

SCOTT L. CHILDS, PH.D.
UNIVERSITY OF MI., ET AL V. NOVARTIS PHARM

July 11, 2023
1-4

Page 1

1 UNITED STATES DISTRICT COURT
2 NORTHERN DISTRICT OF CALIFORNIA
3 SAN FRANCISCO DIVISION
4 -----
5 THE REGENTS OF THE UNIVERSITY
6 OF MICHIGAN, and THE UNIVERSITY
7 of SOUTH FLORIDA BOARD OF TRUSTEES,
8
9 Plaintiffs,
10
11 v. Case No. 3:22-CV-04913-AMO
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13 NOVARTIS PHARMACEUTICALS
14 CORPORATION,
15 Defendant.
16 -----
17
18 VIDEOTAPED DEPOSITION OF
19 SCOTT L. CHILDS, Ph.D.
20 July 11, 2023
21 9:30 a.m. EST
22
23 Reported by: Goldy Gold, RPR
24 Job No. J9894324

Page 3

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28 Brian Robinson, Esq., Fish & Richardson
29 (videoconference)
30
31
32

Page 2

1 Date: July 11, 2023
2 Time: 9:30 a.m. EST
3
4
5 VIDEOTAPED DEPOSITION OF SCOTT L.
6 CHILDS, Ph.D., taken by Counsel for Defendant,
7 in the above-titled matter, on July 11, 2023,
8 commencing at 9:30 a.m. EST, and reported by
9 Goldy Gold, a Registered Professional Reporter
10 and a Notary Public within and for the District
11 of Columbia.
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3	July 11, 2023	
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Page 17 1 when I was brought on board with SSCI was to perform 2 fundamental research on pharmaceutical cocrystals, 3 essentially to develop the field. 4 Q. Did you prepare pharmaceutical 5 cocrystals for companies who hired you? 6 A. Yes. 7 Q. Was that at Design Science or only at 8 SSCI? 9 A. It -- I did not prepare any cocrystals 10 for other companies when I was functioning under 11 Design Science Research. I prepared research 12 materials on pharmaceuticals. 13 Q. What types of research materials? 14 A. I worked with compounds such as 15 ibuprofen, to create cocrystals of them to learn 16 about the field in general. 17 Q. What types of things were you trying to 18 learn about? 19 A. The field of pharmaceutical cocrystals 20 was relatively young at that point, and so 21 essentially the purpose of doing the research was to 22 understand better how they form and what the	Page 19 1 Q. And then at that point, you became a 2 part of SSCI? 3 A. That's correct. 4 Q. You were at SSCI from January 2002 until 5 September 2008? 6 A. To clarify, I -- I stayed in Atlanta. I 7 never went to SSCI. 8 Q. Okay. But your employer was -- 9 A. I was employed by SSCI in that time -- 10 in that time period. 11 Q. Okay. And you indicated before that 12 your work at SSCI included fee-for-service research 13 and performing fundamental research on pharmaceutical 14 cocrystals; is that correct? 15 A. That is correct. 16 Q. Were those the only two major job 17 responsibilities that you had at SSCI? 18 A. There were other responsibilities, but 19 those were my main responsibilities, yes. 20 Q. In terms of the fee-for-service 21 research, what types of projects were those? 22 A. Companies would come to SSCI in order to
Page 18 1 properties were and how they could be changed. 2 Q. In that 2001 time frame, were you able 3 to predict in advance whether any given cocrystal, 4 such as one with ibuprofen, would form? 5 A. I would not say I could predict a 6 particular cocrystal, but I was learning to more 7 effectively design materials. But if you're asking 8 about crystal structure prediction, no. 9 Q. Could you predict whether any particular 10 hydrogen bonds would form between two components of a 11 cocrystal in advance of making it? 12 MS. BURGNER: Objection. Outside the 13 scope of Dr. Childs' declaration. 14 THE WITNESS: That was part of the 15 process, was designing materials by evaluating 16 different hydrogen bond potential. But you 17 couldn't predict what would actually occur. 18 BY MS. SWARTZ: 19 Q. Okay. So I understand from your CV that 20 you left -- or Design Science was purchased by SSCI 21 around December of 2001; is that correct? 22 A. Yes.	Page 20 1 have us perform what we would call screening 2 services, screening projects, where they would bring 3 us a -- active pharmaceutical ingredient, typically, 4 and ask us to find different crystal forms of that 5 active pharmaceutical ingredient. 6 Q. Why did they require the services of 7 SSCI to do that? 8 A. SSCI was a -- a company that specialized 9 in this area of research. And typically companies 10 would come to us when their molecule was particularly 11 difficult to use. Poor properties, for example. 12 Q. Did your fee-for-service research 13 include preparing cocrystals? 14 A. It did. 15 Q. Did it include preparing pharmaceutical 16 cocrystals? 17 A. It did. 18 Q. Did your work include formulating any 19 pharmaceutical cocrystals? 20 A. It did. 21 Q. Can you elaborate on that particular 22 work?



Page 25 1 we've had a working relationship, and whenever they 2 had a cocrystal issue, they would essentially 3 outsource it to me. 4 Q. What do you mean by a "cocrystal issue"? 5 A. Often cocrystals would be looked at as a 6 possible solution to a problem that a company might 7 have. And so they would look for a cocrystal when 8 the situation called for it. 9 Q. Can you provide an example of a problem 10 they might have with a cocrystal that they would come 11 to you for? 12 A. In -- it wouldn't necessarily be a 13 problem with a cocrystal. It would be a problem with 14 -- 15 Q. Understood. 16 A. -- the molecule that a cocrystal could 17 potentially solve. Often this was in two particular 18 categories. Either the molecule would not 19 crystallize on its own, so it was amorphous, or the 20 molecule, when it did crystallize, had very poor 21 solubility in aqueous systems. And cocrystals can 22 address those two problems, potentially.	Page 27 1 pharmaceutical ingredient, many cofomers, many 2 conditions, crystallization conditions. That 3 constitutes a screen of these different possible 4 conditions. 5 Q. Why do you need to examine multiple 6 different cofomers in multiple different conditions? 7 A. We can't predict if a cocrystal will 8 form, and so we create the conditions where they can 9 form and find out which cocrystals do form. 10 Q. Are you still at Renovo right now? 11 A. I am. 12 Q. And what percentage of your professional 13 work time is spent at Renovo? 14 A. All of it. 15 Q. Okay. Your CV also includes an entry 16 for Amplio Pharma, LLC. Do you see that? 17 A. Amplio. 18 Q. My apologies. 19 A. That's fine. 20 Q. I apologize. Amplio. 21 A. Yes. Yes. 22 Q. Can you explain what Amplio is and what
Page 26 1 Q. So what would you do at Renovo if 2 somebody came to you with that particular problem 3 with an active ingredient? 4 A. I would -- if I were engaged for this 5 service, I would typically screen the active 6 ingredient by attempting to cocrystallize it with 7 different types of cofomers. 8 Q. And what's a cofomer? 9 A. A cofomer is an additional component in 10 a cocrystal. 11 Q. How would you go about selecting the -- 12 the cofomers to screen? 13 A. That would be done differently for each 14 compound, in consultation with the company, to 15 incorporate their -- the scope of the screen and 16 their particular needs in terms of the property. So 17 a collection of cofomers would be assembled for each 18 compound independently. 19 Q. You referred a few times to doing a 20 screen. What is a screen? 21 A. A screen is just a word we use to 22 essentially do a matrix of experiments: One active	Page 28 1 you did there? 2 A. Amplio was; it ended in July of 2012. 3 This was a company I started with some other partners 4 in order to look at different known FDA-approved 5 active ingredients to attempt to find cocrystals. 6 Q. Why were you focused on known 7 FDA-approved active ingredients? 8 A. That was the -- 9 (Reporter clarification.) 10 THE WITNESS: We focused on compounds 11 that had already been approved by the FDA that 12 also presented a potential for improving the 13 properties through cocrystal formation. 14 BY MS. SWARTZ: 15 Q. What types of properties? 16 A. The properties varied, although often 17 they just would be focused around a bioavailability. 18 Q. What is bioavailability? 19 A. It's a term referring to how much of the 20 molecule gets into the bloodstream compared to the 21 dose that you took orally. 22 Q. You indicated that you started Amplio

DEPOSITION ERRATA SHEET

Our Assignment No. J9894324

CASE NAME: The Regents of the University of
Michigan, et al., v. Novartis Pharmaceuticals Corp.

DECLARATION UNDER PENALTY OF PERJURY

I declare under penalty of perjury that I
have read the entire transcript of my Deposition
taken in the captioned matter or the same has been
read to me, and the same is true and accurate, same
and except for changes and/or corrections, if any, as
indicated by me on the DEPOSITION ERRATE SHEET
hereof, with the understanding that I offer these
changes as if still under oath.



SCOTT L. CHILDS

Subscribed and sworn to on the _____ day of

_____, 2023 before me,

Notary Public,

in and for the State of _____



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Page No. 7 Line No. 16 Change to: _____

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Reason for change: _____

Page No. 13 Line No. 16-17 Change to: "Nonbonded

Interactions in Molecular Crystals"

mistranscription

Reason for change: _____

Page No. 15 Line No. 17-18 Change to: The Cambridge

database has a number of programs

mistranscription

Reason for change: _____

Page No. 26 Line No. 16 Change to: particular needs in

terms of the properties

mistranscription

Reason for change: _____

Page No. 28 Line No. 17 Change to: around bioavailability

Reason for change: mistranscription

SIGNATURE:  DATE: 8/17/2023



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1 Reason for change: _____
2 _____
3 Page No. 70 Line No. 5 Change to: non-ionized
4 _____
5 Reason for change: mistranscription
6 _____
7 Page No. 79 Line No. 20-22 Change to: ...a person skilled in
8 the art would read the entirety of the -- the patent and the prosecution history,
9 Reason for change: mistranscription
10 _____
11 Page No. 102 Line No. 15 Change to: that a solvent molecule can be
12 _____
13 Reason for change: mistranscription
14 _____
15 Page No. 130 Line No. 13, 15, 17, 22 Change to: dimer
16 _____
17 Reason for change: mistranscription
18 _____
19 Page No. 131 Line No. 3 Change to: dimer
20 _____
21 Reason for change: mistranscription
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