---

[claims - completely]

43:19,22 44:12 44:25 45:7 46:1,5,9,14 47:12,17,19,23 48:4,18 49:8 50:7 62:14 63:16,18 64:6 64:22 65:12 68:11,18,21 70:24 71:2,24 75:16 76:6,13 78:7,16,17,24 79:1,4,6 80:1,2 80:15,16,19,20 81:18,19,20 85:14 86:7 143:18,21,24 144:6,12,13 148:15 149:19 149:23 154:18 155:10,14,21 155:25 156:15 156:20 185:14 185:16 190:18 193:19 197:24 198:3,16 199:20 202:22 202:24 203:22 204:9,25 205:3 205:9,11 clandmon 3:9 218:20 clarification 22:8 42:23	51:13 58:8 79:2 85:6 117:14 124:24 167:6 207:7 clarify 7:15 145:21 158:4 158:14 169:22 class 26:1 classic 111:10 182:24 clear 7:13 16:25 27:8 29:10 34:19 44:12 51:8,9 53:18 72:10 74:4 121:15,18 186:7 192:5,10 197:9 clearance 29:24 141:16 clearly 64:8 112:17 177:17 184:13 client 48:22 clinical 32:17 107:3 163:25 close 33:23,24 84:17 113:15 142:12 closed 69:17 142:14 clue 84:8 clumsily 196:8	clunky 124:12 cns 139:14 189:25 coin 112:14 113:8 column 70:21 161:25,25 162:9,9,10 212:10 combination 36:11 154:17 154:23 191:3 combinations 38:22 211:22 combined 38:23 combining 145:10 147:12 208:16,25 come 18:6 22:16 75:22 113:12 160:1 187:1 214:4 comes 114:25 123:12 140:20 175:15 coming 148:21 166:20 174:12 comment 107:21 109:1 commercial 31:15 37:12 129:10,10,15 136:10,14	141:22 150:7 commercially 213:17 commission 216:18 common 98:3,9 108:1 213:19 commonly 99:24 communicate 10:4 communicati... 48:23 companies 24:17 28:24 33:2 company 12:6 12:7 28:22 compare 93:16 182:25 compared 127:21 163:12 191:25 compares 123:20 comparison 44:25 194:9 compatible 210:15 complete 14:5 14:9,11 completely 137:15 191:20 207:21 213:13
---	--	---	--

[completion - considers]

completion 218:1	123:23,24	conferring 10:2	consider 42:21
complex 32:20 35:12 130:13	compounds 89:15,19,20	confidentiality 11:1 25:4	57:10 64:12,21
complicated 30:14	93:1,15 94:8	32:19	65:6,13 68:13
complying 148:19	94:13 114:5,15	confirm 19:21	68:22 74:23
component 35:4 41:24	116:16 120:21	19:24 20:19,20	77:9 88:9,19
162:22 207:19	121:5 139:10	21:12,14 59:6	116:17 118:14
components 18:3 90:8	194:18	106:6 177:6	140:11 141:19
197:25 200:14	comprise 58:13	211:11	177:5,7 184:14
201:1	160:22 161:6	confirmation 13:3	197:5
composition 11:13 58:10	comprises 58:10 160:18	confirmed 188:20	consideration 30:18 31:1
73:5 76:15	comprising 38:20 208:12	confirming 100:20	141:9 216:13
141:21 152:20	concentration 29:20 31:13	confused 31:3	considerations 141:10,25
160:14,18,21	73:22 129:25	47:16 144:16	195:4
161:5,9 198:20	130:15 134:20	167:8	considered 18:21 26:24
206:9,16	180:25 183:2	confusing 159:6	27:3 32:16
207:19 208:15	concerned 31:18 205:22	confusingly 117:19	56:5 65:24
compositions 34:18,20 151:7	concerning 107:2	confusion 96:1	66:13,25 67:3
151:10 153:8	concerns 25:4	114:9	68:15 70:13
160:11 201:4	conclusion 77:19 138:14	congress 113:11,20	75:23 78:12
compound 42:10 43:25	conclusions 174:13	conjunction 10:13 36:23	87:20 140:3
79:7 80:4,21	condition 127:6	connotations 115:20	143:20 144:12
90:1 112:18	140:17	consecutive 120:25	144:14 154:2
114:17 115:2	conditions 149:18	consent 140:25	158:24 159:16
118:6 121:18	conducted 6:4		176:15 185:4
121:20,23	28:15		193:11 202:15
			considering 59:1 76:4
			80:25 114:15
			188:12
			considers 57:22
			185:22

[consistent - count]

consistent 84:18 consisting 39:3 58:5,11 72:4 197:25 198:16 199:19 200:5,9 200:10,12,15 200:25 202:18 203:1,7 204:11 204:15,22 205:7 206:8 consists 71:21 constraints 134:4 construction 155:24 197:23 198:9 199:18 200:10,16 201:6,17 203:4 205:7 206:17 construed 198:17 contain 39:17 39:23 124:20 201:15 202:11 202:12 212:2 contained 163:22 201:16 containing 48:10,11 144:19 147:25 152:20 161:1 189:12	containment 202:9 contains 44:16 45:13 61:4 199:15 contended 106:2 content 198:8 contention 102:21 contents 85:5 132:2 185:12 context 57:19 57:21 64:3 91:7,9,15,23,24 95:5,6,11,24 96:23 97:8,8 101:18 102:22 103:6 104:1,21 106:15 107:8 123:11 127:4 135:21 148:13 153:25 154:5 170:16,22 171:5,15 175:10 176:10 176:10 184:1 190:23 196:10 196:13 197:23 continue 24:15 41:10 51:25 88:5 89:24 101:2 170:3	continues 24:15 136:15 continuing 90:5 203:19 204:6 continuous 9:10 121:13 122:20 166:1 201:25 202:3 contrary 75:23 contribute 107:12 controlled 40:13,16 controls 184:14 210:6 conversation 51:6 140:9 conversations 65:3 copied 208:5 copies 19:6 copy 220:16 corneum 163:10,12 corporation 28:23 correct 38:15 47:19 50:2 54:11 75:25 82:9 124:19 127:25 128:17 165:1 169:21 174:11 175:8	176:15 177:8 203:8 216:2 corrections 20:7,24 21:18 correctly 36:7 63:10 80:23,25 109:3 135:25 corresponding 90:10 173:15 cost 138:23 141:13 costly 128:25 counsel 6:13 7:21,25 10:3 16:12 17:17 37:16 41:10 43:4 50:21 51:5,24 69:15 79:21 84:10 85:7 87:24 88:5 100:12 119:1 137:14 142:9 143:19 145:19,23 158:13 162:14 167:5,21 168:5 168:13 173:5 186:6 190:2,8 192:6,24 199:23 200:2 213:22 214:2 218:11 219:11 count 121:12
---	--	--	--

[county - ddm]

county 216:8 couple 112:12 158:8 185:20 197:20 course 10:6 18:25 49:22 55:4 107:22 182:18 court 1:23 7:19 8:13 10:20 12:14 13:18 15:8,10 41:8 77:17 78:1 143:9 198:10 200:6,8 206:12 cover 40:20 48:15 116:6 covered 60:18 covers 178:3 crash 132:13 crazy 50:17 cream 202:3,6 create 128:4 135:17 167:18 167:19 cremophor 208:18 crisis 139:19,23 140:3,16 criteria 202:9 critical 30:12 31:17 35:10 95:15,21	crr 1:23 2:7 219:19 csf 187:22 cso 34:15 37:13 csr 1:23 2:8 219:19,20 current 24:16 currently 128:22 curriculum 4:25 cut 9:15,18,19 43:4 107:14 cv 8:23 12:8 13:1,11,14,23 14:6 22:12,12 23:4 24:7 27:5 36:5,19 cycling 132:13 cyclodextrin 190:12 191:6 cyclodextrins 196:7	178:4,4,4,6,10 179:25 180:8 180:13,18,24 181:1,9,12,16 181:21 182:5 183:9,23 187:7 187:8,15,16 188:2,4,8,9,13 188:14,22,22 189:5 190:11 190:11 194:4 d.c. 3:8 218:19 dallas 2:10 3:17 6:8 219:2 daltons 214:15 data 180:22 181:5,25 182:21 184:11 194:19 196:15 date 6:5 45:8 45:24 47:3,9 47:13,16,17 64:3 88:10,16 215:3 219:20 dated 98:14 172:2 david 3:13 6:20 17:15 218:23 day 2:6 33:22 136:24 216:10 216:14 days 15:22 ddm 42:16,21 43:1 44:9,13	44:16 48:4,5 48:10,11 49:24 50:2 51:9,21 52:17,20 53:1 53:3,11,13,19 53:19,23 54:2 54:2,11,11 55:1,5,5,10,19 55:24 56:1,2,4 56:7,11,18,19 56:24 57:5,10 57:14,17 58:24 59:4,11 60:7 61:5 63:13,15 63:17,21 64:5 64:13,21 65:2 65:6,14,17 71:14,15,16,17 71:22 80:11,16 81:22 85:25 86:15 87:4,6 99:1 155:3,17 155:19 156:9 156:13,20 157:3 164:17 164:24 165:5 166:10 169:17 170:11 171:3 173:23 174:1,3 178:4 179:10 179:15,24 189:11 192:15 193:25 194:4,8 194:10,13,23
	d d 6:1 41:23 42:7,14,19,25 44:4 51:22 52:5,7,18 53:7 60:13,17 80:7 87:12 121:16 123:17,18 143:10 155:15 168:1,7,8		

[ddm - delivery]

195:1 dead 163:9 deaf 187:23 deal 19:10 22:23 dealing 137:21 decide 75:11 decided 75:12 decimal 93:16 decision 57:14 66:4,18 67:1 68:14,23 75:24 75:25 76:20 77:16 78:6,12 87:17 88:9,20 170:22 176:19 decisions 76:17 77:25 declaration 4:19,24 5:4,5,6 18:8,17,18 19:13,21 20:4 20:12,19,21 21:4,12,15,19 22:4 38:2 41:12,14 43:11 44:20 46:22,24 48:15 49:5 52:2 61:14,21 66:8 79:13 82:11,25 83:16 84:2 89:2 101:21 104:3 111:2 118:24	119:10 124:6 126:2 129:18 142:5,22 149:1 150:20 154:13 156:1,13,24 157:4,5 164:12 166:4 169:8 170:1 174:1,11 178:2,12 184:24 185:2 192:12,20 197:13 198:8 199:25 203:17 205:14,20,25 206:25 208:1 declarations 8:17 16:2 17:18,22 18:14 18:20,21 19:5 21:23 22:1,2,5 22:13 37:15 38:1 45:5 49:3 49:3,7 65:25 67:5 75:23 83:24 89:12 92:14 99:21,24 189:9 192:14 199:18 decreased 181:1 decreases 182:9 195:12 decreasing 195:13	decyl 170:19 195:8 define 108:14 defined 72:17 105:3 106:1,1 109:2 154:2 188:11 196:2 defines 73:18 162:1 defining 184:1 definitely 27:16 36:18 46:17 63:17 73:3 77:13 79:16 113:9 126:1 150:18 162:8 177:14 180:20 180:20 192:4 205:1 definition 55:5 101:14 102:3 102:18 105:10 107:17,20 123:25 128:20 130:6 162:10 182:24 195:5 201:15 203:1 210:8 definitive 56:6 109:17 definitively 125:25 degree 102:6 102:10 103:1,1	103:9 106:10 106:11 113:25 degrees 103:16 dehydrated 199:1,2 204:7 207:25 213:10 delaware 13:19 deliberate 42:18 deliver 29:21 35:11 136:7 140:16 141:12 delivered 30:7 126:18 139:11 delivering 29:19 33:17 128:22 130:13 136:16 191:19 delivery 4:21 23:10,13 24:18 26:20,21 27:20 28:7,10,15 29:1,6,12 30:2 30:3,12,21 31:5,5 32:3,12 33:21 34:3,9 34:10,16 35:6 35:9,19 37:10 49:16 58:12 108:11 126:24 126:25 127:7 129:13 131:20 132:6 133:4 134:6,10,15,22
---	--	--	--

[delivery - development]

135:2,9,17,20 136:3 137:1,1 139:4,10,14,22 140:24 141:4,7 141:15,25 150:8 151:10 151:18 163:13 163:20 170:20 180:22 182:8 182:10,15 183:19 191:2 196:1 200:24 demonstrate 194:9 demonstrates 150:8 denatured 213:10 dennis 150:24 depend 148:12 dependent 35:6 35:12 72:4 73:24 95:4 141:9,17 depending 40:13,16 148:20 198:24 depends 30:15 34:25 53:21 91:15 98:19 102:22 130:11 135:5 149:17 169:14 210:7	depicted 120:2 120:5,7 deponent 218:3 deposed 10:8 10:16 13:8 deposition 1:14 2:3 4:14 6:3,12 6:25 7:12 10:5 10:20 12:14,20 12:21 13:5 14:10 15:20,25 16:6 17:5 18:9 51:20 82:21 215:3 216:1 217:16,24 218:1,6,10 220:4 derivatives 114:15 derive 93:9,15 derived 90:9 dermal 163:7,7 163:8,9 dermavant 14:14 describe 118:20 209:23 described 108:20 111:10 122:10 135:23 145:1 187:23 206:9 describes 59:3 163:6 170:17	194:11,13 describing 91:12 102:23 111:22,22 121:25 139:23 150:12 181:8 182:1 185:21 188:10 description 44:2,6 56:15 56:17 62:5,8 62:12,19 63:2 63:21 64:3,14 74:10 80:7 92:1 143:18 144:11 157:1 165:15 216:11 descriptions 91:13 170:24 descriptive 188:12 descriptor 174:7 design 191:17 196:6 designated 114:18 designed 190:19 191:15 desirable 139:20 140:4 desirably 207:13 212:15	despite 105:7 detail 65:23 74:14 88:23 detailed 13:2 116:15 203:3 details 84:11 detergents 55:6 55:21,25 57:7 57:24 87:11 determining 62:11 75:25 114:4 develop 28:15 35:7 37:4,5 127:18 128:3,6 129:14 136:6 136:11,25 developed 24:11 128:7 136:20 163:14 developing 24:18 30:18 31:1 33:3 109:15 128:24 development 24:23 25:1 31:15,20 91:17 95:14,25 96:7 103:13,18 106:12 128:15 136:4 139:3 141:23 152:20 213:10
--	--	--	---

[device - discuss]

device 29:22 33:18 35:10 devices 9:5,13 9:24 devised 112:18 134:5 diabetic 141:2 diagram 167:11,18 diazepam 18:2 23:1 36:14 39:3 71:21 72:5 81:1,16 126:4 127:10 127:12,18 128:4,8 129:25 135:8,10,18 136:7 145:5,7 145:11 147:14 147:19,21 148:2,3,5,23 189:13 207:6 207:16 diclofenac 148:22,23 died 132:13 difference 42:4 44:7 48:3 64:1 68:15 73:7 76:12 80:13,22 81:1,19 97:21 97:25 102:12 102:17 103:5 117:11 178:8	differences 10:19 72:23 73:12 74:5 80:18 81:7 different 18:12 37:17 42:1 44:10 72:7,20 73:4 76:6,24 76:24 85:1 90:15,23 93:21 96:2,5 97:10 98:23 100:18 101:3 104:25 105:1 108:19 109:7,9,9 110:5,8 112:3 112:11,18 115:7 117:11 118:16,20 123:11 125:11 126:17,17 129:1 134:11 135:3,10 148:16,17 167:12,24 176:7 181:5 191:20,21,24 195:7 207:22 209:18 210:22 difficult 29:17 125:2 diffusion 210:7 dig 61:8	diminishing 162:24 182:17 direct 41:13 78:24 79:9 89:2 103:3 128:11,11 148:25 directed 11:5 11:10 28:9 71:20,25 76:14 76:15 80:16 151:7 160:13 160:25 187:6 direction 65:5 directly 130:7 209:13 disagree 149:15 153:23 153:25 191:10 disappeared 157:24 disclose 52:20 57:5 60:16 62:20 63:3,9 149:10 151:17 154:17 155:3 155:16 156:20 157:3 164:17 201:18 203:21 207:5 disclosed 57:6 147:25 149:25 153:18 155:4 155:11,20,22	158:23 187:5 188:3 197:17 201:8 203:6 206:5 discloses 49:24 52:16 56:24 80:11 81:16 144:19 148:8 151:13 161:18 162:19 176:13 177:24 178:9 180:5,12,14,16 182:4 193:24 194:21,23 202:21 205:9 206:16 207:2,9 211:21 212:1 disclosure 62:13 63:8 157:13 187:15 204:21 208:7 disclosures 50:1 52:10 57:2 59:17 178:25 193:11 201:18 discover 118:2 discovery 187:6 discuss 25:5 49:14 52:25 60:7,10 88:7 89:22,24 129:21 143:1
---	--	--	--

[discuss - dose]

143:16 155:3 discussed 48:2 75:15 91:5 121:4 156:8,12 161:19 165:8 189:17 198:8 discusses 47:2 110:4,11 112:2 158:22 179:22 discussing 59:16 92:15 95:5 196:1 discussion 7:3 18:3 43:9 52:9 100:14 131:15 137:18 139:13 142:20 150:21 166:19 200:5,7 203:19 discussions 16:8 18:25 26:8 49:19 disease 130:12 dispute 45:6,10 45:23 149:21 149:22 212:1 dissolution 210:7 dissolve 145:3 145:3 distill 207:21 distillation 213:11	distinct 42:21 78:17,25 79:5 80:2,6,15 district 13:18 198:10 200:6,8 dnl 168:7 doctor 81:8 140:6,6,7,7,10 document 68:25 70:21 79:15 83:21,23 85:4 92:5,20 130:22 133:10 133:25 144:15 154:1,7 168:3 174:22 176:9 179:19 184:22 185:10 188:6 188:11,17 190:25 192:7,8 205:22,23 216:11 documents 8:20,22 9:2 17:21,23 18:2 18:12,13,16,20 19:11 48:1 50:18 77:14 97:23 104:2 118:19,23 131:9 145:20 178:7 192:25 211:10	dodecane 112:15 119:17 119:18,19,20 119:23 120:5,6 120:11,11,19 120:19,20 121:6,23 122:16,18,23 123:3,5 124:7 dodecyl 39:4,10 41:23 42:7,8 42:11,14,16,19 42:20,25 44:4 44:8,17 51:9 51:16,22 52:7 52:18 53:7 60:13,17 72:5 72:18 73:18 80:7 87:12 121:6,24 123:18 155:15 164:21,25 165:5,11,13,14 165:20 167:13 170:18 175:3,7 175:18,21,22 176:2,3 177:4 177:18,24 178:1,4,6,10 179:25 180:7 180:13,18,23 180:24 181:9 181:10,11,12 181:15,16,20	181:21 182:5 182:17,23 183:9,23 187:7 187:8,15,16 188:2,4,8,9,13 188:14,22,22 189:5 190:11 191:7,9 193:13 194:4 195:8 196:16 dodecylmalto... 179:15 dodecyls 191:7 doing 8:9,11 9:21 10:13 24:22 31:24 36:3 37:7 69:15 172:5 197:1 dominant 202:9 donovan 18:8,9 77:14 198:2 207:4,15 donovan's 47:8 198:9 200:7 201:7 203:21 206:12 dosage 127:5 130:18 134:20 136:11,11,23 182:14 dose 33:21 161:8
---	---	---	---

[doubt - effective]

doubt 9:9 download 69:17 131:4,8 dr 6:4,23 7:8,10 20:1 25:3 33:12 37:24 41:3 46:17 47:8 48:20 50:23 51:5 52:1 69:7 70:4 77:14 79:3,24 82:2,22 83:15 85:22 87:5,24 92:8 96:20 100:15 101:1 119:9 130:25 131:16 132:21 142:13,21 146:6 152:4 158:2 161:10 169:3 171:21 171:24 184:21 184:24,25 185:6,21 186:12,15,22 187:3,13,24 188:1,2 190:21 191:11 192:1 193:9 198:2,9 200:3,7 201:7 203:21 206:12 207:4,15 211:2 213:24 214:9 214:22	draft 167:24 drafting 167:23 drafts 18:16,16 draw 125:3,10 125:18 drawings 62:14 drink 198:25 drip 35:6 49:16 108:11 drive 136:25 driven 129:14 129:16 driving 50:17 196:14 drop 179:23 180:25 drug 4:21 11:15,17,18,21 24:2,2 27:23 28:1 29:1,12 29:16,21,21,25 30:5,12 31:11 31:21 33:7,17 33:21 34:12 35:11 37:10 38:20 58:12 81:3 95:18 116:19 127:5 128:22 129:22 130:11 131:20 132:6 133:4,12 133:17 135:6 141:10,17 152:21,22,24	153:16,20 154:4,8 158:25 161:1 179:6,8 195:10,22 209:13 drugs 23:22 27:14 29:19 30:7 32:7 40:12 95:17 107:1 109:16 116:18 126:6 126:20 127:4 129:24 134:6 134:11 135:3 136:9,17,25 138:1 145:1 151:15 162:20 162:23 197:6 dtobin 3:18 219:3 duly 2:4 7:5 217:22 dumb 62:22	102:16 121:4 165:8 earliest 25:8 early 25:12 ease 42:15 130:13 easier 13:13 19:9,10 66:6 118:3 156:18 168:19 easy 27:22 edited 131:20 edition 5:3 98:13 editions 22:20 education 23:4 23:7,11,16,18 23:24 104:5 educational 104:15 edward 150:25 151:2 184:25 185:6 effect 15:7 26:22 139:25 181:2 182:18 183:2,5,14 184:5,6 193:25 195:2,14,25 196:8 effective 138:23 180:9 194:5,23
		e e 6:1,1 39:3 71:21 72:5 121:16 207:6,8 208:17 e.g. 180:7 208:17 earlier 15:6 45:1 47:13 48:2 88:14,16	

[effects - epithelium]

effects 29:1 170:7,14 171:3 190:15 207:12 efficacies 126:17 efficacious 193:14 efficacy 130:19 efficiency 214:2 efficient 137:1 efficiently 133:17 136:17 either 17:7 18:19 22:22 33:2 74:25 75:21 91:21 92:20 117:24 117:25 125:25 137:12 195:11 elegantly 148:7 element 52:16 63:15 154:17 elements 62:20 63:3 155:9,21 elias 150:24 elka 131:20 embedded 18:17 embodiment 208:5 embodiments 56:15 58:12,19	emotional 189:17 employed 219:12 emulsion 202:2 emulsions 202:14 enabled 28:6 encountering 107:7 ended 12:20 32:19 214:25 ends 59:10 179:4 engaged 15:23 english 13:15 54:7 enhance 135:14 151:18 162:23 210:6,7 enhanced 134:23 151:8 183:20 184:5 195:16 enhancement 4:20 29:18 31:15 131:20 182:24 184:6 195:18 196:11 196:17 enhancer 26:25 32:7,16,22,23 34:11 35:1,4 56:13,21 57:18	58:14 160:22 161:6,22 163:4 163:19,24 164:9 182:5,8 183:10,24 184:2,13 189:12 194:5 194:22,23 196:3 208:8 209:22 210:9 enhancers 25:14,22 26:1 26:3,4,9 27:4 29:7,13 57:22 58:5,11 59:1 137:6,19,25 138:8 151:14 151:18 153:19 157:9,14,16 161:19 162:1 162:11,19 163:8 164:2,4 177:25 189:18 190:14 191:3 208:7 209:12 209:16,25 enhances 32:2 182:8 enhancing 29:12 30:22 32:1 55:2 152:21 195:25 enormous 141:24	ensuring 125:23 entire 15:22 24:3 142:3 entirely 90:2 entirety 104:5 104:14 entitled 24:8 38:10 43:17 45:7 47:12,18 62:4 82:24 85:18 89:8 110:2 126:3 129:18 131:20 132:5,25 134:1 134:1 138:14 152:14 154:16 154:23 160:11 172:10,20 entry 66:17 128:11 enumerable 108:21 environment 95:4 envision 101:5 125:15 envisioned 55:10 56:1 envisioning 99:18,20 101:11 epithelium 24:21 133:18
---	--	--	--

[equal - exhibit]

equal 147:20 147:22 equally 154:8 210:1 equates 188:2 188:21 errata 220:10 220:12,13 erratum 111:20 especially 55:4 55:23 56:3 81:14 129:13 210:5 essential 31:18 64:2,6,21 65:6 65:14,17 112:17 164:1 essentially 72:12 establishes 68:10 ester 151:9 esters 153:9 164:7 et 128:25,25 179:7 185:18 ethane 93:12 ethanol 38:23 39:3 40:4,5 71:21 72:5 145:10 147:13 147:19,21 198:20 199:5 199:11 200:19	201:15,16 203:5,12,21 204:8,18,21,23 204:25 205:4,5 205:6,9 206:5 206:11,16 207:8,9,12,14 207:17,21,25 211:22 212:2 212:11,14,15 212:18,23,24 213:1,8 ethanols 199:15 europe 12:1 72:8 evaluate 31:10 37:10 142:2 evaluated 64:23 evaluating 64:25 everybody 193:6 evidence 68:10 108:6,25 170:14 exact 91:18 exactly 78:4 examination 4:8,9 7:6 214:7 examiner 185:13,16	example 30:4 32:9,22 40:4 90:25 96:4 109:6 114:22 118:17 140:19 147:9 153:15 163:7 166:15 169:12 180:19 180:25 195:12 196:3 200:19 209:21 210:9 examples 32:6 59:3 95:16 109:5 148:6 151:19 159:1 170:15,25 191:19 193:18 197:7 201:11 201:22 209:24 211:18 212:5 excellent 32:13 except 216:2 exception 171:11 excerpt 59:22 60:22 excerpts 4:20 5:1 52:22,25 53:5 58:21 59:7,8 60:1,6 60:15 excipient 28:19 31:16 40:11 42:13 58:24	59:12 95:18 163:18,23 196:21 200:17 excipients 26:1 31:19 40:2,9 40:14 95:17,22 161:2 199:15 210:3 exclude 203:1 executed 216:12 exemplary 207:16 exemplified 197:7 exemplifies 135:19 exenatide 154:10 exhibit 4:15,16 4:17,18,19,20 4:22,23,24,25 5:1,4,5,6 13:24 14:3,4,7 19:12 19:15 20:10,12 21:2,4 22:11 38:3 41:13 43:12 52:3 66:4,18 67:7 67:14,15 68:2 69:24 70:5 82:6,8,16,19,20 82:21,24 84:12 84:14,15,15,21
---	--	--	---

[exhibit - facts]

84:25 85:1,2 88:24 89:2 92:5,7,9,10,11 92:21 109:21 130:23,24 131:17 142:10 143:2,12 146:18,19 151:24 152:3,5 157:21 158:5 160:6,7 166:23 168:4,15 171:19,20 173:9 178:13 184:19,20,24 190:4 192:9,12 196:5 198:13 211:4,11 exhibits 4:14 18:6,15 61:8 65:24 66:11 118:18 159:19 exist 116:7 136:12,25 exists 113:24 expect 96:23 165:25 189:4 189:21 190:19 213:19 expensive 32:20 128:25 213:18 experience 13:5 102:6 103:2,3	103:8,12,17 104:15,25 106:2,10,11,24 107:5 108:11 109:14,15 128:20 129:9 163:18 199:3 200:20 213:16 experienced 95:25 experiences 107:6 experiment 182:1 183:4 190:10,18,22 190:23 191:14 191:17 192:3 experimentat... 191:15 196:6 experiments 194:8,9 195:1 195:4 196:13 expert 10:21 14:21,24 15:1 21:4 37:1 49:2 49:7,7,15 82:10,25 185:22 expertise 140:20 192:2 expiration 219:20 expires 216:18	explain 45:3,5 89:25 90:6,13 90:18,21 116:7 126:6 127:9 144:18,23 151:6 167:24 167:25 197:23 explained 86:22 87:18 95:13 195:3 200:17 explaining 112:22 208:21 explains 112:10 137:24 138:7 145:5,9 147:12 163:3 197:1 explanation 33:11 57:14 140:13 195:19 explanations 195:18 196:9 196:12 express 53:3 expressed 192:14 198:15 216:13 expressly 52:25 54:10 63:6,8 63:24 65:4 180:12,14,16 208:5 extent 51:8 143:23 144:4	201:5 external 18:15 extracted 53:8 extremely 109:17 213:18 eye 3:6 151:20 179:23 180:22 182:15 183:5 195:24 210:17 218:17 eyedrops 182:10 eyes 168:21 f f5 83:7 face 54:3,4,7 facilitate 138:1 138:8 fact 11:2 13:20 32:17 47:18 54:1 57:8 102:25 105:7 116:10 140:1 149:10 155:14 156:14 164:21 171:16 174:14 196:6 210:11 factors 35:13 132:5 134:19 196:10 facts 108:5,24 118:9
--	---	--	---

[factual - form]

factual 10:23 fails 154:17 220:15 fair 26:2 42:3,9 42:24 48:8,13 50:19 53:24 71:2,24 89:19 125:11,14 155:23 191:10 200:11 familiar 83:21 113:22 173:14 183:17 185:11 family 13:20 67:25 70:19 far 12:24 14:11 15:3,25 17:6 25:16 26:23 27:12 48:14 53:13 127:14 127:16 148:20 176:23 191:19 192:11 194:13 202:13 212:9 213:18 fast 139:22 fatty 164:6 federal 77:17 78:1,6,12 feel 49:14 65:1 164:9 feeling 214:15 field 103:13,17 106:12 185:22	figure 110:15 119:16,22 120:4,6,14 134:6,17 146:25 164:23 167:15 figures 112:1 193:18 file 172:3 filed 59:18 62:13 66:19 143:13 184:25 filings 47:3 filters 213:14 final 18:18 34:23 66:4,18 66:25 87:16 88:9,19 financially 219:14 find 97:13 159:21 182:10 191:16 finding 28:10 61:19 168:19 finds 27:24 fine 7:17 167:4 186:25 205:23 finish 8:7 15:4 81:11 finished 15:5 186:23 firm 6:21 219:22	first 7:5 8:12 19:12 23:3 25:11 31:9 38:2 52:4 59:22 62:10 89:14 93:11 106:22 113:25 116:8 119:13 132:12 133:3 134:3 137:23 138:7,17 142:25 152:18 153:15 157:3 158:4 170:6 175:11 181:6 185:11 fit 76:23 five 10:12,17 190:14 191:6 191:21,24 flew 16:11 flip 46:20 flipped 62:1 flipping 199:24 fluid 188:16 focus 15:24 28:2 29:17 96:9 181:6 194:19 focused 155:25 156:14 focusing 52:10 72:22	fold 31:24 folder 67:12 169:1 follow 114:1 204:1 following 173:2 217:21 218:11 follows 7:5 218:6 force 15:7 196:14 foregoing 216:1,12 forgive 168:12 form 6:21 25:15 28:12 30:19 38:18 41:4,22 43:25 48:12 53:2,20 59:21 63:5,22 64:16 66:21 68:24 71:6 72:2,14 90:14 91:1,6,22 93:25 94:22 95:15,21 96:24 97:6,19 99:9 99:16 100:2,25 101:6 103:21 110:14 115:16 117:8,17 121:7 122:3 123:1,8 125:5 126:23 127:5,20 128:5
---	--	---	--

[form - france]

130:3,10 134:12,20 135:4 136:23 138:3 144:2 145:13 150:2 151:16 155:12 156:16 165:12 170:12,19 175:1,2,2,9,19 176:4,17 178:1 179:12 181:13 182:6 187:10 187:17 194:6 194:25 201:20 203:9,14 204:18,24 206:7,18 209:8 formed 78:13 172:4 174:6,6 176:19 212:24 forming 63:25 66:13 67:1 68:14,23 83:23 forms 41:24 95:22 97:22 120:7 130:18 136:11,11 182:14 200:23 207:22 209:18 210:22 formula 165:4 165:9,18 formulate 31:14 32:3	formulated 64:14 88:21 126:18 208:15 formulating 65:7 formulation 11:6,7,8,13,14 24:14,23,25 25:18 26:5,9 29:23 30:11 31:17 32:21 34:7 35:1,11 44:16 59:12 71:4,11,25 72:13,22,24 73:5,12 74:6 109:11 130:12 134:1,5,11,19 135:3,10,18 139:2 141:11 141:20 148:8 148:17,20 149:5,12 150:8 158:25 161:1 161:15 164:5 190:10 191:18 195:10,22 196:21 199:4 200:23 201:25 202:19 204:22 209:2,4,13 213:9 formulations 22:23 23:8	24:12,18 25:10 25:14 26:12 30:18 31:1 32:15 33:1,3 35:7,16,22 36:10 37:5 40:3 41:20 43:24 44:13 48:10,10 58:24 71:4 72:11 106:25 127:15 127:18,21 128:1,4,10 135:13 144:19 144:23 147:25 148:18 149:10 149:24 151:15 153:19 155:4,7 155:20 176:21 179:23 185:24 189:12 197:6 197:17 199:5 201:9,13,19 202:21,21 207:2 208:21 212:2 formulators 134:9 135:1,8 fort 219:23 forth 38:17 50:18 62:7 72:1 99:20,24 102:2 164:16 167:16 199:17	202:22 fortunately 116:19 forward 25:17 138:12 197:20 found 18:6 36:16 67:20 70:17 74:15 75:3,16 145:10 147:13 167:25 193:12 foundation 74:19 75:5,19 76:3 77:4 78:8 86:4,17 87:1,8 87:23 107:18 161:4,20 162:2 162:21 163:5 172:17 173:6,9 185:15,25 187:10,18 191:12 founded 24:23 four 10:11,17 13:9 24:3 90:14 93:11 106:22 132:8 190:14 fourth 5:3 179:2 frame 191:18 framing 103:24 france 141:1
---	--	--	--

[free - glycosides]

free 111:18 207:25 209:1 freezes 167:7 frequent 77:22 friendly 138:23 front 8:17 9:4,6 9:7 19:6 27:14 38:3,5 43:12 43:14 44:21 59:13 60:4 70:5 92:9,12 101:21 111:24 131:1,2,3,17 142:5 145:21 158:5 168:16 178:14 184:22 184:23 189:14 210:18 froze 137:11 156:6 frozen 9:17 43:6 137:9 167:2 full 114:8 208:5 functional 117:11 functionality 95:15 98:25 fundamental 64:9,13 80:22 96:7 114:14 178:6 200:23 fundamentally 23:15 210:20	further 51:12 55:6 72:18 106:23 160:22 161:5 189:4,20 213:23 214:18 214:21 219:11 219:14 future 138:14 g g 6:1 143:10 gears 37:14,25 82:3 89:3 142:4 gel 202:1 general 23:12 23:14 28:10 32:10 33:4 56:15,17 57:21 81:7 91:13 92:1 96:8 97:21 98:18 114:10 115:8 129:21 175:2 177:18 generally 30:24 33:10 41:19 74:14 99:14 110:4 114:3 116:6 129:3 130:16 134:16 210:14 generating 138:21	generic 93:9 116:13 170:19 geneva 113:21 gentamicin 27:15,18,21 28:1,17 getting 13:10 33:7 182:19 give 32:9 38:16 47:20 49:14 50:5 68:3 69:16 78:23 79:25 90:25 96:4 98:20 101:1 111:1 114:8 116:12 140:25 156:22 164:5 173:6 177:19 208:24 214:3 given 8:9 14:10 14:24 15:1 48:14 65:1 76:18,19,21,22 85:5 99:3 109:5 136:23 177:13 191:1 216:13 217:24 218:9 gives 58:18 181:2 giving 14:18 75:21 89:17 189:23 192:3	gizurarson 4:19 83:1,16 84:3,5 85:24 86:13 gizurarson's 87:5 glp 136:18 154:10 glucose 9:10 181:1 182:9,17 183:15,18 glucosides 71:11 80:9 glycol 190:12 191:7 glycols 144:21 206:21 208:14 glycoside 38:25 39:10,12,14 44:8 71:8,14 71:16,18 72:17 73:18 169:14 187:7 188:7 glycosides 60:7 60:10 61:16 85:19 87:10,13 151:9 153:9 166:9,10 169:24,25 170:10,11 177:24 179:11 179:14 192:16 193:13
--	--	---	--

[go - gwozdz]

go 7:1 8:1,7 11:24 33:13 34:18 37:22 39:20 43:7 44:1 51:2,20 65:23 66:7 67:25 69:10,25 74:20 80:24 81:25 89:21 90:13,21 100:13 111:1 111:19 114:11 119:7 120:10 125:9 131:13 132:18 137:17 142:17 144:18 146:11,14,15 150:20 155:24 157:25 159:3 165:3 167:20 169:9 170:13 172:24 180:4 180:19 185:19 202:24 205:13 207:20 210:24 211:7 212:8 213:12 214:4 214:23 goes 10:20 39:13 55:6 58:14 74:2 114:17 147:17 158:18 160:21 164:20 183:15	193:23 207:12 going 7:11,11 8:10 12:5 16:11 25:16 37:16,17,25 40:7 41:13 42:24 44:1 50:18 54:8,20 65:1 69:3 79:10,11 81:25 82:2 84:11 89:3 103:3 119:2 125:20 130:15,21,23 140:8 144:9 145:17 146:14 148:11 152:5,9 155:24 157:20 159:24 160:5 161:24 164:12 171:12 172:21 180:19 182:16 182:20,22 183:1,18 184:17 187:1 187:19 189:14 192:1 195:9 196:3 204:4 205:19 210:23 211:12 good 6:16,19 7:8 31:22 119:3 140:13 160:8 192:20	goods 141:13 grade 198:22 gravity 34:5 great 7:11 38:6 67:18 92:24 151:25 211:12 greater 147:19 147:22 213:3 greatest 193:25 greek 93:16 118:7 ground 7:12 15:5 group 23:22 56:5 58:5,11 80:8 90:8,9 107:5 110:17 115:21 groups 89:22 110:19 117:12 125:22,22,23 guess 8:12 9:13 15:24 16:5 42:22 55:15 57:2 59:5 75:2 100:9,20 102:19,22 111:19 116:22 119:13 128:1 136:17 158:4 160:2 175:13 176:5 196:8 198:23 199:9 200:9 206:23	209:17 guessing 125:20 guidebook 134:16 guys 84:16 158:12 gwozdz 4:17 143:2,3,3,5,6,8 143:20,25 144:7,12,19,23 145:2,5,9,15,24 146:1 147:24 148:8 149:4,9 149:11,25 150:12,13 151:23 155:2,4 155:6,11,16,20 155:22 156:14 156:19 157:1,3 157:10,12 158:3 164:16 189:11,14 193:10 196:25 197:7,16 201:8 201:10,18,21 202:20 203:6 203:20 204:21 205:9,17 206:3 206:16 207:1,4 207:5,9,12 208:8,20 211:3 211:11,21 212:1
--	--	---	--

[hale - hypothetical]

h	hear 7:20	highlights	huh 39:8 47:1
hale 17:15	137:14 156:4	189:16	59:20 69:9,19
half 8:5 158:19	heard 100:15	highly 127:10	84:20 122:17
halfway 212:8	106:13 214:9	166:9 169:17	156:23
hand 94:14,15	hearsay 187:11	169:24 170:9	humectant
161:25 212:9	187:18 188:6	170:17 171:2	32:13
216:13	held 35:9	171:11,14	humectants
handful 119:16	103:16	173:21,22,25	209:16
119:22	help 26:16	174:15,19,25	hurley 3:20
handing 171:24	34:11 83:6	175:4,12,24	6:21 8:13
hannah 3:20	148:11	historically	16:16 219:5
6:21 219:5	helped 176:19	17:25	hyal 28:22
happen 18:24	heptane 112:16	history 171:25	hyaluronan
214:12	hereto 218:4	172:3 192:7	27:1
happened	hesitate 109:14	hit 83:7	hyaluronic
98:20 177:20	hexane 115:5,6	hold 36:20	27:1,3 28:4,19
193:10	115:13,18,19	69:13,17 83:5	28:21 30:10
happy 61:7	115:24 116:4,6	87:15 92:17	32:12,15
hard 26:6	116:11 117:16	142:15 146:22	163:16,22
59:14 81:13	117:16,17	holds 102:9	hydrated 28:5
103:24 156:18	hf 191:17	honest 42:17	29:15 32:13
harder 7:22	hhurley 3:25	74:25	hydrating
harwood 2:9	219:10	honestly 25:16	30:11
3:15 218:25	high 130:15	26:10 27:13	hydration
hate 34:24	133:6 138:4,9	35:5 74:20	30:12
head 12:19	higher 149:14	78:14 167:22	hydrocarbon
85:20 118:1,3	183:5	hou7950193	90:1
209:25	highlight	216:25	hydrogen 90:2
headers 154:25	174:17	hour 8:5,5	124:18,23
heading 23:4	highlighted	37:18 218:7,8	125:1 199:13
52:5 62:4	98:16,17 141:6	hours 16:13	hypothetical
157:9 197:16	195:2	hovgaard	101:11 107:12
	highlighting	178:20,22	108:10
	8:24	179:1,2	

[i.e. - information]

i	important 7:18	106:23 116:15	increase 31:23
i.e. 212:17	23:21 30:17,25	135:25 155:4	56:13 58:6,16
idea 34:7	95:23 97:9	155:20 156:15	58:17,18
111:21 116:12	98:24 100:17	197:17 200:25	162:20 171:9
identical 41:21	100:18 109:17	206:9 207:4	179:8 189:5,21
43:23	178:8	218:11	increased 28:6
identified 4:14	impossible	including 10:5	32:3,14 148:22
27:8 35:3	125:10	26:23 55:3	increases 179:6
76:12 80:18	impression	57:23 58:1	180:25 188:15
81:19 110:17	9:21	62:14 118:7	195:20
179:10 194:4	improve 129:4	126:4 133:6	increasing
identifies 94:9	134:6,10 135:2	135:22 141:5	138:21 139:5
94:10 110:7	135:9 136:2	141:10 151:20	139:15 152:21
194:7	improved	153:8,19 155:7	182:25
identify 60:7	179:5	163:20 169:17	indented
60:12 118:6	impurities	171:3 173:23	166:19
155:21	40:12,19,24	173:25 174:2	independent
identity 216:11	impurity 40:5	177:24 179:24	65:18
idiot 17:1	40:10	192:7 194:4	index 4:1
ignore 76:20	inappropriate	198:20 201:8	indicate 128:6
iid 18:4	27:24	211:22	indicating
illustration	include 44:13	inclusion	109:4
147:18	59:4 165:11,20	198:17 209:6	individual
immediate	200:17,18	incorporate	95:18 97:23
139:24	202:11 204:25	196:21	107:23
impact 195:21	208:9 209:12	incorporates	industry
195:23	210:9	85:18	136:24
impermeability	included 35:17	incorporation	infection 34:16
162:25	57:14 61:13	86:8,9,14,24	infections
implies 175:6	106:15 120:21	87:6 109:11	34:13
imply 175:17	121:5 174:7	incorrect 76:1	influences
importance	201:1 209:16	144:5	109:8
98:16	includes 59:9	incorrectly	information
	86:8 102:5	117:19	218:9

[informed - involved]

informed 62:11 64:1 143:19 170:22 176:19 infusion 130:6 ingenol 11:21 ingredient 27:10 30:17,25 42:2 58:4,10 109:18 139:5 208:9 ingredients 39:17,23,25 40:18,21,23 72:9 73:3 74:11 148:19 188:21,21 191:21,24 195:7 204:23 inhale 140:22 inherently 31:22 63:6,9 63:24 198:21 200:16 202:11 204:17 206:10 inhibitors 154:10 inject 140:19 140:20 209:20 209:22 injectable 209:6,13 injected 209:14 injecting 130:6 210:15	injection 126:21 130:1 136:20 139:11 141:3 208:16 208:22 209:1,3 209:4,9,18,18 209:19,20 210:16,22 injections 136:22 210:8 210:12,17,18 210:19 instance 2:4 instant 208:12 208:16 instructions 118:1 instructs 7:25 instrument 216:12 insulin 179:16 180:1 182:19 182:19 183:16 183:19 214:10 214:13 intact 163:12 intellectual 136:13 intended 37:12 208:21 209:2 intending 107:14 intention 37:9	inter 83:17 interaction 184:8 interactions 23:14 interest 136:10 138:21 139:5 139:15 interested 33:3 191:1 219:15 interesting 25:23 34:4 95:9 128:19 150:3 184:11 interestingly 195:20 209:15 internal 37:8 internally 35:20 international 113:11,20 interpreted 198:4 interrupt 7:23 54:21 81:9 interruption 168:12 intradermal 209:19 210:8 210:11 intradermally 209:20 intranasal 24:11 106:24	139:18 intranasally 107:2 138:2 209:3 intravail 60:24 61:1,4,10,15,17 intravenous 209:19 210:16 introduced 175:12 introduction 5:2 invalid 15:2 invented 12:6 13:21 invention 58:13 64:22 65:15 147:5 152:15 152:19 153:5,8 158:10,17 161:5 179:5 187:5 211:19 inventor 11:4 151:3 185:7 187:3,4 investigated 136:2 investigation 126:25 196:12 investigations 195:6 involved 27:11 34:2,15 77:21 104:2 116:19
---	---	--	--

[involved - knew]

163:21 involves 45:10 45:24 involving 26:12 ions 199:13 ipr 4:16 8:18 12:23 14:13,16 38:14 41:17 43:20 66:4,19 67:20 70:17 74:17 75:12,12 75:16 77:2,11 77:25 82:19 84:4,25 92:6 143:25 144:7 151:4 185:7 189:9 ipr's 68:22 ipr2025-00465 1:9 217:9 iprs 172:4 187:4 ironically 202:12 irrelevant 143:7 irritating 148:9 148:13,14 149:6,12 iso 91:1,14,21 110:8 112:5,15 124:2 175:2 isohexane 115:22	isolation 171:14 190:16 190:25 isomer 95:15 111:4 112:11 120:5,11 isomeric 95:21 95:22 97:22 120:6 isomers 89:23 90:15,23 91:25 95:13,16 97:10 100:18 110:5,8 110:11 111:4 112:2,16,16,24 116:6,10 119:17,23 124:6,9,13,17 124:20 125:3 125:15,19 167:24 171:7 171:10,10 isopentane 110:16 111:5 issue 11:2 38:14 41:17 42:5 43:20 69:8 131:10,11 151:3 155:19 168:6 185:7 187:3 204:10 issued 16:1 46:1 87:17 88:11,15,20	111:20 issues 8:10 10:3 21:25 64:3 70:1 137:21 141:16 155:2 198:8 issuing 74:24 118:14 italicize 174:15 italicized 175:25 iterations 125:9 167:20 iupac 113:12 113:14,17,22 114:2,7,13 115:9,12 116:14,22 117:5,16,20 118:5,16 121:3 121:9,14 122:2 122:4,8,11,15 122:22 123:5,9 123:12,14,20 123:25 165:10 165:15,19,22 165:23 iv 126:10,21 130:1,5,6 209:6,23,23 210:14	j job 1:22 14:2 216:25 jones 3:4 6:18 218:15 judges 15:13 julie 1:23 2:7 6:9 217:19 219:19 jumping 44:19
			k
			keep 31:11 83:9 119:2 146:14 186:25 keeping 119:1 keeps 172:21 204:3 key 18:3 80:13 80:18 157:15 196:13 kilodaltons 214:17 kind 15:4 16:10 19:3 28:10 29:5 31:14,20 62:24 63:1 106:13 119:5 138:16 139:23 141:23 195:15 197:7 kinds 109:12 knew 22:18 133:19 193:10

[know - landmon]

know 7:22,24 8:4,6 9:14,16 9:20,23,24 12:13,17 14:15 15:25 16:2 17:2 18:3 19:1 19:5 22:9,18 25:5 29:19 30:16 31:21 32:6 33:8 34:24 35:1,13 36:9 38:3 40:1 40:6 41:14,25 43:12,15 47:25 49:17,17 56:21 57:11 59:9,14 60:20 61:1,4 61:10,13 64:10 66:8 67:24 69:7,20 73:6 76:16,22 77:20 78:3,3,14 84:7 84:11 89:6 92:8,22 95:12 95:14 98:23 100:9 102:20 104:24 105:14 105:14,18 107:6,15 108:7 109:16,23 111:10,24 113:24,24 115:20 116:7 116:17,25	117:1 118:1,16 130:25 131:24 132:1 133:19 135:5 136:14 136:24 137:11 138:18 139:22 139:23 140:24 141:18,19 142:23 143:7 149:1 152:8,12 154:3,8 157:4 159:23 164:13 169:10 171:15 171:21 172:25 175:1,15 176:10 177:5,6 178:16 179:20 182:9 184:15 184:21 186:14 187:24 188:25 190:23 191:2 193:2 194:12 196:15 197:13 199:10,10 200:3 206:10 knowledge 20:4,6,21,23 21:15,17 48:21 106:23,25 107:2,14 108:12 159:18 159:21 known 30:16 30:24 33:5	42:13 57:17 61:17 113:17 116:15 126:7 127:9 133:17 133:22 137:25 163:3,11 213:3 216:10 knows 207:18 l l 121:16 168:1 168:7,8 label 116:11 117:16 121:14 123:9,10 124:2 labeled 110:15 110:22 111:7,9 113:24 115:6,7 115:18,19 116:8 118:19 122:8,15,18,23 123:5,10 132:22 137:6 146:23 165:25 166:1 labeling 109:3 113:12 116:3 116:13 118:16 118:18,21 123:12,17,18 123:19,20 176:7 lack 174:7	lacks 86:4,17 87:1,8,23 161:4,20 162:2 162:21 163:5 172:17 173:9 185:15,25 191:12 lahat 185:18 laid 167:12 lance 67:10 69:3,10 82:4 84:14 92:4 130:21 146:17 152:1 157:20 159:22 160:4 168:25 171:18 184:17 landmon 3:3 4:8 6:16,17 7:7 9:22 14:5 17:3 19:16 20:11 21:3 25:2,5,7,8 25:20 28:14 30:23 32:25 34:19 35:21 37:19,22,24 39:1 41:11 42:3,15 43:10 44:11 48:8,17 49:1,20 50:6 50:25 51:2,5 51:15,19 52:1 53:5,24 58:21 59:22 63:11,25
---	--	---	--

[landmon - limitation]

64:20 66:23	132:18,21	188:19 190:7,8	led 96:2
67:16 69:1,3,6	134:24 135:7	190:20 192:5	left 94:14 111:5
69:10,13,19,23	135:16 137:3	193:2,5,8	121:10,19
70:2,4 71:10	137:20 138:6	194:20 196:19	161:25 179:3
72:10,21 73:8	142:11,19,21	200:1,3 202:17	legal 62:4,7
73:20 74:23	143:9,11 144:4	203:5,12,16	77:19,20
75:7,22 76:9	145:14,22,25	204:20 205:2	219:21 220:19
77:9,24 78:5	146:4,6,12,15	206:15,23	legally 10:19
78:10 79:3,8	146:21 150:19	209:11 210:23	73:6
79:23,24 80:10	151:21 152:1,4	211:2,12	length 112:3
81:4,13,24	155:18 156:4,7	213:22 214:5	173:21 174:24
82:2,4,10,14,18	156:8,17	214:21 218:7	195:20
82:22 83:12	157:20 158:2	218:14	lengthy 203:18
84:13,20,23	158:15 159:22	language 51:7	leo 12:3,6 13:16
85:9,13 86:12	159:25 160:4	58:23 59:11	13:19
86:21 87:3,15	160:10 161:16	157:9,10 174:1	letting 9:24
88:6,7 91:8,19	161:23 162:6	202:18	level 145:12
92:3,4,8 94:3	162:18 163:2	laptop 9:4	147:14 196:16
94:17,24 96:15	164:11 165:17	large 105:8	198:22 201:24
97:1,12 98:2,8	167:8,10	107:15 139:12	204:8
99:13,19 100:5	168:14,15,24	189:18 194:11	levels 40:8,13
100:15 101:7	169:3 170:8	194:18 197:6	150:5 157:1
104:4 107:13	171:1,18,21	larger 154:11	182:18 195:13
107:25 108:18	172:19 173:7	late 36:8,21	200:20 201:15
109:19 110:20	173:10,19	law 196:20	202:11
115:23 117:18	174:8 175:6,17	laws 213:11	light 150:7
118:12 119:5,9	175:23 176:12	lawyer 12:25	176:13
121:15 122:6	177:1,23	48:24 62:22	lights 150:15
123:4,14 125:2	179:18 181:18	layer 30:13	ligon 23:13
125:13 127:2	182:3 183:7,21	163:9	likely 40:15
127:22 128:16	184:17,21	lead 108:19	103:4 194:16
129:2 130:5,21	185:19 186:2	learned 113:25	limitation
130:25 131:6	186:10,11	leave 50:23	73:21 203:6,10
131:12,16	187:2,13,21	195:10	203:13 207:1

[limitations - looked]

limitations 45:14,15 46:1 62:15 128:10 128:21 129:12 204:22 206:4 line 37:17 119:2,3 147:7 179:2 212:13 215:4 linear 101:6,20 104:22 105:8 105:22 106:18 108:3,22 109:4 109:8 110:24 111:4,7,8 115:19 116:5 117:17 120:5 122:10,19 124:4 164:21 165:5 166:9 169:25 170:10 171:8,11 177:17 183:14 lines 106:22 162:14 link 163:23 linked 28:19 98:25 links 72:17 lipophilic 127:10 129:24 133:12,16 144:25 158:25 164:3	lipophilicity 134:18 liquid 160:25 list 14:9,12 53:11 55:3 56:20 57:23 58:1 65:24 66:10 72:9 159:18,21 164:2 185:5 listed 12:8 18:21 27:16 39:24 40:1,18 54:16,22 55:6 55:14,25 57:7 64:10 104:21 110:21,24 111:16,23 153:15 159:18 210:21 212:6 listen 41:5 listing 66:17 71:11 73:3 108:2,22 lists 53:23 57:22 93:20,23 110:12 literally 25:24 litigation 12:23 12:25 198:10 200:8 203:22 little 12:10 37:25 65:22 82:3 89:3	119:2 124:12 142:4 live 3:22 219:7 lived 129:11 llc 1:5 217:5 220:3 llp 2:9 loading 149:14 local 30:20 31:4 32:11 33:15,16 138:22 localized 33:6 35:19 locally 30:4 126:25 136:3 located 6:7 locations 120:12 lodge 41:6 long 11:16 12:25 25:24 30:8 33:20 42:20 47:25 62:21 98:14 104:10 125:6 125:20 126:7 129:11 138:16 144:10 173:22 174:2,19,25 175:4,6,10,11 175:14,14,15 175:17,21,23 176:1 188:12	longer 30:5 63:1 180:6 193:13 longest 114:16 115:1 121:9 look 12:10 13:1 19:12,25 20:18 23:3 24:13 28:20 29:2 31:4,13 32:20 33:17 38:1 46:3,18,19 50:7 61:10 62:12 71:19 73:8 76:7 78:24 79:9,13 86:20 111:3,25 117:1 125:21 132:4 136:16 137:22 142:21 147:7 150:19 152:5 157:18 159:9 161:24 167:19 168:19 173:14 175:13 181:3 186:12 187:25 188:24 189:24 196:24 200:21 211:17 212:13 looked 18:1,3,6 24:20 26:22 29:3,3,5 34:9 34:13,15 55:13
---	---	--	--

[looked - marked]

61:7 111:20 163:18 182:22 182:23 191:2 195:8 196:4 looking 19:23 26:15 27:5,14 27:17,20 28:5 28:7 29:20 30:9 31:6,7 33:5,6 36:5 37:14 38:1 44:5 47:8 50:4 54:24 61:6,12 61:20 68:4 81:4 82:17 83:10 91:11 110:6,15 137:19 154:24 165:14 167:2,9 170:1 174:23 189:25 190:4,6 190:9 196:13 197:5 199:22 lorazepam 36:17 lost 100:13 142:14 lot 27:25 28:20 30:1 46:23 47:6 62:3 118:3 135:22 136:15,15 167:7 192:25 199:12 214:9	lots 29:25 104:10 144:15 148:19 210:15 love 33:10 low 154:9 lucky 136:18 lunch 119:4,6 119:10 m m 36:20 m18 27:2,8 m20 27:2,8 m82 36:20 machine 2:8 made 29:9 34:21 90:1 93:14 99:15 101:19 148:18 173:11 190:17 197:9 218:3 madera 14:18 maggio 4:24 150:25 151:2 184:25 185:6 185:21 186:22 187:3,13 188:1 188:2 190:21 192:12 maggio's 191:11 main 39:17 48:2	maintain 31:11 make 7:16 8:2 14:2 20:8,25 21:19 22:6 51:8,20,22 66:6 95:23 115:1 146:22 156:17 159:5 makes 25:7 making 47:22 51:6 57:13 148:2,3 188:17 201:2 maltose 123:18 maltoside 39:4 39:10 41:23 42:7,9,11,14,16 42:19,20,25 44:4,8,17 51:10,17,22 52:7,18 53:7 60:13,17 72:6 73:18 80:7 155:15 167:13 170:19 175:3 177:19,25 178:1,4,6,10 179:25 180:13 180:18,23 181:9,10,11,12 181:15,16,21 181:21 182:5 182:17,23 183:9,23 187:7	187:8,15,16 188:2,4,8,9,13 188:14,22,22 189:5 190:11 190:11 191:8,9 193:15 194:4 196:16 maltosides 85:25 87:12 180:8 man's 168:21 management 140:16 manufacture 199:6 manufactured 150:11 marc 1:15 2:3 4:7 6:4 7:4,10 19:13 215:2 216:1,5,10 217:16,22 220:4 march 1:16 2:6 6:5 143:14 215:3 217:17 219:16 220:2 marginal 119:5 mark 17:13 154:3 160:5 171:19 184:19 marked 14:4 19:15 20:10 21:2 67:12,14
---	---	---	--

[marked - membranes]

69:4,24 82:21 82:23 84:21 92:7 130:23,24 146:18,19 152:3 159:4,5 160:7 171:20 184:20 211:13 market 11:24 11:25 127:7,12 127:23,24 128:1 129:4 142:1 150:17 163:21 marketed 12:2 master's 102:5 102:10 103:1,9 103:16 106:10 107:11 material 56:13 58:6,16 64:2 65:7,14 materials 40:3 55:4,24 56:3 109:3 185:4 195:17 matter 38:10 43:17 112:16 142:1 176:13 matters 17:9 maximum 184:7 mcdermott 2:9 3:14,21 6:8,20 16:20 218:24	219:6 mean 16:13 23:25 32:8 35:13 41:25 42:1,20 47:15 47:18 54:6,21 59:13 64:10 73:2 74:8 79:17 80:5 88:23 91:25 98:13 102:21 107:13 111:15 111:18 112:5 114:6,10 122:10,19 130:6 134:13 143:7 149:18 151:17 154:7 163:6 172:12 174:8 175:14 183:21 190:9 190:18 191:4 191:22 195:1 200:12 205:21 210:13 212:4 213:6 means 6:12 29:25 30:2 56:13 58:16 72:20 73:6 175:15 177:21 195:25 201:23 201:25 203:7 204:16,16	207:23 212:20 meant 32:17 177:2,3,3,21 measure 27:23 28:1 130:19 measured 31:22 measures 199:13 measuring 183:18 mebutate 11:21 medic 140:8 medical 140:10 medicament 160:19 medicinal 23:11 160:14 160:16 medpharm 25:12 34:2,14 35:20 meet 16:18,22 105:10 202:8 203:6 204:21 206:3 207:1 meetings 16:15 meets 180:14 180:15 meezan 4:15,23 150:21,24,24 151:6,13,17,21 153:18 155:3 155:11,16,23	156:19 157:3 164:17 166:8 166:20,20,23 168:2,16 169:8 169:23,23 170:5,9,13,15 171:2,16 172:1 172:3,15 173:16 174:7 174:11 175:7 175:17 176:2 176:13,20 177:8,23 178:3 178:9,13 180:5 180:12,16,20 182:4 183:9 185:1,17 187:4 187:6,14,23 188:3 189:10 189:15,15 191:20,25 192:7,14 193:10,12,24 194:3,7,13,21 194:22 197:9 melting 109:9 207:22 members 93:11 membrane 163:11 195:23 membranes 148:10 149:6 149:13 170:20
---	---	---	---

[memory - move]

memory 16:10 menlo 3:24 219:9 menthol 164:4 mention 47:19 126:12 150:23 170:23,24 mentioned 13:8 14:7 17:21 18:12 19:5 26:11 37:24 41:24 42:2 78:15 118:17 123:23 124:6 126:9 142:22 145:7 184:2 mentions 36:17 57:12 160:13 met 16:12 106:17 107:17 metabolism 141:16 metered 161:8 methane 93:12 method 58:9 71:3,20 72:6,7 72:7,18,22 74:9 76:14 112:17 methods 107:1 methyl 96:3,3 110:17,18 115:21 122:12 123:17 124:3	125:22 methyldodec... 122:9,19 123:23 methylpentane 114:23 115:4,7 115:14 116:1 methylpropane 96:3 methylundec... 121:22 mezin's 192:1 michigan 186:4 micro 178:4 middle 60:18 121:19,20 166:19 migraine 139:8 migraines 24:19 mime 9:21 mind 23:19 133:22 minus 183:1,1 184:9,9 minute 131:13 132:12,15 218:7,8 minutes 214:3 mischaracteri... 174:21 202:23 misconceived 199:9	mismarked 84:10 missed 50:15 191:23 misstates 188:5 mistakes 111:19 misunderstood 43:2 47:4 79:16 122:15 mitchnick 17:13 mixed 101:4 mixture 144:20 147:25 191:9 212:2 mlbt 24:16,22 moiety 164:21 165:9,18 175:8 176:2 molecular 134:18 138:5,9 139:12 154:1,4 154:4,9 189:18 194:11,18 197:6 213:15 213:20 214:12 molecule 38:22 90:7 127:10 153:15,20 154:7 165:5 molecules 61:3 133:13,17 138:5,9 153:16	153:20 154:4,8 194:11 moment 20:9 21:1,20 22:21 43:8 49:15,18 69:16 70:1 96:16 131:5 136:18 177:16 188:12 196:15 monday 16:13 money 129:16 monitor 9:8,10 moot 201:9 morning 6:16 6:19 7:8 mosanna 24:13 25:18,21 33:5 37:11 motivate 192:15 motivated 127:17 128:3 128:17 134:10 135:2,9,17 136:6 189:11 motivation 129:3,5 136:15 136:16 mounjaro 136:19 mouth 54:1 140:23 move 37:17 188:23 192:13
---	---	--	---

[moving - nasal]

moving 83:9 156:3 157:23 mucociliary 29:24 141:16 mucosa 28:6 35:24 56:14 58:7,17 128:13 134:15 135:23 139:25 141:5 163:10 195:24 mucosal 23:10 24:21 mucosity 28:7 mucous 148:9 149:6,13 mucus 23:10 multifactorial 130:14 multifunctional 210:4 muscle 33:7 126:16 muted 199:16 mwe.com 3:18 3:25 219:3,10	53:19,23 54:2 54:11 55:1,5 55:10,19 56:1 56:4,7,11,18,19 56:24 57:5,10 57:14,17 58:24 59:4,11 60:7 60:17,18 61:5 63:13,15,17,21 64:5,13,21 65:2,6,14,17 71:16,17 80:7 80:16 81:22 87:4,12 90:19 90:25 91:5,14 91:21 92:25 93:21,23 94:1 94:4,6,8,9,10 94:13,16,20,20 94:25 95:1,8,8 96:11,12 97:4 97:5,16,16,17 98:4,5,10,11,16 98:18,24 99:1 99:25 100:1,4 100:6,6,17,22 100:22 101:6 101:16,16,20 103:19,19 104:8,9,17,18 104:22 105:6 105:13,22 106:16 107:10 108:4,23 110:7	110:13,21 111:7,9,11,13 111:17,24 115:18 116:4,8 117:7,22 118:7 120:5,11,19,20 121:16,24 122:18 123:3 123:17,18 155:3,15,17,19 156:9,13 157:3 164:17,20,24 164:25 165:5 165:13 166:10 170:11 171:6,8 171:16 174:7 175:1,18,21,22 176:3,6,22,23 177:4,16,21,21 177:22 178:6 187:8,16 188:4 188:9,14,22 190:11 191:7,7 191:9 n.w. 3:6 218:17 name 6:9 7:9 11:21,22 16:25 83:1,1 90:9 93:9 97:21 98:18 110:5 112:11,15,19 114:4,8,25 116:19 117:9 117:10,21	121:6,20 159:23 165:10 165:19 196:5 215:2 216:11 named 81:1 91:5,12 93:5 93:24 95:1,8 96:11 98:10 112:24 115:5 120:18 121:23 names 93:9,13 93:14,15,20 naming 96:1 111:13 114:10 116:16 117:6 118:5 165:15 nasal 22:23 23:8,13 24:14 24:18,23,25 25:10 26:9,11 26:20 27:20 28:6,10,15 29:6 30:18 31:1 32:24,25 33:3,18,23 34:2 35:6,9,16 35:21,23 36:10 37:5 38:19 39:16,22 49:16 107:1 108:11 126:19,24 127:7,15,24 128:12 130:9 130:11 132:6
n			
n 6:1 42:14,19 42:21,25 43:1 44:4,9,13 48:5 48:10 49:24 51:21,22 52:7 52:17,18,20 53:1,3,7,11,13			

[nasal - number]

133:5,18 134:6 134:10,15 135:2,9,13,17 138:20 141:7 141:15 149:25 150:4,8 151:14 163:10 189:25 195:24 nasopharynx 33:17 natural 38:21 44:6 nature 11:3 156:25 209:10 nearly 23:25 214:17 necessary 111:13 need 8:5,8 9:23 9:25 22:8 27:12 29:20 33:19,20 41:6 65:23 74:20 80:24 84:12 87:25 91:17 103:4,4 111:1 118:11 136:9 142:16 146:5 175:13 177:5 184:14,14 189:24 191:14 205:19 209:12 209:22 214:15	needles 141:3 needs 139:24 150:8 209:10 negatives 144:15 neither 219:11 neo 91:15 110:19 112:15 175:2 neopentane 110:16 111:5 nervous 187:20 neurelis 1:7 17:10 36:24 37:2 84:3 102:20 106:2 217:7 220:3 neurelis's 102:2 200:6,13 never 15:1 100:8 106:6 125:24 133:22 nevertheless 144:14 new 22:23 84:15 119:3 night 145:20 nitroglycerin 141:6 noael 153:5 nodding 85:21 nods 85:20 nomenclature 99:15 100:16	100:20 108:20 110:2 112:18 112:25 113:3 113:17,23 114:3,14 115:7 115:12 117:5 121:4 122:2,4 122:8,23 123:6 123:15 124:16 nonaqueous 155:7 201:11 201:12,23,23 202:8,10 210:13 nondescript 210:12 nonessential 64:2,6,21 65:6 65:14,17 nonethanol 207:19 nonionic 55:4 55:23,24 56:3 57:13 87:11 nonirritating 151:7 nonlimiting 147:9 nonnasal 127:25 nonpeptide 154:11 nonprovisional 52:11 59:18	nonsolvents 32:5 nontoxic 151:7 207:10 nope 37:3 normal 90:19 93:5 94:6 northern 168:11 nose 29:2,12,15 34:14,16 36:18 151:20 notarize 220:11 notary 216:17 note 193:24 220:9 noted 216:2 notes 9:1 17:25 17:25 214:3 nowadays 118:2 number 24:17 29:4 31:8,23 31:24 45:18 77:22 79:19 84:15 85:1 90:22 92:10,11 93:6,11 94:1,6 95:12,16 98:21 105:8 107:16 112:2,24 116:6 121:12 127:6 134:5 135:20 136:1,5 138:13
--	--	---	---

[number - okay]

139:22 143:1 166:1 171:9 180:7 195:3 196:9,11 204:4 210:2 212:4 numbered 2:5 114:19 152:16 173:11 numbers 14:3 84:12 93:16 118:7 numeral 85:14 numerous 27:14	73:14 74:19 75:5,19 76:3 77:4,19 78:8 79:7 80:4,21 86:4,17 87:1,8 87:23 91:6,10 91:22 93:25 94:11,22 96:13 97:6,19 98:6 99:9,16 100:2 100:25 103:21 106:20 107:18 108:5,24 110:14 115:16 117:8 118:9 121:7 122:3 123:1,8 125:5 126:23 127:20 128:5,18 130:3 130:10 134:12 135:4,11 136:8 138:3 144:2 145:13 150:2 151:16 155:12 156:16 161:4 161:20 162:2 162:21 163:5 165:12 170:2 170:12 172:17 173:6,8,17 174:4,21 175:9 175:19 176:17 177:9 179:12 181:13,23	182:6 183:11 183:25 185:15 185:25 187:10 187:17 188:5 191:12 194:6 194:25 201:20 202:23 203:9 203:14 204:13 204:24 206:7 206:18 209:8 objections 7:21 50:23 73:1 78:2 observation 188:17 observations 184:11 observe 189:4 189:21 observed 196:10 obvious 185:14 185:17 obviously 7:13 7:18 10:25 16:1,8 17:24 18:5 22:8 29:9 34:15 36:17 37:11 93:15 95:9 112:14 128:24 134:21 136:20 140:23 190:17	obviousness 74:13 196:20 occur 26:13 occurred 171:25 occurs 157:17 octal 93:16 ocularly 180:1 offered 77:10 198:3 offers 133:5 office 1:1 185:12 216:13 217:1 officer 217:23 218:10 offices 6:7 oh 39:2 43:2 74:1 81:10 82:11 102:10 131:4 132:3 142:14 146:3 153:4 154:24 156:2,2 159:23 166:5 169:6 198:14 oil 202:2,5,14 203:2 oily 202:5 ointment 202:6 ointments 202:12 okay 8:16,20 8:24 10:1,10
o			
o 6:1 11:20 143:10 oak 3:22 219:7 oath 6:2,11 15:7 216:10 object 41:3 88:1 176:4 objection 25:15 28:12 30:19 31:2 35:18 38:18 41:4,6 41:22 42:10 43:25 48:7,12 49:10 50:3 53:2,20 59:21 63:5,22 64:16 66:21 68:24 71:6 72:2,14			

[okay - opinion]

10:25 11:17	102:1,24	187:21 192:9	49:15,23 50:5
12:10,12,17	103:11 105:16	193:6 197:15	50:11 54:18,21
13:7,12 14:13	105:19 110:1,7	198:14 210:25	54:22 55:16,17
14:24 15:4,10	112:10 113:6,7	212:20 213:21	55:18 56:5,9
18:19 19:17,20	113:17,22	214:5,16,18	56:23 57:4
20:15 21:6,7	115:4 116:21	old 168:21	59:6,7,7,9
22:10,22,25	117:3 118:12	olfactory 34:10	61:11 65:1,11
23:3,23 25:6	119:13,15	139:14 191:2	70:14 74:24
25:20 30:23	121:23 123:4	once 136:24	75:2,17,20,21
36:14 38:6,16	131:19 132:4,8	ones 36:12	75:23 76:18,19
41:7,16 42:16	132:11 135:16	111:8 135:22	76:21,25 77:8
42:22 43:2,3	138:6 140:14	154:11 195:19	80:13 87:5,21
43:15,22 44:15	142:8,12,19	210:17	91:4,13,20
44:22 45:10,20	143:5 146:4,9	online 117:1	100:21 101:17
45:20,23 46:8	146:9,21 147:7	onset 139:19	102:24,25
47:2 50:6,10	147:11 149:9	140:4	103:15 114:6
50:17 51:15,18	149:24 151:2	open 9:5	143:17 144:5
52:14 53:24	151:25 152:7	140:23 146:2	149:16 155:2
54:18 60:6	152:11,18	171:22 192:25	157:12,15
62:1 63:11	153:23 154:13	opening 30:13	164:16 170:9
66:10,13,16,25	157:2,8 158:7	operated 9:11	176:12,19
67:7,10,18	158:16 159:8	operating	177:12,15
68:5,8,13 69:1	159:13,13,16	183:24	189:16,24
69:14 70:13,20	159:20 160:3	opine 46:9,14	190:20,22
70:23 74:2,4	161:18,23	48:17 49:4,8	192:13,17
78:10 82:13	162:6 166:17	155:11 164:20	194:20 197:8,9
83:10,12,15,20	167:1 168:18	193:9 198:2	198:19 199:3,9
84:1,9,24	168:22,23	opined 85:23	199:10,18
85:17 86:12	169:6,7,12	86:13 156:9,19	200:8,13,18
88:19 89:1,8	172:14 173:8	189:10,19	201:12 202:17
89:25 92:3	173:14 178:16	opinion 14:18	203:20 206:5
93:3,7,8,19	180:4 181:7	14:24 15:1	206:24,25
94:3 95:6 97:1	185:4,19	47:5,8,21,23	213:5
97:12 99:7,23	186:10 187:13	48:9,14 49:2,6	

[opinions - page]

opinions 17:25 21:23 63:25 64:5 65:7 66:14 67:1 68:14,23 76:22 77:2,10,12,13 78:13,15,20 79:4 80:1 83:24 88:11,15 88:21 99:3 103:25 118:15 157:2 159:17 169:20,23 172:4 191:11 198:3,7,15 201:8 opposed 81:20 opposite 103:10,11 191:5 optimize 127:18 128:3,6 134:6,10 135:2 135:9,14 optimized 137:1 183:3 option 193:20 optional 111:13 options 193:14 oral 1:14 2:3 35:23 128:13 135:23 136:22 139:25 141:5 217:23	ordinary 57:16 97:3 99:5 105:21 129:7,8 organic 5:2 89:19,20 93:1 93:14 94:8,13 95:7 108:8 116:16 153:16 153:20 154:4,8 organs 179:7 original 167:24 originally 62:13 128:9 136:20 outcome 219:15 outlined 134:4 outperforming 196:16 outperforms 194:10 outside 107:8 overview 89:18 own 16:9 115:10 148:5 191:4 198:15 200:9 owner 1:8 3:12 6:22 217:8 218:22 owner's 83:2 83:17	p p 6:1 11:20 p.m. 2:7 119:8 119:8 132:20 132:20 158:1,1 211:1,1 214:6 214:6,25 package 141:9 padagis 1:5 6:18 74:16 200:15 201:6 217:5 220:3 padagis's 203:3 page 4:2 13:10 13:15 14:7 19:4,17,21,25 20:18 21:11,21 23:3 24:7 27:5 27:6 38:6,8,9 39:7 41:13 43:15,18 44:22 46:25 52:4,11 52:14,14 58:4 59:15 60:23 61:22,24,25 66:7,9,17 68:1 68:2,6,7 70:20 70:22,23 79:14 79:25 85:3,4,8 85:8,9,10 86:3 89:3,5,21 90:6 90:6,17,25 92:18,18,19,20	92:21 93:19 101:24 102:1,2 109:23,23,25 119:13 120:1 126:2 127:9 131:23,25,25 132:22,23 133:9,10,10,24 133:25 137:4,4 137:4 138:12 138:12,13 142:23,25 146:21,22,23 147:1,2 149:1 150:20 152:11 154:14,20 157:4 158:9,11 158:14,15 159:3,4,5,8,9 161:24,25 162:5 164:12 164:15,18,19 164:23,24 166:5,6 167:10 167:11 169:9 172:6,7,8,9,20 172:20,24 178:2,18,20,24 178:24 179:19 185:11 186:5 186:12 192:18 193:5,22,24,24 197:13,16,22 199:22 200:7
--	---	---	---

[page - patent]

203:17,19 205:13 206:24 207:3 208:1,11 211:13,13 215:4 pages 39:20 53:16 62:2 66:16 138:12 158:8,18,19 167:9 172:22 197:20 203:20 220:12 pain 24:19 34:4 139:7 panic 36:2 139:8 paper 19:6,11 36:16,19 62:3 67:8 152:9 papers 22:16 22:23 23:1 31:25 197:3 paragraph 45:3 46:24,25 47:7,11 52:15 58:22 59:8,15 59:16,24 60:18 60:23 61:14,14 62:10 86:19,23 89:22,25 90:5 90:13 93:4,8 102:2 111:25 112:1,2,8,10,13 113:10,10	114:12 127:8 133:12 138:17 142:25 143:1 143:16 144:18 147:4,8 150:23 151:6 152:15 153:2 159:9,10 164:19 165:3 166:3,5,15,18 166:22,24 169:8,9,22 170:5 171:1 173:1,2,11,15 174:10,11,14 178:11,19 179:10,19,22 180:5,5 185:10 185:20 186:12 186:15,21 187:2 188:24 188:25 192:22 193:4,22 197:22 204:3 208:4 211:17 211:18 212:9 paragraphs 60:2,9 166:12 167:9 180:11 180:17 181:8 181:19 183:8 183:22 204:4 pardon 131:4 paren 208:7	parenteral 29:4 parenthetical 153:12 park 3:24 219:9 part 18:17 19:10,10 23:7 23:16,21 29:13 36:18 40:4 64:9,13 65:13 70:13 87:20 98:24 102:14 114:25 132:2 152:19 159:17 167:23 169:14 174:6 188:15 199:12 201:1 202:9,16 204:8 partes 83:17 particular 29:17 61:2 108:17,18 118:22 134:17 144:25 145:18 148:15 153:4 173:19 185:23 193:14 196:17 199:19 200:14 203:15 particularly 179:14 187:22 206:11 parties 15:13 218:11 219:12	parts 53:8 104:11 174:10 200:17 party 218:5 passage 208:20 passing 145:20 past 98:21 patch 30:7,8 patches 32:11 patent 1:1,3,8 1:10 3:12 4:15 4:16,17,18,22 5:4,5,6 6:22 11:4,5,6,10,11 11:13 12:8,18 12:22,24 13:15 13:20 14:15 15:2 19:13,17 19:18 20:5,13 20:15,16,22 21:5,8,9,16 38:2,10,14 41:12,17,20,21 42:5,6,6,8 43:11,17,20,23 43:24 44:20,25 45:25 46:10,15 46:24 47:12,23 48:3,4,18 49:6 49:9 50:8 54:10 57:20,21 57:22,25 59:3 61:22 62:12,13 62:18,20,22
---	--	---	--

[patent - people]

63:2 65:7,9	160:10,25	144:8 151:3	29:18 31:14
66:5,8,19	162:19 163:3,6	155:10,22	32:7,16,22,23
67:19 68:11	164:12 170:15	185:7 187:3	34:11 35:1,3
69:2,4 70:10	170:16,17,22	204:10	137:25 138:8
70:16 71:2	172:1 177:12	patient 71:3	151:14,17
72:1,3,12,13,24	192:21 196:17	107:4 136:12	153:18 157:9
72:25 73:9,13	197:12 199:25	136:21 138:23	157:14,16
73:13,20 74:6	203:17 205:24	140:17,19,21	162:23 163:7
74:7,15,17	206:25 208:2	141:10	163:24 164:4
75:3,8,10,11,13	212:5 217:1,3	pause 9:20 41:5	177:25 182:5,7
75:16,24 76:6	217:8,10	87:25	182:24 183:10
76:10,13 77:2	218:22	pct 143:2,20	183:16,24
77:11 78:7,17	patentably	149:11,11	184:2,6,13
78:20,25 79:1	78:17,25 79:5	157:10 164:16	189:12 194:5
79:5,5,6,12,13	80:2,14	193:10 197:16	194:22,23
80:1,2,3,15,16	patentholder	201:8 203:20	195:5,18 196:2
80:19,20 81:5	14:22	206:3,16 207:1	196:11 208:7,8
81:15,21 83:2	patents 8:23	207:4,5 208:8	209:12,16,22
83:16,18 84:4	22:3 34:22	pdf 85:8,10	209:25 210:9
84:25 85:15	44:12 45:7	92:19,20	pentagon 93:16
86:7 87:17	46:1,5 48:4,5	131:24,25,25	pentane 110:11
88:10,20 89:1	60:16 63:16	132:22 137:5	110:12,13,16
89:12 92:6	64:7,23 65:10	138:13 147:2	110:21,21,21
104:25 118:25	65:12 67:4	152:12 158:15	110:22,22,23
119:11 142:5	68:16 69:7,8	159:3 161:24	111:7,7,11
142:22 143:13	71:5,9,9,9 72:8	169:10 172:7,8	114:25
145:7 146:24	76:14 77:23	172:9,20,25	penultimate
148:25 149:19	78:16 80:5,14	178:19 179:20	110:17
149:19,23	81:20,21 85:23	211:13	people 98:21
154:14 156:9	88:17 95:11	pending 25:3	99:7 101:13
156:10,12,14	97:8 104:23	186:7	103:16 107:16
156:21 157:6	118:22,23	penetration	107:21 108:19
158:23 159:11	123:11,13,14	26:1,3,4,9,24	129:16 139:24
159:14,16	143:25 144:1,7	27:4 29:7,13	

[peplin - point]

peplin 12:7 peptide 179:17 peptides 139:11 154:10 percent 38:22 38:24,24 39:13 39:14 130:2,8 133:21 145:12 147:14,18,18 147:20,20,21 147:22 148:7 179:24,24 181:2,4 182:21 183:3,5,13 184:9 198:23 199:2 202:13 207:13,14 212:18,20,20 212:23 213:1,6 213:7,8,15 perfect 169:6 performed 179:23 190:24 191:16 performs 194:8 196:22 period 30:8 218:4 permeability 133:1 permeable 163:11 permeation 25:14,22 30:13	30:17,25 31:4 31:6,23 160:22 161:6,19,22 162:1,11,19 163:4,19 164:2 permission 131:8 perrigo 13:19 person 6:11 55:8 57:16 97:2 98:23 99:5 101:11 102:5 103:8 104:6,16 105:9 105:14,16,21 105:25 106:9 106:17 107:22 107:22 108:1,1 129:8 193:11 196:5 216:11 personally 167:19 216:10 persons 129:7 perspective 99:4 139:3 140:11 petition 83:17 petitioner 1:5 2:4 3:2 68:9 217:5 218:13 ph 134:20 199:11,13 pharm.d 103:1 103:7	pharma 13:19 pharmaceutical 23:12 28:23 38:19 39:11,12 39:16,22 40:2 40:20 72:16,19 73:4,17 74:10 91:16,24 95:14 96:7,10 103:13 103:17 106:12 109:13,14 136:24 144:19 161:1 185:23 185:24 197:24 198:21 208:6 208:12,15,16 208:25 210:2 pharmaceutic... 95:6 129:3 198:25 pharmacolog... 207:11 phase 201:25 202:3 phd 1:15 2:3 4:7 7:4 23:13 26:21 28:24 34:8 36:7 37:8 102:11 103:2,4 103:7 106:11 107:10,11 186:2 215:2 216:1,5,10 217:16,22	220:4 phone 9:5,7,12 physical 134:23 184:5 195:25 physically 31:25 physicochem... 31:10 physiological 132:5 134:4 207:11 physiology 106:25 108:11 picato 11:18,23 picture 140:15 pillion 150:24 place 11:2 placed 6:2 places 140:25 plasma 129:25 plasticizer 161:7 please 6:13 7:14 41:10 51:25 69:18 81:9 88:5 131:5 168:13 173:1 plenty 74:12 plethora 148:17 197:3 point 25:8 26:3 26:7 46:23 53:17,24 57:13
---	--	--	---

[point - previous]

93:3 107:24 136:10,10 150:9 181:1 193:19 198:23 201:2 207:23 points 92:14 109:9 polsinelli 3:5 6:17 218:16 polsinelli.com 3:9,10 218:20 218:21 polyhydric 164:7 polymeric 28:25 30:9 polymers 26:23 28:4 poorly 190:18 posa 56:1 61:17 61:19 97:20,24 98:3,9,22 99:11,14,17,19 99:23 100:19 100:21 101:5 101:10,12,13 101:14,18 102:3,18 103:25 104:7 104:16 105:10 105:13,17 115:11 125:3 125:14,21,24 127:17 128:2	128:20 129:11 133:19 135:17 141:19 158:24 171:2 181:18 183:7,22 184:15 189:11 190:19,21 192:15 196:20 209:5,9 213:3 213:19 posas 97:14,15 128:16 136:2,6 position 24:16 46:4 47:12 54:15,17 87:4 101:15 200:6 200:10 201:5,6 201:7 203:7,22 203:24 204:9 205:2,5 206:2 206:4,12 207:3 positions 24:5 24:8,10 positives 144:15 possible 26:24 112:11,14 113:8 125:8,18 126:1 168:20 176:1 207:20 212:23 postdoc 23:9 potency 126:18	potential 27:4 40:17 56:20 99:11 133:5 139:4 141:18 141:18 142:2 184:11 190:14 191:3 195:17 potentially 10:2 53:11 127:1 148:19 182:13 199:7 210:11 practical 106:24 practicalities 190:9 practice 108:2 209:7 predominantly 202:1,4 preferably 162:24 preferred 179:11 193:20 207:9 212:10 prefix 91:5 111:13 112:4 117:7,22 118:8 121:24 164:20 prefixes 112:11 112:15 113:9 114:18 prepare 15:19 17:4,22	prepared 167:21 preparing 15:25 16:1,6 17:7 18:19 preponderance 68:10 presence 182:16 195:16 198:4 199:5 203:23 204:10 present 24:4,10 39:12 40:4,12 40:15 114:16 147:5 152:19 153:5,8 157:1 187:5 199:12 199:14 200:22 202:7 205:8 206:10 210:3 211:19 213:2 presented 119:23 194:19 presume 74:8 pretty 12:9 22:1 86:21 prevent 29:24 179:17 preventing 15:16 previous 24:8 24:10 28:5 42:12 49:12,18 70:17,18 84:14
---	--	---	--

[previous - provides]

111:16,23 139:8,13 163:15 196:4,4 previously 61:7 111:8 115:9 126:21 184:3 198:2 principally 156:25 principle 35:4 114:15 170:18 principles 89:18 129:21 print 85:8,9 146:10,13 prior 8:23 25:21 26:7,13 26:17 29:7 33:22 47:20 55:8 57:17 74:13,16 96:10 97:3,14,15 98:2,8 99:8,15 100:19 101:8 101:14 103:18 104:7,16 105:9 105:20 106:12 106:17 107:16 108:2 136:7 143:21 144:1,8 144:12 158:23 174:18 185:1 187:14	priority 45:8 45:24 47:9,13 47:16,17 63:19 64:3 86:7 88:10,16 143:13 privilege 10:3 probably 10:11 15:5 19:9 25:12 54:9 65:22 66:6 74:12 88:13 95:19 103:4 109:22 problem 54:7 196:23 problematic 136:21 problems 109:6 proceed 6:15 168:13 proceeding 10:16 11:3 12:18,22,23 13:24 15:14 17:19 22:14 67:20 74:18 75:12 77:11 82:24 185:8 189:10 213:5 219:13 proceedings 4:4 8:18 10:18 14:13 77:16,25	151:4 213:6 214:25 process 15:22 78:3 125:10 142:3 167:23 produce 145:3 148:5 212:25 produced 2:3 produces 148:21 product 11:22 11:24 31:12 32:18 34:23 128:14,24 136:4,12 141:22 150:7,9 150:17 163:15 163:21 164:6 products 25:22 109:15 127:6 129:4 137:1 163:14 professor 82:25 83:16 84:2,4 85:23 86:13 profiles 130:1 programs 31:20 project 34:2,4 projects 24:20 24:25 promising 126:20 127:2	pronounce 82:25 proof 147:19 147:21 198:24 207:13,16,17 207:24 212:15 213:1 propane 93:12 94:15 propanolol 95:20 proper 140:6,7 properties 31:10 32:8 57:12 96:2,5 136:14 proprietary 25:19 propylene 190:12 191:7 prosecution 14:15 171:25 192:6 protein 23:14 proteins 23:14 139:11 154:11 proved 216:10 provide 63:21 79:3 86:15 145:11 147:13 192:6 provided 218:3 provides 55:3 63:13 64:24
--	---	---	--

[provides - quote]

145:2 153:5,8 providing 15:17 151:8 provisional 4:17 45:11,12 45:17,21 46:6 46:10,15 47:24 48:9,19 49:4,9 49:21,24 50:2 50:7 52:11,16 52:19,23 53:10 53:19 54:2,19 55:1,19 56:10 56:23 57:3,4,5 58:23 59:11 60:3 63:13,20 64:15,18,23 65:11,19 85:18 85:24 86:7,14 87:4,7 88:16 143:13,17,23 144:5 145:9,16 145:24 146:2 147:24 157:13 157:17,19 158:3 211:3 ptab 70:17 75:3 75:6,8,16,18,24 76:20 77:16,25 84:12 88:20 ptab's 78:6 pto 14:15,19 77:22	public 34:21 216:17 publication 99:10 104:15 105:20 108:21 publications 26:15 29:6 104:6 105:8,20 108:22 158:24 publicly 33:5 publish 67:11 69:4,11 82:5 116:24 published 34:20,24 84:14 99:11 105:3 173:15 publishes 116:14,23 puffin 137:16 pull 19:8 67:11 92:5 142:16 152:2 160:4 169:2 171:19 pump 9:11 pure 141:23 148:10 149:6 149:13 purely 9:8 184:5 195:14 purest 204:18 purported 99:4 purports 143:12 167:12	purpose 35:25 purposes 19:9 111:12 216:12 pursuant 218:9 put 53:25 57:19 76:5 104:23 111:21 125:7 146:5 150:5 213:14 putting 26:8 61:10 72:21 q qualifications 23:5,11,18 106:18 qualified 101:14 qualifies 105:17 qualify 104:7 104:16 quality 150:11 question 7:14 7:16 8:7 11:12 25:3,23 28:13 30:14 31:3 32:10 33:13 35:5,14 39:19 41:6 46:13 47:4 48:21 54:13 56:6 57:6,21 64:11 69:18 81:1,11	87:14 95:9 96:9 98:7 99:13 101:3 102:16 103:22 103:24 104:10 110:20 122:14 128:19 129:1 130:12 134:24 135:13 137:23 139:9 144:10 150:3 156:17 156:18 175:16 183:12 186:7 187:19 194:12 205:15 206:19 210:13 questioning 2:10 192:2 questions 7:13 8:1,11 10:5 22:2,4 123:22 213:23,23 214:18,22 quickly 128:13 192:25 quiet 100:12 158:12 quite 18:23 27:19 28:21 93:15 quote 52:22 95:10 149:4,5 149:8
--	---	--	--

[quoted - record]

quoted 58:22	141:14 148:21	156:18 164:15	recently 22:19
quoting 52:6	154:6 162:13	175:15 197:10	recite 39:16,22
113:19	162:17 186:13	198:24	41:20 44:12
r	187:12 188:25	reason 74:8	54:2
r 6:1 17:11	194:15,16,17	164:4 177:14	recited 39:18
ramifications	197:4 200:4	215:4	72:11,24 73:12
77:20	216:1 220:6,8	reasoning	74:6 156:20
range 73:22	reading 16:9	76:17	recites 44:15
74:3 154:5	47:2 54:23	reasons 27:22	71:25 197:24
207:14 212:17	68:25 86:6	recall 11:9,9,14	reciting 80:8
ranges 148:4,6	95:11 101:18	11:15 12:24	recollect 36:12
154:2	102:9,14 103:6	15:3 17:6	50:9,10 53:13
ranging 198:23	104:6,15 113:4	18:22 23:23	61:12 64:4
rapid 133:6	149:23 161:10	24:1 25:16,21	65:3 74:25
139:19 140:4	161:14 163:1	26:6,7,10,23	77:12 80:23
rapidly 133:17	176:9 177:12	27:12,16 29:6	recollection
rarely 31:16	181:17,18	34:5 36:14	123:9
rate 162:23	183:8,22 186:1	47:22,25 48:15	recommend
rather 30:2	186:8,14,15	50:4,14,16	117:6,9
154:25 166:9	189:15 190:25	53:14 65:4,5	recommenda...
169:25 170:10	206:13	65:23 66:2,3	117:21
191:22,24	reads 58:6	68:25 75:1	record 6:14,24
192:15	86:10 93:8	76:16 78:11	7:2,3,9 8:8
ratios 208:24	174:2	83:25 96:16	13:23 16:3,24
read 18:1,7,7,9	ready 69:20	98:2,8 104:4,6	37:22 43:7,9
27:13 47:7	193:3	104:14 105:2	50:22 51:3
48:1 68:12	real 168:6	118:17 123:21	69:25 74:4
70:18,25 71:1	214:4	135:24 160:8	81:25 84:18
74:21 86:11	realize 81:6	163:17 172:5	100:13,14
87:2 88:25	really 18:4 26:6	185:3 191:20	119:7 131:13
93:7 106:21	41:25 54:1	192:11 194:14	131:15 132:19
133:11,14	56:12,21 65:16	202:13 214:10	137:17,18
138:17,17,19	80:8 88:22	recalling 36:7	142:17,20
	116:12 152:2		145:21 157:25

[record - relying]

186:8 190:2 192:9 210:24 214:4,23 217:24 218:12 recorded 6:25 rectal 126:10 140:1,24 refer 19:17 20:15 21:7,8 42:16,25 45:12 45:20 49:11 51:9,21 58:1 91:20 94:6 95:7 96:11 97:3,16 98:3,9 99:24 100:4,5 101:5,6,19 103:18 104:7 104:22 105:6 105:13 106:18 159:13 reference 36:6 53:9,12,13,18 53:22 55:9,10 56:7 57:15,23 58:15 60:23 71:10 85:19 86:8,9,15,24 92:13,19 98:19 109:20 150:21 151:22 157:15 173:16 178:3 178:20 181:19 185:1 186:16	186:18 187:14 198:11,12 201:11 referenced 13:14 18:13 54:13 56:10 57:3,24 65:19 65:20 104:17 182:1 220:5 references 27:2 27:13 28:20 29:11 55:20 58:19 72:3,16 73:16,16 74:16 94:16 97:9 160:18 178:20 178:25 180:2 referencing 47:8 53:22,22 86:23 94:14 105:4 referred 90:19 100:22 101:15 187:7 188:8,9 188:14 206:11 referring 14:6 51:9,21 52:17 58:2,3 66:3 91:24 94:18,19 94:25 105:8,21 110:25 175:7 175:18,21 177:4 187:15 188:3,10 189:2	refers 59:24 94:6 113:10 115:13,14,24 116:1 162:22 164:20 165:13 169:17 176:2 188:20 refresh 67:13 70:7 83:7 84:16 refreshed 16:9 regard 212:14 regarded 114:3 regarding 45:24 47:9 regards 31:25 91:7,8 region 98:15 registration 219:22 regulation 210:2 regulators 31:18 rejected 185:13 185:16 rejections 77:23 relate 23:1 related 12:18 59:23 184:25 219:12 relates 169:12	relating 19:13 20:12 21:5,16 27:21 49:5 66:5 77:14 129:21 170:25 relation 119:11 relatively 28:1 142:1 relaxant 126:16 release 30:1,6,8 32:2 163:19 184:4 195:22 210:6,19 relevance 35:18 49:10 50:3 77:5 86:5 86:18 87:9 162:3 173:17 177:9 relevant 22:5 118:19 140:9 158:24 relied 15:13 174:1,5,9 relief 24:20 34:4 relies 207:5 rely 169:20,23 170:8 171:1 173:16 174:10 relying 175:25 207:15
--	--	--	---

[remaining - right]

remaining 93:15 remember 13:1 14:11 25:25 26:14 35:15 36:22 63:7 75:21 76:18 78:9 88:14,17 88:23 96:15 127:14,16 167:22 168:2 214:12 remembered 63:9 remind 74:21 137:23 remote 1:14 3:3 3:4 218:14,15 remotely 2:11 6:4 8:9,11 remove 207:21 removed 176:8 render 74:17 renders 80:14 repeat 28:13 39:19 46:12 64:17 94:23 98:7 104:13 119:21 repeated 138:25 repeatedly 106:14	replace 173:1 replaced 93:10 173:20,22 replacing 90:9 report 52:9 165:9,18 166:13 169:7 reportable 200:20 reported 2:8 40:8 190:15 reporter 1:23 6:3,10 7:1,19 8:13 15:11 41:8 43:6 58:8 79:2 85:6 117:14 124:24 157:24 168:10 207:7 217:19 218:4 reporter's 4:12 143:9 217:15 reporting 6:12 reports 47:6 79:9 reproduced 150:11 reputation 28:3 requested 218:2,2 require 31:19 196:12 198:4 required 150:11	requirement 189:19 requirements 134:20 research 23:8 23:10,17 24:11 24:15 25:4 32:23 36:4 103:13,17 106:12 128:17 141:24 163:15 resembling 130:1 reserved 214:24 respect 46:4 53:12 67:3 78:19,20 88:10 88:15 89:19 156:15 response 83:2 83:17 183:14 rest 64:18 restart 79:22 result 134:4 resulted 129:25 163:24 retain 33:20 retained 29:16 29:23 retaining 29:11 29:25 30:5 34:12	return 220:12 reveal 48:22 review 15:12 17:23 18:20 83:17,23 134:13 172:3 218:1 reviewed 15:12 49:20 77:13 104:23,24 182:4 185:1,12 reviewing 17:21 104:3 184:12 185:3 revoked 70:19 rid 207:23 213:12,13 right 8:18 15:2 15:8,14 21:23 24:5 38:14 44:11,13,16,20 45:8,14,18 46:6,11,16 47:14,22,24 49:21,24 50:13 52:12,17,20 53:1,5,7,10,12 53:19 54:3,16 55:1,21 56:1 59:23 60:3,8 60:10,17 62:8 63:16,21 64:15 64:24 65:5,8 65:15,25 68:20
---	--	---	---

[right - saved]

69:7 70:11,14 70:17 71:12 72:13,21,25 73:25 74:7 76:15 77:3 78:13,17,21 80:11 81:16,22 83:8,21 87:17 87:21 89:12,15 89:17,23 90:3 90:15,19,23 91:2,3 92:15 92:16,18 93:1 93:24 94:4,10 94:15 99:5,8 100:1,7 102:3 102:6,8 103:13 104:9 106:7 109:19 110:5,9 110:13,21,23 110:24 111:14 112:1 113:1,18 114:23 115:2,5 117:17 118:8 119:15 120:16 120:19,22 121:1,21 122:2 124:7,10,14,18 125:16 126:7 126:11,22 127:3,13,15,19 128:4 129:4,22 130:2 131:14 132:9 136:7	138:2,9 144:1 144:8,21,25 145:6,12 146:22 148:2 148:10 149:15 150:1 151:11 151:15 152:14 153:13,21,24 155:11,18 156:15,21 157:14,18 158:25 160:11 161:19 164:21 164:25 165:11 165:17,20 166:10,21,24 167:16 169:25 170:11 171:4 172:4 174:3,16 175:18 177:25 178:10,18 179:11 180:13 181:9,11,12,18 181:22 185:8 186:20 188:4 189:13 190:4 192:16 194:3 194:24 198:10 198:18 202:22 204:12,20 205:4,10,13 206:6,17 207:2 208:23 209:3,7 209:14 211:23	212:3,9,21 213:7 214:20 rightly 63:7 risk 40:13,17 50:17 130:14 130:15 risks 109:12 128:25 141:8 141:19 191:4 rmr 1:23 2:7 219:19 role 31:17 32:9 37:13 192:2 roman 85:13 room 6:21 8:12 8:14 50:23 190:3 199:24 route 126:19 130:4 133:5 138:21,21 139:4,18,21 141:20 182:11 183:17 routes 35:23 126:22 128:11 128:22 129:13 133:6 135:20 135:22 136:1,5 141:4,7,8 151:20 163:12 163:20 195:16 row 121:19,20 rule 113:22 118:5	rules 7:12 15:5 112:25 114:2 115:10,12 116:15,17,24 117:1,5 121:4 121:9 122:23 220:14 running 173:6 173:8
			s
			s 6:1 211:18 218:7,7,8,8 saccharide 151:9 153:9 saccharides 99:1 safe 150:12 safety 40:14 salicylic 210:11 saline 208:17 208:22,25 salt 190:13 191:6 salts 196:7 saturated 124:25 saturating 124:22 saturday 16:12 save 50:22 79:10 173:5 saved 79:16

[saving - see]

saving 79:12	148:4 149:14	92:17 93:4	62:5,16 66:10
saw 55:10	152:19 153:7	101:1 102:14	66:17,22,24
123:4	153:23 161:21	111:1 114:12	67:13 68:9
saying 9:23	162:25 171:14	116:9 147:11	70:10 71:19
49:13 57:25	172:18 173:1	156:22 160:17	73:7 74:11
97:24 98:22	175:23 179:13	166:17 188:15	81:5,15 83:15
99:8 101:4	181:10,14,15	189:3	83:18 85:17,19
103:7 105:5,24	181:20 185:21	section 24:4,8	86:2,8,12,16
106:21 107:9	187:4,9,12	38:9 43:16	87:3,7,10,12
109:1 113:2	188:9,13 189:4	44:24 59:2	89:8 90:10
119:16 122:13	197:10,16	62:7 76:5	92:21,21,25
123:15 143:8	200:14 207:3	78:19 85:13	93:4,17,18,20
147:8 149:20	208:12 212:6	86:2,22 89:8	93:21 110:1,2
150:16 157:9	212:14,17	89:11,14,17	112:2,3,8,20
165:14 169:13	schulte 2:9 3:14	110:1,4 126:3	114:12,20,22
176:18,20	3:21 6:8,20	129:17,18,22	119:15,24
179:4 191:16	218:24 219:6	132:25 133:25	120:2,8,12
194:14 195:17	screen 9:17	137:5,22,24	126:3,4 127:9
201:21 202:25	19:8 67:11	138:13 152:14	129:19 131:19
203:25 204:5,6	82:23 83:3,13	154:16,22	132:6,25 133:3
204:14 206:8	109:22 146:5	155:1 158:22	133:7,25 134:7
206:14 213:11	146:11,14,16	164:15 194:14	137:5,6 138:13
says 23:4 52:6	146:20 152:5,8	197:15,21,22	143:14,21
54:22 55:23	152:10 158:5	200:4 207:4	147:8,11,14,22
56:12,14 58:4	168:20 171:22	sedative 126:16	149:7 150:20
71:7 72:4,15	171:23 211:4	see 23:5 24:4	150:21,23,25
73:15 74:9,9	scrolling	26:15 28:4	152:14,18,24
82:7,8,19 83:8	179:19	36:5 38:9,10	153:3,10,16
84:15 85:14	se 72:8	41:6 43:16	154:16,18
94:15 102:8	seal 216:13	44:24 45:1	157:8,10 158:9
103:12 109:15	second 9:20	50:1 52:5,7	158:20 159:8
113:9 114:7,13	24:7 41:5 68:3	53:6,8 54:10	159:10,11
131:8 133:4	69:13,14 70:22	59:19 60:12,13	160:14,17,19
134:3 138:4,10	87:15,24,25	60:22,25 62:4	160:23 161:18

[see - similar]

162:1,11 164:17 165:6 167:11,13 169:12,14,16 169:19 172:1 172:10,15,16 172:20 173:3 173:10,12,23 174:20 176:23 178:19,21 179:1,8,22,25 180:9 181:24 181:24 182:21 183:13 184:9 185:14,20,24 186:1,3,21 187:2,8 189:3 189:7 192:22 193:8,15,20 194:1 197:15 197:18,25 198:5 200:4,5 200:7,9 208:9 208:18 211:17 211:19 212:10 212:11,15,18 seeing 55:9 160:9 seem 183:2 seemed 206:12 seems 148:16 183:3,5 seen 55:13 88:24 108:20	162:7 175:11 177:11 192:8 192:11 seizures 126:10 140:3 selected 58:5 58:11 135:21 selecting 141:20 sense 7:16 8:2 22:6 25:7 34:11 51:22 207:10 sensory 164:5 sentence 62:10 62:21,25 63:1 93:4 133:4 134:3 137:24 138:7 139:6 147:12 152:18 153:2 160:17 166:20 169:16 171:13 179:4 189:3 208:4 212:9,10,14 sentences 112:13 153:1 170:6 185:20 separate 104:11 serial 86:6 series 93:12 150:4	served 14:20 serving 10:21 set 38:17 62:25 72:1 99:20,23 105:1 112:14 113:8 115:10 118:22 167:16 181:5 197:21 199:17 202:21 sets 62:7 76:13 102:2 164:16 setup 191:21 several 102:7 102:11,13,17 102:19,21 103:2,5 106:11 115:20 184:10 sheet 220:10 ships 145:20 short 46:18 shorthand 2:9 6:10 51:20 181:12,21 217:19 shortly 178:15 show 118:11 163:25 164:23 167:12 180:6 showed 105:12 showing 82:22 shown 165:4 179:13 shows 114:22	side 94:7,13,14 191:25,25 210:18 sieves 213:15 213:20 sigma 53:9,14 54:23,25 55:7 55:13,18 56:8 56:9,18 57:1,2 57:8,15 58:2 58:19 59:9,23 59:25 65:2,20 86:9,15,23,24 87:5 sign 220:6,11 signal 164:5,6 signature 4:11 19:23,24 20:1 20:2,19,20 21:13,14 214:24 215:1 216:1 219:19 signed 220:17 significant 201:24 202:16 silent 171:7,16 similar 22:1 41:20 42:1 43:23 71:4 78:19,20 85:22 86:13 87:3 166:18 189:4 189:21 196:8
---	--	---	---

[similarly - sorry]

similarly 159:10	102:9 103:25 104:20,23,25	slightly 145:2 small 23:9	208:17,22,25 209:7
simple 28:1 94:2 114:14 142:2 191:5	105:3,5 106:5 106:22 107:4,9 107:10,12,20 108:10,16 109:2,13 115:17,23 116:4 129:13 193:9 194:15 196:23 197:2 204:6 207:18	129:24 153:15 153:19 154:2,3 154:7 198:17 201:3 202:7 213:1	solutions 35:8 39:16,22 40:3 148:2,10,18,21 149:7,13 150:5 201:22 207:5 207:16 208:6 208:12 219:21 220:19
simplest 93:1 94:8,13		smoothly 51:21 sodium 190:12 solaraze 32:19 163:22	solvent 35:2,3,5 210:5,5
simplified 44:6	skills 101:12 105:1 107:23	solely 156:14 solid 210:20	solvents 26:4 32:4 164:3 212:6
simply 35:2 98:4 99:25 100:6 104:8,18 105:9 108:3,22 110:12 118:6	skillset 105:25 106:3 108:16 108:16	solubility 145:11 147:13 148:22 184:4,7 190:15 195:9 195:21 196:14	somebody 132:13
single 90:3 95:10 99:10,11 114:16 124:21	skillsets 98:23 107:11,21	solubilizer 161:7	soon 119:4 214:4
sir 81:12 83:3	skimming 162:4,5	solubilizing 144:24 208:18	sorry 9:22 10:14 12:4 14:1,6 17:1 19:23 26:14,19 27:6 28:13 29:9 33:8 36:5 36:13 39:19,20 41:10 43:2 44:19 45:4,15 45:16 46:3,12 47:5,21 50:15 52:2 53:15,16 54:6,20 58:9 60:8,21 61:23 62:2,21 64:17
sit 97:2,15 98:5 98:11 100:20 103:15 125:3	skin 9:10 11:8 29:3 30:10,11 30:13 32:13,15 32:24 148:9 149:6,13 161:14,16 162:8,20,24,25 163:9,11,20 164:6 209:21 210:10	soluble 145:2 147:19,21 148:4 161:8 164:8	
site 29:16 33:15 35:11 161:9		solution 38:19 39:2,9,11,12 40:20 71:21 72:15,16,19 73:4,15,17 74:10 145:4 148:3,5 179:16 197:24 208:17	
situation 199:8			
six 115:4,13,15 115:25 116:1 120:24 121:5			
skeletal 165:4,9 165:18			
skill 55:8 57:16 97:3 99:5,8 105:21 129:7,8	skip 158:8		
skilled 57:11 76:4,21 77:1 77:10 95:14	sleep 24:14 33:6,8,15,24		

[sorry - starts]

64:19 65:9	170:4 172:8,8	81:16,18 86:1	sprayable
66:6 67:25	175:16 178:3	86:19 113:11	161:1
68:6,19 69:12	180:14,20	116:4 129:6	sprayed 161:9
70:6,23 74:1	181:7 192:20	139:9,16	sprays 141:6
75:6,9 79:16	193:22 198:12	145:24 151:8	stability 169:13
81:6,12 82:5	199:16 203:11	163:8 179:15	179:8 195:14
83:3,3,10 84:8	203:18 205:15	187:16 205:12	196:14 200:24
85:7,21 87:15	206:19 207:13	specification	stabilize 26:5
88:2,6,7,12	211:25	4:23 45:11,25	29:21 179:16
92:10 94:18,23	sort 37:8	59:17 60:15	stabilizing
97:4 98:7	source 40:2,17	62:14,19 63:3	170:7 171:3
101:2 102:10	114:4	63:20 172:11	stable 31:12
102:11 103:25	space 34:3	172:15,21	stand 75:9
104:12 105:18	spare 187:25	176:14 177:7	standalone
106:8 113:3,6	speak 96:6	193:19	90:7
116:21 117:13	105:1,2 190:24	specified 104:3	standard 62:5
117:18 118:13	speaking 22:3	182:7	62:7 63:12
122:5 123:17	51:7 74:14	specifies 182:8	108:14 209:7
124:12 130:4	130:16 134:16	specify 22:3	stands 139:3
131:14 132:3	210:14	178:5 189:23	177:15 196:15
132:12,17	special 107:25	speculation	197:8
140:12,15	species 167:12	96:13	start 7:11 16:6
142:15 144:3	specific 22:4	spell 11:19	37:14,25
144:16 146:12	42:2 56:7	spent 111:21	101:24 112:13
146:24 148:24	71:17 73:21	spinal 188:16	130:5 156:10
150:14 154:19	91:17 96:8,24	spoke 148:7	172:9,19
154:20,24	98:15 115:20	spoken 17:4,10	started 16:1
156:4,5,22	123:19 139:5	17:13,15,17	56:25
157:5 158:8,16	139:18 170:23	84:4	starting 44:24
159:8,23,24	206:20	sponsored	79:14 86:2
161:12 162:4	specifically	28:22	89:21 112:4
164:8 166:7,16	36:12,13 42:13	spray 160:11	147:7 153:2
166:17,23	57:15 58:19	160:14,16	starts 66:10
167:3 168:9	60:8,17 65:10	161:16	70:21 86:22,23

[starts - subsection]

133:12 147:2,4 152:15 158:9 159:10 164:15 169:13 193:23 197:16 204:3 206:24 211:18 212:9,10 state 2:8 6:13 7:8 52:19 89:9 100:19 166:8 176:22 177:17 184:13 207:12 216:8,17 217:20 stated 63:17 64:9 65:2 117:15 statement 119:16 statements 99:15 169:13 states 1:1 13:18 54:13 58:16 59:1 62:11 68:9 93:5 149:11 162:22 185:11 188:7 208:6 217:1 stating 54:11 108:3 149:4 155:15 171:8 176:21 181:16 stem 93:10,10	stenographic 6:12 stepped 24:24 steve 17:10 stick 33:19 sticking 30:21 30:21 61:21 stipulations 4:5 stop 7:14 11:23 33:24 storage 199:6 straight 10:20 30:3 90:18 97:11 111:14 115:13,25 117:6,21 118:5 120:15 121:14 122:1,20,24 123:7 175:7,18 176:2 177:4 strange 182:11 strategies 134:5,11 135:3 135:10 stratum 163:10 163:12 street 2:10 3:6 3:15 218:17,25 219:22 streitwieser 5:1 92:13 109:20 112:22 116:8 streitwieser's 111:12	strength 32:4 126:17 183:15 184:3 strengths 180:22 182:25 strike 14:25 17:7 46:3,8 88:8 94:18 133:22 156:10 203:18 strong 27:19 struck 173:18 173:20 structure 91:2 91:18 94:2 109:8,8,17 111:23 114:9 116:8,9,12 120:14 123:19 125:23 165:10 165:19 structures 89:15 90:23 110:17 116:4 117:10 125:11 125:19 stuck 28:6 209:21 student 26:21 28:24 34:8 36:7 students 134:16 182:13	studied 23:22 163:13 studies 23:23 27:17,25 28:9 28:14,18 29:4 29:14,14,15 180:6 study 23:7,17 24:1 26:25 178:25 studying 33:2 36:10 stuff 49:16 140:15 141:23 189:19 210:15 stupid 47:5 styled 2:5 subcompone... 164:25 subcutaneous 209:20 subject 16:9 38:10 43:17 151:11 213:22 sublingual 135:23 139:25 submitted 8:17 18:16 22:13,17 22:18 49:2,7 77:2 84:3 subscribed 216:12 subsection 85:17 157:8
--	---	--	---

[substance - table]

substance 10:4 11:10 161:2 substituent 121:24 successfully 37:4 sufficient 56:18 suffix 90:10 sugar 214:14 sugars 9:8 suggest 184:10 suggested 148:6 suggests 193:12 suit 141:3 suitable 144:24 148:1 suite 2:10 3:7 3:16,23 218:18 219:1,8,22 summarize 62:25 113:5 summarizing 113:4 summary 78:23 79:4,25 152:15 203:23 sunday 16:12 supply 40:16 61:15 63:23 144:11 supplying 143:17	support 24:22 45:13 54:25 55:18 56:11,18 63:13,21 64:24 83:1,16 84:3 85:25 86:15 87:5 143:24 144:6 supported 46:5 46:10,15 47:24 48:18 49:4,9 87:6 88:16 supports 45:25 48:9 50:7 58:23 59:11 62:15 65:12 87:4 supposed 190:5 suppository 126:10 sure 11:12 12:9 14:2 18:24 23:20 28:14 33:11 41:9 50:25 51:6,15 57:9 69:19 70:2 74:22 77:7 79:20 95:23 102:23 123:12 146:22 150:6 159:15 165:23 173:7 186:18 190:16 191:8 195:5	196:24 197:2 surely 175:22 177:21 surface 55:3,9 55:11,20,22 56:2,19 57:11 57:18 87:11 surfactant 55:24 163:7 179:6 surfactants 55:23 163:3,6 suspensions 35:8 210:6 sustained 30:1 30:2,6,8 33:21 163:19 210:19 switch 37:14,25 82:3 89:3 142:4 switching 119:3 sworn 2:5 7:5 217:22 synthetic 38:21 44:6 108:8 system 27:15 58:12 113:12 114:13 115:8 116:13 118:18 142:1 150:12 179:7 187:20 196:18 202:10 202:10	systematic 110:2 systematically 125:21 systematize 93:14 systemic 23:15 30:3,22 31:5,7 112:17 128:12 128:12 130:15 130:20 133:4,7 139:10 182:14 systemically 126:25 136:3 systems 28:10 28:15 29:6 30:10 194:10
t			
t 11:20 17:11 17:11 tab 69:12 82:5 82:5,7 92:5 130:22 146:17 152:2 157:21 160:5 168:24 171:19 184:18 184:18 table 85:5 93:6 93:20,23 94:1 94:5,7,12,14 110:22 132:2 180:2,21,22 181:6,10,11,19			

[table - tetradecyl]

181:20 183:8 183:22 195:12 195:13 203:3 tables 181:4 tablet 136:23 take 7:19 8:4,6 9:23,25 12:10 37:19,21 47:11 78:10 81:24 119:4,6 125:6 125:11,13,20 131:6 132:12 132:16 135:21 142:2 171:13 186:12 187:24 196:25 199:6 205:11 210:24 taken 2:5 170:6 218:10 219:14 talk 7:19 25:17 29:14 31:25 50:21 55:2 74:13 157:2 199:21 202:25 209:15 213:16 talked 111:8 124:1,1 139:7 141:5 155:6 165:21 171:7 180:11,23 195:12 198:20 212:22,25 talking 13:21 13:24 15:21,21	19:4 23:20 33:9 47:20 49:18 52:5 58:25 64:17 65:11 76:9 80:6 84:19 87:13 88:4,14 91:9,11 96:25 98:15 108:10 108:12 115:8 129:5 130:4 143:1,11 154:9 158:3,14 163:16 169:7 177:15 178:7 178:24 187:20 189:24 203:11 205:12,16,23 205:24 206:3 209:17 talks 87:10 91:14 94:12 134:17,17 139:9 141:14 189:15 206:21 208:4 213:2 target 33:18 179:7 targeting 139:14 targets 24:2 tauro 190:12 190:13	tdm 170:14 179:16 192:15 193:15,19,25 194:7,10,13,19 194:21 196:15 196:17 teach 171:2 teaches 166:8 169:24 170:9 201:22 tech 67:12 69:12,14,22 82:7,13 83:8 169:1 technical 10:19 70:1 137:21 technician 67:10 technique 213:17 technology 89:9 tell 12:19 22:17 61:3 77:21 96:14 99:2 107:19 114:7 154:19 160:1 176:7 telling 43:21 74:22 77:6 82:15 100:3 176:24 191:8 temporarily 162:24	ten 24:25 term 56:12 180:23 206:17 206:20,20 terms 11:10 16:8 42:2 63:7 99:1 102:21 114:8 145:20 155:14 171:8 177:18,20 202:8 test 142:2 185:5 tested 26:21 testified 7:5 12:13 testify 12:14 21:22 99:4 testifying 95:3 100:16 186:9 testimony 7:20 14:10 15:6,11 15:12,17 94:21 95:1 97:2,7,7 97:15 98:5,11 101:17 104:18 104:20 105:11 105:23 116:2 217:24 218:10 220:8 testing 31:19 149:18 179:23 tetradecyl 180:8 193:15
---	--	---	--

[tetradecyl - three]

195:8	therapeutic	20:9 21:1	137:10 139:2,9
tetradecylmal...	130:17 144:24	22:21 25:17	140:5,25 141:4
175:3 179:16	144:25 145:6	26:25 27:7,15	141:13 142:4
181:4	151:10 152:20	27:22 29:3	143:3 145:19
teva 13:16	153:10,12	32:6 33:4	145:23 146:17
texas 1:23 2:8	188:16 189:6	34:17,22 40:22	146:25 148:6
2:10 3:17 6:8,9	208:13	44:9,18,19	148:12 154:3,6
217:20 219:2	therapeutically	46:2 48:13,24	155:6 156:24
219:20,23	150:10	49:12 55:22	157:15 158:7
text 58:3 94:7	therapeutics	56:6 57:19,20	165:21 168:7
126:12 138:24	24:14 154:12	62:22 63:6	168:24 169:3
154:24 181:15	189:22	64:25 67:5	170:13,18,21
textbook 98:14	thereof 38:22	69:8,16 70:8	177:10 181:4
105:15,17	95:5	70:19 72:11	190:3,18
111:18 131:19	theres's 53:15	73:2 76:23	192:17 194:7
textbooks	thermodyna...	80:22,23,24	194:11 197:9
91:12	32:1 184:7,15	81:2 82:14	198:19 200:25
thalidomide	thickness 29:22	83:20 86:11	201:10 202:8
95:20 109:7	thing 31:6,9	88:22 95:19,25	202:24 205:11
thank 8:3 20:3	40:14 70:18	96:3,5,6 97:9	210:13 212:22
51:1,18 66:23	123:10 140:15	97:18,20 98:13	212:25 213:8
69:21 85:11,12	142:15 154:6	98:18,19	thinking
119:20 131:7	166:12 171:5	102:15 104:11	137:11
137:20,20	174:9 196:4	104:13 105:12	thought 26:8
140:13 162:16	things 26:22	106:7 108:15	79:17 123:2
168:10 169:5	40:6 46:21	113:15,16	151:23 156:5
190:8 193:6	95:21 100:19	114:6,9 116:3	190:5
198:14 200:1	123:10 124:2	116:5,11	three 8:17,23
213:24,25	141:4 201:4	117:16 118:21	16:13 21:23
214:19,22	203:2 210:21	121:11,16,22	22:1,2,5 27:2
thanks 51:24	212:4	125:6,17,17	45:5 67:4,5
119:7	think 13:2,8	126:12 128:7	71:8,9 77:14
theirs 77:8	16:25 18:4,11	128:10,20	88:3 110:25
	18:24 19:9	136:9,23 137:8	111:3,6,9

[three - tocopherols]

144:1,8 151:3 158:19,19 177:13 185:7 187:4 190:14 214:3 throat 33:19 throckmorton 219:22 tim 16:19 time 2:7 6:5,6 7:21,21 11:16 13:1 16:13 18:1,5 25:9 26:7 28:3 30:9 30:16,24 31:14 33:20 37:9 57:17 74:12 79:10,12,16 88:1 96:16 107:24 118:22 119:3 125:6,12 125:14,20,24 129:11 131:6 133:19,20 136:2 139:2,16 139:17 141:13 152:23 165:23 168:6 173:5 175:11 183:1 187:25 209:5 213:4,24 214:23 218:5 218:10 220:15	timed 214:20 timeframe 220:7 times 10:10,12 19:5 tissue 31:6,8 33:7 210:10 tissues 179:7 title 160:10 titled 24:4 89:14 92:25 133:1 tobin 3:13 4:9 6:19,20 8:13 9:15,18 16:15 16:24 25:2,15 28:12 30:19 31:2 33:12 35:18 37:16,21 38:18 41:3,8 41:22 42:10 43:4,7,25 48:7 48:12,20 49:10 50:3,21 51:1 51:12,18,24 53:2,20 59:21 63:5,22 64:16 66:21 68:24 69:15,21,25 71:6 72:2,14 73:1,14 74:19 75:5,19 76:3 77:4,19 78:2,8 79:7,21 80:4	80:21 81:8,11 82:16 83:6 84:10,17 85:7 85:11 86:4,17 87:1,8,23 88:3 91:6,10,22 93:25 94:11,22 96:13,19 97:6 97:19 98:6 99:9,16 100:2 100:12,25 103:21 106:20 107:18 108:5 108:24 110:14 115:16 117:8 118:9 119:1,7 121:7 122:3 123:1,8 125:5 126:23 127:20 128:5,18 130:3 130:10 131:3,7 131:14 132:16 134:12 135:4 135:11 136:8 137:10,14,17 138:3 142:9,12 142:17 144:2 145:13,19,23 146:1,10,13 150:2 151:16 155:12 156:16 157:25 158:13 161:4,10,20 162:2,14,16,21	163:5 165:12 167:5 168:5,12 170:2,12 172:17 173:5,8 173:17 174:4 174:21 175:9 175:19 176:4 176:17 177:9 179:12 181:13 181:23 182:6 183:11,25 185:15,25 186:6,23 187:10,17 188:5 190:2 191:12 192:24 193:4,6 194:6 194:25 199:23 201:20 202:23 203:9,14 204:13,24 206:7,18 209:8 211:6 214:1,8 214:18 218:8 218:23 tocopherol 145:10 147:12 147:20 150:6 tocopherols 38:21 44:3,7 144:20 147:18 148:1 206:22 208:13
--	--	---	--

[tocotrienols - turn]

tocotrienols 38:21 44:3 144:20 206:22 208:14 today 6:17 9:6 10:6 15:5,6,16 17:5,22 18:19 18:25 19:17 20:15 21:7,22 22:2 42:15 74:12 88:14 94:21 95:2 97:2,15 98:5 98:12 100:21 103:15 104:19 104:20 105:23 214:10 today's 6:5,25 together 61:11 76:23 125:7 148:4,22 150:5 177:12 told 96:22 143:4 tolerability 107:3 108:13 top 12:19 117:25 118:3 120:1,5,14,14 120:25 121:10 132:22 137:4 147:1 149:1 159:5 164:18 164:23 172:24	178:24 200:6 209:24 211:14 topical 11:8 32:15 160:11 160:14,16 161:9 topics 65:22 total 112:24 115:5 123:24 124:4 totally 144:17 touitou 131:21 toxic 152:23 toxicity 40:17 130:16,20 141:11 200:24 trace 143:12 198:5 trademark 1:1 217:1 transcript 15:11 18:10 217:23 218:2 220:5,16 transdermal 30:7,7 32:11 135:24 travel 8:10 treat 126:9 treated 127:6 treating 34:13 34:16 71:3 72:18 74:9 139:24	treatment 24:19,19 33:6 35:25 139:19 140:2,3 treatments 138:22 tree 67:25 70:19 trend 182:20 trial 1:3 12:17 75:10,11 217:3 trials 32:17 163:25 tridecyl 180:8 tried 125:24 trivial 142:1 true 41:18 52:24 111:15 126:8 140:12 195:5 216:2 217:24 truer 170:21 truly 196:1 truthful 15:17 try 7:18,22,24 8:4,6 134:24 trying 33:4 53:25,25 54:1 55:16 56:22,24 59:5,6 62:24 75:2,17 97:13 97:13 106:9,16 113:5 146:25 150:15 174:9	176:11 182:14 184:10 186:16 196:8 204:1 205:16 206:23 tube 142:2 turn 13:4,6,12 19:20 20:12 21:4,11 22:11 38:6 41:11 43:10,15 44:22 52:1,4,14 59:15 61:22 66:2,16 68:1,1 69:1 70:20 84:9 85:3 89:1 90:17 92:17,18 93:19 102:1 109:19,22 118:24 119:10 119:13 126:2 127:8 129:17 131:23 132:11 132:22 133:9 133:24 137:3 138:11 142:23 145:14 146:21 152:11 154:13 157:4 161:23 164:11,12 166:3 167:10 168:2 172:6 178:13,18 179:18 185:10 186:5,11
---	---	--	---

[turn - united]

192:18 197:12 197:20 203:16 208:1,11 211:3 211:13,16,16 turning 124:5 145:15 two 8:7 39:20 46:20 48:1 49:3 51:13 60:1,1 64:25 71:9 76:8,13 80:5 91:25 111:10 116:10 145:19 148:4 155:1,9,13,25 178:7 179:11 180:17 188:20 188:21 190:13 191:7 tx 220:13 type 11:7 35:7 90:1 127:5,5 141:11 148:20 163:4 types 61:3 145:6 155:7 typo 111:17 116:9 typographical 111:19	u.s. 4:18,22 19:13,17 20:13 20:15 21:5,8 66:19 70:10 83:18 159:10 uh 39:8 47:1 59:20 69:9,19 84:20 122:17 156:2,23 uk 10:11,15,18 12:20,21 28:24 202:5,13 ultimately 116:12 unambiguous 112:19 unaware 183:12 unbranched 90:18 91:1,4 111:14 117:7 117:21 118:6 120:15 122:1 122:25 123:7 unclear 116:21 undecyl 121:11 121:12,16 190:11 under 6:2 15:7 59:24 122:1,4 122:7,11,22 123:5,20 124:16 134:3 149:18 185:14	203:7,21 205:7 205:9 206:16 207:4 216:10 216:13 undergoing 140:17 underline 174:15 underlined 176:1 underneath 60:2 112:1 114:22 120:4 understand 6:24 7:14,16 8:12,16 10:19 11:12 15:6,10 21:22 22:7 38:13 40:19,22 41:16 43:19 45:6,9,17,23 51:10 54:6,15 55:15 56:22,24 63:1 65:16 67:19 70:16 74:14 75:17 77:1 84:2 87:16 97:10,12 97:20,24 99:3 102:20 105:24 106:9 107:6,23 115:12,18,24 116:5 121:25 122:7,22 123:6	129:12 143:20 143:25 144:7 144:13,17 154:7 177:1 181:20 183:7 183:23 185:6 185:16 188:15 191:14 194:20 202:18 203:25 206:19,24 210:20 213:19 understanding 38:16 39:5,15 39:21,25 62:18 64:8 121:8 122:9 128:8 165:22 174:6 196:2,19 198:9 understands 185:13 understood 102:15 123:16 133:16 204:7 209:5 undertake 141:25 195:6 unfair 108:15 unfortunately 141:12 unique 8:11 112:14 113:9 united 1:1 13:18 217:1
u			
u 121:16			

[university - water]

university 186:4 unpatentability 68:13,22 unpatentable 67:20,23,24 68:11 70:17 74:15,17 75:4 75:16 78:7 unspecific 34:25 updated 22:20 updates 22:12 22:22,25 use 25:13 28:19 32:7 54:8 73:6 93:13 100:19 108:1,19 116:5 116:18 123:14 150:10,12 151:14 152:9 162:19 166:8 169:24 170:9 171:8,16 176:6 177:24 178:9 180:12,17 181:9 189:11 189:16,18,20 192:15 198:22 199:7,8 204:11 207:9 211:19 212:11 213:9 213:18,19	used 25:22 28:11,16 29:7 32:23 37:5 47:16 82:19 99:14 118:21 126:7,9 130:12 134:14 138:8 141:11 153:19 162:22 164:5,8 174:12 175:14 177:14,16,22 191:21,24 195:1 196:17 197:11 201:22 210:4 213:17 218:5 220:16 useful 137:25 149:25 150:4 151:14 152:21 167:25 uses 26:2 using 26:8 36:1 51:19 64:11 91:16,18 100:17 112:11 118:18 121:3 177:18 181:11 193:12 196:7 198:24 207:16 uterus 136:1	vaccines 139:12 vagina 135:25 valid 85:15 validate 32:18 value 136:14 values 181:1 182:9 variables 31:8 125:7 variation 171:7 variations 125:18 165:15 various 24:2,20 26:2 32:25 35:13 40:13 58:15 101:11 104:2 128:11 151:19 152:23 155:6 158:23 161:2 170:20 180:22 197:25 211:21 verify 220:8 veritext 1:22 219:21 220:12 220:19 veritext.com. 220:13 version 152:9 versus 13:19 video 6:25 view 40:25 49:2 74:15 136:10	136:11 185:18 viewed 126:19 viewing 56:2 viii 85:14 viscosity 29:22 vitae 4:25 vitamin 39:3 71:21 72:5 207:6,8 208:17 vodka 182:13 <tr> <td colspan="4">w</td></tr> <tr> <td colspan="4"> w 143:10 waffled 140:12 waiting 70:6 want 19:3,20 37:19 42:17 46:17,18 49:17 51:2 61:8 66:3 78:23 79:21 142:13 146:11 146:13 157:3 158:13 177:6 202:24 210:14 wanted 13:2,25 19:21 51:8 52:4 118:2 197:21 wanting 19:24 washington 3:8 218:19 water 9:12 30:12 32:14 40:5 145:2 </td></tr>	w				w 143:10 waffled 140:12 waiting 70:6 want 19:3,20 37:19 42:17 46:17,18 49:17 51:2 61:8 66:3 78:23 79:21 142:13 146:11 146:13 157:3 158:13 177:6 202:24 210:14 wanted 13:2,25 19:21 51:8 52:4 118:2 197:21 wanting 19:24 washington 3:8 218:19 water 9:12 30:12 32:14 40:5 145:2			
w											
w 143:10 waffled 140:12 waiting 70:6 want 19:3,20 37:19 42:17 46:17,18 49:17 51:2 61:8 66:3 78:23 79:21 142:13 146:11 146:13 157:3 158:13 177:6 202:24 210:14 wanted 13:2,25 19:21 51:8 52:4 118:2 197:21 wanting 19:24 washington 3:8 218:19 water 9:12 30:12 32:14 40:5 145:2											

[water - written]

155:4,20	136:16 176:7	10:21,24 11:2	work 12:5
156:15 157:1	we've 16:2 19:4	13:20 14:21	14:21 17:9,18
161:8 191:23	34:9,13,15	25:6 33:14	23:9 24:22
197:17 198:4,7	37:17 44:9	41:7 81:10	25:9,13 26:13
198:18,23	81:25 92:14	83:10 85:12,20	26:20 28:5,22
199:4,6,8,11,14	108:20 115:8	88:2 96:21	30:1,20,23
200:19 201:3,8	141:4 167:7	100:11 117:13	34:1,1 35:9
201:13,14,16	176:6 177:17	132:15,17	36:21,23 37:1
201:25 202:2,2	178:7 180:23	137:8,12,15	37:2,7,8,9,11
202:3,4,7,10,11	182:3 194:12	142:14 146:3	144:10 170:19
202:13,14,16	196:1 198:20	150:14 156:2,5	190:16 191:5
202:19 203:2	206:2,11	157:23 161:12	worked 24:17
203:23 204:8	210:23	162:15 167:7	28:23 29:7
204:10,17,18	week 22:19	168:8,11 170:4	30:11 33:1
205:3,6,8	wegovy 136:19	186:8,25 190:3	35:17,19
206:6,10 207:2	weight 38:23	210:25 211:9	116:18 165:23
207:20,25	134:18 138:5,9	213:25 214:20	165:24
208:9,17,23	139:12 154:1,5	215:2 217:22	working 24:25
209:1,1,6	154:9 189:18	217:25 220:5,7	26:11 28:3
213:2,14	194:11,18	220:9,11,15	32:11 96:23
waving 150:14	197:6 214:12	wondering	106:24 131:12
way 16:10	welcome 119:9	16:5	164:6
25:24 32:3	152:4	word 53:6 56:2	world 99:11
72:19 74:25	went 33:25	91:20 175:6,10	129:10,15,16
95:18 103:22	62:1 88:23	176:6 189:20	141:22
106:6 111:10	100:12	204:11	worries 17:3
118:20 121:21	west 16:19 17:1	wording	62:3 81:13
126:1 128:9	whoa 70:9	170:16 175:3	168:14
135:12 138:23	widespread	words 51:13	worth 219:23
139:25 147:17	93:13	52:6 53:25	write 97:22,25
165:24 171:13	window 69:16	64:11 173:18	writing 9:1
191:4,5	130:17	174:15,17,18	written 44:9
ways 31:23,24	witness 2:4 6:2	176:1 177:13	62:5,8,12,19
134:22 136:6	6:7,11,23 9:17	187:5 199:19	63:2,21 64:3

[written - yl]

64:14 66:4,18 66:25 87:17 88:9,19 105:15 105:20,25 106:3,4,6,13,14 106:16 107:9 111:18 138:24 143:17 144:11 180:21 190:17 204:15 wrong 25:17 63:8 75:3,18 79:15,18 101:10 206:14 wrote 17:24 105:15,17	39:2,7 41:15 41:18 42:11,24 43:2,18 44:17 44:21 45:16 46:2,2,14,23,25 47:10 48:6,24 50:20 51:15 52:8,13,18,21 53:9 54:17 55:15 59:5,24 60:14,25 62:1 63:6,8,9,14,14 63:17,18,23,24 64:20 66:5,9 66:12,24 67:2 67:6,15,16,17 68:3,12 69:19 70:9,12,15,18 70:18,23 71:1 71:13,18 73:10 73:21 74:1,1,1 74:3,3 75:11 75:14 76:16 78:3 79:10,12 79:23 80:5 81:23 82:18 83:14 86:11 87:2,12,18,18 87:19,20,22 88:13 89:10,13 89:20,24,24 90:12 92:12,23 93:2,7,7,22 94:24 99:6,22	101:23,25 102:10,11 106:21 107:13 109:25 110:3,6 110:10 112:4,6 112:7,9 113:8 113:9,15,21 114:24 116:17 116:21 117:15 119:6 120:23 121:2 122:14 122:16 124:22 126:8,13,15 127:4,11,25 131:18,18 132:1,3,3,24 133:2,8,14,21 136:1 137:7,7 138:10,19,25 140:10,18,22 142:17 143:6 144:4,12 145:7 145:17 146:15 146:20 147:1,6 147:10 149:8 151:1 152:13 152:17 153:6 154:21,24 155:1,7,25 156:5,24 157:7 157:22 158:16 158:21 159:1 159:25 160:8 160:16 162:7	162:17 164:18 166:5,6,7,16,22 166:22,23,25 167:8 168:8,17 169:19 170:5 172:14,18,23 173:2,4,19 174:8,17 178:23 179:2,2 180:2 181:7 185:9 186:1,4 186:16 189:2,8 189:8 192:17 192:23 193:2,5 197:19 198:11 199:21 201:23 203:15 205:1 205:18,21,24 206:1 208:3,24 209:1,24 211:15,24 212:19 213:9 214:16 year 113:25 years 11:25 23:25 24:3 25:12 36:3 102:6,10,11,12 102:13,17,17 103:1,8,16 106:10,11 yesterday 8:10 yl 90:10
x			
x 218:2			
y			
y 121:16 yeah 7:10,17 8:19 9:7,14 10:17 11:13,22 11:25 12:9 13:10 14:8,23 16:4 18:7,15 18:17,18 19:2 19:7 20:14,23 22:7 24:6,9 25:7 29:12 30:14 33:14 35:2,3 37:19 37:21 38:15			

[young - zoom]

young 95:19
z
z 143:10,10
zoom 2:11 3:3
3:4 6:4 7:23
67:12 69:12,14
69:22 81:14
82:7,13 83:8
142:16 168:21
169:1 218:14
218:15

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at www.veritext.com.