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UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MYLAN PHARMACEUTICALS, INC.,
et al.,

Petitioners,

-vs-

Case No. IPR2016-01332
Patent 8,822,438 B2

JANSSEN ONCOLOGY, INC.,
Patent Owner.

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Videotaped Deposition of:

JOHN BANTLE, M.D.

Madison, Wisconsin

April 24, 2017

Reported by: Taunia Northouse, RDR, CRR, CRC

Veritext Legal Solutions
Mid-Atlantic Region
1250 Eye Street NW - Suite 350
Washington, D.C. 20005

Veritext Legal Solutions

<p style="text-align: right;">Page 6</p> <p>1 question; okay?</p> <p>2 A Yes.</p> <p>3 Q And we have a court reporter taking down your</p> <p>4 answers to my questions, so please try to give</p> <p>5 verbal answers to my questions; okay?</p> <p>6 A Yes.</p> <p>7 Q We'll try to take breaks about every hour or so.</p> <p>8 Please let me know if you need a break. I'll</p> <p>9 finish whatever question I'm on and we can take a</p> <p>10 break. Is that understood?</p> <p>11 A Yes.</p> <p>12 Q Is there any reason you cannot give complete and</p> <p>13 accurate testimony here today?</p> <p>14 A No.</p> <p>15 Q I've handed you a document that's been marked as</p> <p>16 Mylan Exhibit 1097. Is this your declaration?</p> <p>17 A It appears to be, yes.</p> <p>18 Q Is that your signature on the last page of the</p> <p>19 declaration?</p> <p>20 A Yes, it is.</p> <p>21 Q Was the declaration marked as Exhibit 1097 an</p> <p>22 accurate statement of the opinions that you've</p> <p>23 reached in this case?</p> <p>24 A Yes.</p> <p>25 Q Are there any errors in your declaration or --</p>	<p style="text-align: right;">Page 8</p> <p>1 Q So when you're talking about adrenal</p> <p>2 insufficiency, you're referring to a deficiency or</p> <p>3 insufficiency of all of the adrenal steroids; is</p> <p>4 that correct?</p> <p>5 A Well, at least the ones that are necessary for</p> <p>6 health and maintenance of life.</p> <p>7 Q And which are those?</p> <p>8 A Those would principally be the glucocorticoids and</p> <p>9 the mineralocorticoids.</p> <p>10 Q And what are the necessary glucocorticoids?</p> <p>11 A The most important is cortisol.</p> <p>12 Q And are there others?</p> <p>13 A There are other glucocorticoids, but they're</p> <p>14 basically precursors to cortisol, such that they</p> <p>15 occur in the process of developing the cortisol</p> <p>16 molecule, and they're not usually important in</p> <p>17 meeting body needs or maintaining normal adrenal</p> <p>18 function.</p> <p>19 Q Is it true that other glucocorticoids -- strike</p> <p>20 that. Is it true that other steroids other than</p> <p>21 cortisol have glucocorticoid activity?</p> <p>22 A Yes, that is true.</p> <p>23 Q And is it true that those steroids contribute to</p> <p>24 the glucocorticoid activity in the body?</p> <p>25 A I would have to qualify my yes and say that I</p>
<p style="text-align: right;">Page 7</p> <p>1 A None of which I'm aware.</p> <p>2 Q Okay. Doctor, we'll be talking a lot about a</p> <p>3 person of ordinary skill in the art today. When I</p> <p>4 refer to person of ordinary skill in the art or</p> <p>5 POSA, P-O-S-A, I'm referring to a person as you've</p> <p>6 defined it in your expert report. Is that</p> <p>7 understood?</p> <p>8 A Yes.</p> <p>9 Q And when we talk about the person's knowledge, it</p> <p>10 refers to that person's knowledge as of</p> <p>11 August 25th, 2006. Is that also understood?</p> <p>12 A Yes.</p> <p>13 Q Your report uses the terms adrenal insufficiency,</p> <p>14 low adrenal reserve, and mineralocorticoid excess.</p> <p>15 What do you mean by adrenal insufficiency?</p> <p>16 A Adrenal insufficiency would be a situation where</p> <p>17 the adrenal glands have failed or are in the</p> <p>18 process of failing, where symptoms are produced;</p> <p>19 and if diagnosis is not made and treatment</p> <p>20 provided, death can ensue.</p> <p>21 Q Is it the same as glucocorticoid deficiency?</p> <p>22 A No. I would view that as somewhat different.</p> <p>23 With glucocorticoid deficiency one has not enough</p> <p>24 of a particular kind of adrenal hormone and may</p> <p>25 have adequate amounts of other things.</p>	<p style="text-align: right;">Page 9</p> <p>1 don't think they usually do because they're not</p> <p>2 produced in significant amounts. They're simply</p> <p>3 precursors to cortisol.</p> <p>4 Q How is adrenal insufficiency diagnosed?</p> <p>5 A Well, the definitive test would be something</p> <p>6 called ACTH stimulation test referred to in this</p> <p>7 document as a Synacthen test.</p> <p>8 Q If a person of ordinary skill in the art wanted to</p> <p>9 determine whether a patient had adrenal</p> <p>10 insufficiency, what test or tests would that</p> <p>11 physician want to do?</p> <p>12 A Well, if one wanted to definitively make the</p> <p>13 diagnosis, one would do the Synacthen test.</p> <p>14 Q Are there any other tests that an individual would</p> <p>15 want to perform or have performed?</p> <p>16 A Yes. I think occasionally one might simply</p> <p>17 measure baseline cortisol value, typically first</p> <p>18 thing in the morning when cortisol values are</p> <p>19 highest. And if that cortisol value meets the</p> <p>20 threshold for full adrenal cortisol function, then</p> <p>21 one doesn't need to do the test.</p> <p>22 Q Are there any other tests that a physician would</p> <p>23 want to do in determining whether a patient has</p> <p>24 adrenal insufficiency?</p> <p>25 MS. GREB: Objection. Vague as to</p>

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1 time.

2 Q You can go ahead and answer the question.

3 A I'm to answer anyway. Definitely the Synacthen

4 test is the most important. There are other tests

5 that could be done that might provide insight, but

6 to make the diagnosis definitively, one would do

7 the Synacthen test.

8 Q Is that true today?

9 A Yes.

10 Q As it was in August of 2006?

11 A We call it something different, but yes, that is

12 true today.

13 Q Fair enough. To a person of ordinary skill in the

14 art in 2006, would patients' symptoms play any

15 role in the diagnosis of adrenal insufficiency?

16 A Yes. Typically symptoms might be the first clue

17 to testing for the condition. Although I think

18 it's important to say the symptoms are not very

19 specific, things like fatigue, which most of us

20 have, at least from time to time. So it creates a

21 problem in that the diagnosis is often overlooked

22 because the symptoms are nonspecific.

23 Q And do the symptoms become accentuated as the

24 disease progresses?

25 A Yes. As the disease progresses, more symptoms

Page 11

1 appear and definitely would indicate something is

2 wrong and would, I think, cause a doctor who has

3 insight and competence to begin to wonder about

4 adrenal insufficiency as the cause of the

5 symptoms. But because the symptoms are so

6 nonspecific, the diagnosis is often overlooked.

7 Q How would a person of ordinary skill in the art in

8 2006 diagnose a patient if they were concerned

9 about CYP17 inhibition?

10 MS. GREB: Objection. Vague.

11 A Yes. Can you restate that?

12 Q Sure. Well, let's back up a little bit. Have you

13 heard the term CYP17?

14 A Yes.

15 Q And what is CYP17?

16 A CYP17 is the short name for 17-alpha-hydroxylase,

17 1720-lyase, L-Y-A-S-E, which is an enzyme that's

18 important in cortisol production by the adrenal

19 glands and also important in the production of

20 adrenal and testicular androgens.

21 Q And so CYP17 is an enzyme; is that correct?

22 A Yes.

23 Q And that enzyme has two activities; is that right?

24 A Correct.

25 Q And those two activities as you recited, one is

Page 12

1 the 17-alpha-hydroxylase activity?

2 A Hydroxylase at the 17 position on the molecule.

3 Q Okay. And the other is a 1720-lyase activity; is

4 that correct?

5 A Yes, cleaves off two carbon atoms from the

6 molecule.

7 Q If a person of ordinary skill in the art in 2006

8 were concerned about the potential inhibition of

9 the CYP17 enzyme and the potential development of

10 adrenal insufficiency in light of that, what test

11 would that person of ordinary skill want to

12 perform to determine whether or not the patient

13 had adrenal insufficiency or was developing

14 adrenal insufficiency?

15 A Synacthen test would be I think the definitive

16 test.

17 MS. GREB: Objection. Vague. And

18 I'd just remind you to give me a second to

19 object.

20 THE WITNESS: I'm sorry.

21 MS. GREB: That's okay.

22 Q How would a person of ordinary skill in the art

23 diagnose whether or not a patient had inhibited

24 17-alpha-hydroxylase activity?

25 MS. GREB: Objection. Vague.

Page 13

1 A Well, the Synacthen test would give information as

2 to whether or not cortisol production remained

3 adequate, and if there was inhibition of an

4 enzyme, it should not be adequate. And then

5 someone might look for other things that might be

6 abnormal, like low DHEA or low androstenedione.

7 Q When you say one might, would that be part of what

8 a physician in your view, a person of ordinary

9 skill in the art, would do in his or her

10 diagnosis?

11 A I think it's hard to say for sure what one might

12 do. It's such an uncommon situation that most

13 endocrinologists will never encounter it in their

14 career, but I think that would be what I would do.

15 Q But is it fair to say you don't know what a person

16 of ordinary skill in the art would do?

17 MS. GREB: Objection. Misstates

18 prior testimony.

19 A Should I still answer?

20 Q Yeah. You can go ahead and answer.

21 A Yes. I think -- I think so.

22 Q And how would a person of ordinary skill in the

23 art diagnose a patient if she or he were concerned

24 that that patient had an inhibited 17-lyase

25 activity -- 1720-lyase activity?

Page 14

1 MS. GREB: Objection. Vague.

2 A An isolated defect in the lyase?

3 Q Yes, Doctor.

4 A I think one would still want to do the Synacthen

5 test to confirm cortisol production is normal.

6 And then one would want to measure DHEA,

7 androstenedione, A-N-D-R-O-S-T-E-N-E-D-I-O-N-E,

8 and in a man testosterone.

9 Q Is it true that just because a patient has a low

10 cortisol level, that does not mean that they have

11 adrenal insufficiency?

12 MS. GREB: Objection. Incomplete

13 hypothetical.

14 A If they have a low cortisol after a Synacthen

15 stimulation test, they have adrenal insufficiency.

16 Q If one were just looking at the cortisol level --

17 A Yes.

18 Q -- would the cortisol -- would a low cortisol

19 level alone mean that a patient has adrenal

20 insufficiency?

21 A If it is low after Synacthen administration, in my

22 opinion, yes.

23 Q And your declaration also refers to low adrenal

24 reserve. What is low adrenal reserve?

25 A Low adrenal reserve might be considered the

Page 15

1 forerunner to adrenal insufficiency where adrenal

2 function is partially compromised but not yet

3 fully compromised such that a person might be able

4 to meet basic cortisol production needs but could

5 not augment cortisol production at times of great

6 stress.

7 I've been warned that using analogies is

8 probably not a good idea in this proceeding, but I

9 can't help myself in this case to say low adrenal

10 reserve might be like a car whose engine is not

11 working properly and can only go 30 miles an hour.

12 You can get around town okay in that car, but take

13 it out on the freeway and you're likely to have

14 trouble.

15 Q And how is low adrenal reserve diagnosed?

16 A It would usually be diagnosed by the Synacthen

17 test.

18 Q Are there any other methods a person of ordinary

19 skill in the art would use in determining

20 definitively whether or not a patient had low

21 adrenal reserve?

22 A No, I don't think so.

23 Q And when you refer to low adrenal reserve, how do

24 you define low?

25 A Low adrenal reserve would be defined as achieving

Page 16

1 a cortisol value in the Synacthen test that does

2 not meet the threshold for normal.

3 Q And what is the threshold for normal in your view?

4 MS. GREB: Objection. Vague as to

5 time.

6 A It would be 500 nanomoles per liter or

7 18 micrograms per deciliter, depending on which

8 measure you would like to use.

9 Q Would a person of ordinary skill in the art

10 believe that is the threshold for normal?

11 A Well, there's some debate about what normal is.

12 And the literature would suggest there is some

13 wiggle in that threshold. Some people say it

14 needs to be 20 micrograms per deciliter based on

15 data in the literature. Others say 18 is

16 sufficient. But it's approximately the same.

17 Q What are the symptoms of low adrenal reserve?

18 A The symptoms of low adrenal reserve may be none.

19 In other instances there might be fairly

20 nonspecific symptoms like fatigue, poor appetite,

21 lack of energy, and stamina.

22 Q And why would a person of ordinary skill in the

23 art believe low adrenal reserve could be an issue

24 for patients?

25 A A low adrenal reserve would be an important issue

Page 17

1 because that individual will probably do fine in

2 day-to-day life as long as nothing stressful

3 happens. But should that person become ill, say

4 develop pneumonia or some significant illness, or

5 should that person require surgery, perhaps urgent

6 surgery, they could quickly decompensate because

7 of the low adrenal reserve and inability to

8 augment cortisol production as would be necessary

9 to meet the stress.

10 Q What illnesses could lead to a decompensation with

11 respect to low adrenal reserve?

12 A All sorts of illnesses. The more serious the

13 illness, the more likely the patient would be

14 compromised. Pneumonia, as I previously

15 mentioned, would be one that comes immediately to

16 mind. Any sort of infectious process would

17 potentially put the person at risk. Numerous

18 other medical conditions that provide major stress

19 for the body would potentially lead to

20 decompensation.

21 Q To your knowledge, does metastatic resistant --

22 (Reporter interrupts)

23 Q To your knowledge, does metastatic resistant --

24 I'm sorry, let me start that again. To your

25 knowledge, does metastatic castrate resistant

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