

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD
PATENT NO. 10,131,682

SYNAFFIX B.V.,)
)
Petitioner,)
)
vs.)
)
HANGZOU DAC BIOTECH)
CO., LTD.,)
)
Patent Owner.)

VIDEOCONFERENCE DEPOSITION OF SHEILA BAKER
TAKEN ON BEHALF OF THE PATENT OWNER
APRIL 9, 2025

I N D E X

WITNESSES

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EXHIBITS

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Exhibit 1075	Declaration of Dr. Sheila Baker	9
Exhibit 1006	Article: "Unusual binding sites for horseradish peroxidase on the surface of cultured and isolated mammalian cells"	12
Exhibit 1085	Supplemental Declaration of Dr. Sheila Baker	10

(Exhibits presented via Exhibit Share.)

STENOGRAPHER'S NOTE: All quotations from exhibits are reflected in the manner in which they were read into the record and do not necessarily denote an exact quote from the document.

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VIDEO-CONFERENCE DEPOSITION OF
WITNESS, SHEILA BAKER, produced, sworn and examined
on the 9th day of April, 2025, via Veritext Virtual
Videoconference, before Tara Schwake, a Registered
Professional Reporter, Certified Realtime Reporter,
Certified Shorthand Reporter (IL), Certified Court
Reporter (MO), and Notary Public within and for the
State of Missouri.

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1 IT IS HEREBY STIPULATED AND AGREED by
2 and between Counsel for Petitioner and Counsel for
3 Patent Owner that this deposition may be taken by
4 Tara Schwake, Notary Public and Certified Realtime
5 Reporter, thereafter transcribed into typewriting,
6 with the signature of the witness being expressly
7 reserved.

8 SHEILA BAKER,
9 Of lawful age, having been produced, sworn, and
10 examined on the part of Patent Owner, testified as
11 follows:

12 * * * * *

13 (Deposition commenced at 9:11 AM.)

14 EXAMINATION

15 QUESTIONS BY MS. MATTES:

16 Q Okay. Good morning, Dr. Baker. My
17 name's Catherine Mattes. I'm an attorney at the
18 law firm of Quinn Emanuel, and with me today is my
19 colleague Jihong Lou. She's off screen right now
20 because I'll be the person asking you questions
21 today. We represent Hangzou DAC Biotech in a
22 patent proceeding before the United States Patent
23 Office.

24 Do you mind stating your name for the
25 record?

1 A Sheila Baker.

2 Q And Dr. Baker, have you been deposed
3 before?

4 A No.

5 Q So this is your first deposition?

6 A That's correct.

7 Q Okay. So given that, I would like to
8 go over some ground rules just in case, it's
9 helpful and will ensure that today the proceeding
10 will run as smooth as possible.

11 Is that okay with you?

12 A Certainly.

13 Q So you understand that you are under
14 oath today and that your testimony carries the same
15 weight and consequences as if you were testifying
16 in court?

17 A I do.

18 Q And do you understand that there's a
19 court reporter here today who is going to be taking
20 down everything we say word for word, so it's very
21 important that we don't talk over each other.

22 Is that acceptable to you?

23 A Yes.

24 Q So please provide verbal responses
25 rather than nodding or gestures. This way the

1 court reporter can accurately get our answers -- my
2 questions and your answers to those questions.

3 Is that okay with you?

4 A Yes.

5 Q I'm going to just ask, if there's a
6 question that I ask that you don't understand,
7 please just let me know.

8 Is that okay with you?

9 A Yes.

10 Q If you need a break at any time, also
11 please let me know. I only ask that you answer
12 whatever question is pending at that moment.

13 Is that all right with you as well?

14 A Yes.

15 Q And do you have any documents, notes,
16 or other materials with you today that you plan on
17 referencing during your deposition?

18 A Yes.

19 Q And what are those?

20 A I have a copy of my Declaration and
21 the Supplemental Declaration, and a paper copy of
22 the two scientific articles relevant to those
23 Declarations in front of me.

24 I have a second screen open, but I --
25 that is intended to only be used for the Exhibit

1 Share if needed. There's nothing else with me
2 here.

3 Q Okay. I was going to ask you, do you
4 agree not to communicate with anyone via text,
5 email, chat, or any other methods during this
6 deposition without disclosing such communications
7 to all parties?

8 A Yes, I agree.

9 Q Okay. And since we are on a Zoom,
10 can you confirm that you are alone in the room
11 where you are giving the testimony today?

12 A Yes. I am.

13 Q And if anyone else enters the room
14 during this deposition, will you please let us know
15 right away?

16 A Yes.

17 Q Thank you. Other than with your
18 attorneys, have you discussed the substance of your
19 testimony or your Declaration with anyone prior to
20 today's deposition?

21 A No.

22 Q And is there any reason you cannot
23 answer my questions truthfully or accurately today?

24 A No.

25 Q So you mentioned that you have two

1 expert Declarations with you that you submitted as
2 part of this case. Correct?

3 A Yes.

4 Q Okay. And I guess just for the
5 record, the first Declaration is Exhibit 1075 so
6 it's been previously marked that. Can you just
7 please look through the copy that you have.

8 Does the copy that you have have the
9 Exhibit 1075 stamped on the front page of it?

10 A Yes, it does.

11 Q Okay. So can you please look through
12 and confirm that it is a clean and full copy of
13 your Declaration?

14 A Miss Tara, should we be putting these
15 into the Exhibit Share folder even if we're not
16 projecting them onto the screen?

17 THE REPORTER: Yes, please.

18 MS. LOU: It should be in the marked
19 exhibit folder.

20 THE REPORTER: It is, thank you.

21 A Yes, I have reviewed my paper copy.
22 It is clean and accurate.

23 Q (BY MS. MATTES) And on page 14, do
24 you see that there is a signature on that page?

25 A Yes.

1 Q Is that your signature?

2 A Yes, it is.

3 Q And do you stand by the opinions set
4 forth in this Declaration?

5 A Yes, I do.

6 Q And do you have any corrections or
7 supplementations to this Declaration?

8 A Can you clarify? I have a
9 Supplemental Declaration --

10 Q I'll ask that in a different way.
11 So do you have any corrections to this Declaration
12 from a substantive perspective?

13 A I do not.

14 Q So does this Declaration set out all
15 of your opinions that you have formed to date in
16 this matter?

17 A Yes.

18 Q And then you mentioned that there was
19 a second Declaration called your Supplemental
20 Declaration. Correct?

21 A That's correct.

22 Q And that Declaration is Exhibit 1085.
23 Correct?

24 A Correct.

25 MS. MATTES: And Jihong, if you don't

1 mind also putting that into the shared exhibit
2 folder for the marked exhibits.

3 Q (BY MS. MATTES) And then can you
4 just please confirm that the second Declaration
5 that you have in front of you, Exhibit 1085, is a
6 complete copy and a clean copy of your Declaration?

7 A Yes.

8 Q Then on page 6, is that your
9 signature?

10 A Yes.

11 Q And do you stand by the opinions set
12 forth in this Declaration?

13 A Yes.

14 Q Do you have any corrections to this
15 Declaration?

16 A No.

17 Q So if you don't mind going back to
18 actually your first Declaration, we'll put the
19 second one to the side, and so that's Exhibit 1075,
20 and if you turn to page 3 of your Declaration? In
21 paragraph 3 here you state that you (quote as
22 read) :

23 ...have no financial stake in the
24 outcome of this proceeding.

25 Do you see that?

1 A I do.

2 Q Is that still true today?

3 A Yes, it is.

4 Q And right after that you state that
5 you are being compensated at your normal hourly
6 rate.

7 Do you see that?

8 A I do.

9 Q And what is your normal hourly rate?

10 A \$400 an hour.

11 Q If you turn to page 5 of your
12 Declaration, it's section III under the heading
13 Documents and Information Considered.

14 Do you see that?

15 A I do.

16 Q In paragraph 9 you state, (quote as
17 read) :

18 In providing the testimony and
19 opinions in this Declaration, I
20 have reviewed the additional
21 documents listed below.

22 Do you see that?

23 A I do.

24 Q Here you list Exhibit 1006, which is
25 the Straus reference that's -- that you discuss in

1 your Declaration, and Exhibit 1074.

2 Do you see that?

3 A I do.

4 Q Okay. Are these the only two
5 references that you considered in forming your
6 opinions for your Declaration?

7 MR. HOUSTON: Objection, form.

8 A Yeah, that's confusing to me.

9 Q (BY MS. MATTES) Sure. So in this
10 section you wrote that you reviewed these two
11 documents as part of providing your opinions in
12 this Declaration. Correct?

13 A Yes. These are the source material
14 for what I've wrote in this Declaration.

15 Q Right. And I guess my question to
16 you is did you review or rely on any other
17 documents in forming your opinions for purposes of
18 your Declaration?

19 MR. HOUSTON: Objection, form.

20 A Yeah, I'm using my experience in
21 forming my opinion, so I have been working in
22 biomedical research for 30 years, I've been using
23 techniques applicable to the work that's described
24 here, and that certainly is part of forming my
25 opinion. But that is -- yeah. That's 30 years of

1 numerous experiments.

2 Q (BY MS. MATTES) Right. That's a
3 fair clarification to make. My question was
4 outside of your personal experience and your work
5 in the biomedical research field and besides the
6 two documents that you listed here, are there any
7 other documents specifically that you're relying on
8 in forming your opinions?

9 A No.

10 Q Okay. Did you review the patent that
11 is at issue in this case in forming your opinions?

12 A No, I did not review the patent.

13 Q And you did not consider the
14 publication -- well, never mind. Strike that
15 question.

16 Do you have an understanding that
17 Synaffix submitted a Declaration from another
18 expert in this case?

19 A That's a confusing question to me. I
20 would assume so, but I don't have direct
21 confirmation of that.

22 Q So you don't know one way or the
23 other if another expert submitted a Declaration on
24 behalf of Synaffix in this case?

25 A No, I don't have that knowledge. I

1 don't know.

2 Q So that's fair to say, then, that you
3 didn't review any other expert's Declaration in
4 this case for purposes of forming your opinions?

5 A No, I did not.

6 Q Okay. Thank you. One of the topics
7 that you discuss in your Declaration is this
8 horseradish peroxidase; correct?

9 A Yes.

10 Q So do you use horseradish peroxidase
11 in your lab?

12 A Yes.

13 Q In what capacity do you use
14 horseradish peroxidase?

15 A We use this as a conjugate to a
16 variety of molecules to monitor the binding of
17 various agents to proteins, either in cells or in
18 extracted and purified proteins.

19 Q If I reference horseradish peroxidase
20 as "HRP," you would understand what I'm intending
21 to mean?

22 A Yes.

23 Q And when you say that you use
24 horseradish peroxidase as a conjugate to a variety
25 of molecules to monitor the binding of various

1 agents to proteins, what do you mean when you say
2 "as a conjugate"?

3 A So most often, in all the cases that
4 I can recall at the moment, HRP is always
5 covalently bound to an antibody of some type. So
6 that in my particular uses, it's the antibody
7 binding to a protein, and I'm using HRP for
8 identification purposes.

9 There are a number of different ways
10 in which HRP can be used in research labs. That's
11 just the way I use it in my lab.

12 Q And in what context do you use it?
13 Are they part of assays or cell-binding
14 experiments? Can you elaborate a little bit more?

15 A Yes, it's whenever we are looking for
16 the expression levels or location of a particular
17 protein. Or a particular class of protein.

18 Q And then how does HRP assist in you
19 looking at expression levels or, you know, for a
20 particular protein or a particular class of
21 proteins?

22 A Right. HRP is an enzyme, so we can
23 provide it with its substrate and it produces a
24 product that we can visualize in a number of ways.

25 Q So is HRP used as a detection enzyme

1 or as a reporter in those cases?

2 A In my lab specifically, it is used as
3 a reporter.

4 Q And in the experiments that you
5 perform in your lab, HRP is then conjugated to an
6 antibody you stated; right?

7 A Yes.

8 Q Okay. And it's the antibody that is
9 the entity that is binding to the cells or other
10 materials that you are studying?

11 A True. I do want to emphasize that,
12 again, is how I use it in my lab. There are a
13 number of ways in which biomedical scientists use
14 HRP and that is not the way it was used by Straus.
15 So that -- so the way I use it is as general
16 information on how HRP may be used.

17 Q Okay. And have you ever used HRP in
18 the way that Straus was using HRP?

19 A No, I have not.

20 Q So you have never used HRP as the
21 entity that binds to -- that binds to living cells
22 or any other target molecule that you're studying?

23 A I have used very similar molecules to
24 do that, but I have not specifically used HRP to
25 bind to the surface of the cells used in the Straus

1 study.

2 Q In the types of experiments that you
3 have done with HRP -- strike that.

4 So in these experiments that you have
5 conducted in your lab, HRP then is not intended to
6 bind to the target cell. Correct?

7 A That's correct.

8 Q Okay. Would you agree that one of
9 the reasons that HRP is used for the kinds of
10 experiments that you are conducting in your lab is
11 because HRP doesn't have an inherent affinity to
12 bind to the target cells you're investigating?

13 A No.

14 MR. HOUSTON: Objection.

15 Q (BY MS. MATTES) Why not?

16 A Why not to the objection, or why not
17 to --

18 Q No, why not to your answer. You
19 answered "no," so I'm asking why "no"?

20 A The Straus, et al., study shows
21 that --

22 Q Well, this is separate from Straus,
23 so I'm asking you, right --

24 A But that knowledge forms how I use
25 it. So I, in my lab, I specifically study a

1 subclass of neurons known as photoreceptor cells.
2 Those particular cells only have a very low
3 background surface binding of HRP.

4 So it is not appropriate to use HRP
5 for direct binding of photoreceptor cell surfaces.

6 Q So in your lab, when you say those
7 particular cells have low background surface
8 binding for HRP, how do you know that?

9 A That's based on experience. When we
10 do experiments, we run negative controls, so I have
11 seen that personally myself, and that is a
12 reproducible fact that's been seen in many other
13 labs.

14 Q If horseradish peroxidase did have --
15 did have the affinity to bind to those cells, how
16 would the results of the tests that you're running
17 be compromised?

18 MR. HOUSTON: Objection, form.

19 A Can you clarify?

20 Q (BY MS. MATTES) Sure. So if
21 horseradish peroxidase did have an affinity to bind
22 to the type of cells that you were investigating,
23 how would the results of those tests be altered, or
24 what problems would that cause for the kinds of
25 tests that you were conducting?

1 A I'm not agreeing with the term
2 "problem" per se. If HRP bound directly and
3 specifically to the cell surface of photoreceptor
4 cells, it would just change the assays I would use
5 it for.

6 So I would use it -- so if it did
7 bind specific photoreceptor cells, I would use it
8 as a direct binding agent rather than an indirect
9 binding agent as I currently am.

10 Q Does HRP binding -- sorry. Strike
11 that.

12 Does the binding of HRP have -- does
13 it have specific binding, or is it more
14 non-specific binding?

15 MR. HOUSTON: Objection, form.

16 A Should I answer that?

17 Q (BY MS. MATTES) If you're able to,
18 yes.

19 A That's described in the Straus paper.
20 And that teaches us that it does have subspecific
21 binding.

22 Q So when you -- in your experiments in
23 your lab, you use antibodies to bind to
24 photoreceptor cells because antibodies bind
25 specifically to those receptors; correct?

1 A That's an overgeneralization to say
2 that antibodies bind to those receptors.

3 Q So when you stated before that you
4 use antibodies in your lab for your cell-binding
5 experiments, then if they don't bind to those
6 receptors -- are you saying they don't bind to
7 those receptors or -- would you mind expanding on
8 your answer?

9 A Right. No, I'm saying that
10 antibodies are a very broad class encompassing
11 thousands of individual molecules. And when I do
12 my assays, I will use an individual specific
13 molecule within that class.

14 So that's why I say do I use
15 antibodies is just a broad generalization, but then
16 when you ask binding to a receptor, to me that
17 implies a specific receptor, specific
18 protein-protein interaction, and I would need more
19 information to answer that correctly.

20 MS. MATTES: Let's go off the record
21 for one second, please.

22 (Off the record.)

23 Q (BY MS. MATTES) So you mentioned in
24 the Straus paper that it teaches that HRP does have
25 specific binding. Can you please direct us to

1 where in the Straus paper it discusses that?

2 A It discusses that throughout the
3 entire paper, really.

4 Q Is there a specific part of the
5 Straus paper you can point us to?

6 A I can certainly give you examples,
7 understanding that that's not limiting.

8 Q Sure.

9 A So if I could direct your attention
10 to figure 1, which is on page 5, or I'm sorry, page
11 5 of my printout. Within the article it would be
12 page 281.

13 Q We can reference the page 5.

14 A Okay. That's fine. So they have a
15 set of six panels, if you look to the left, if you
16 can just compare the images in panel 1 versus panel
17 3, what is shown there is the staining of cells, a
18 specific cell type known as GH3, and what we see
19 here is a dark staining pattern in an oval shape
20 within the center and then a strong outline just
21 around that.

22 The staining for HRP is that outline,
23 that is the cell surface that is showing HRP
24 binding in panel 1; whereas, in panel 3, which is
25 an experiment where they blocked that binding, you

1 see that that specific staining at that, and along
2 the edges of the cell is greatly reduced. Almost
3 non-existent. So. That is interpreted as cell
4 surface binding.

5 And again, that's just one example.
6 We see this throughout many of the figures
7 throughout this paper along with the descriptions
8 of their other experiments.

9 Q How is that example of "specific
10 binding," I guess, as opposed to what sometimes is
11 used the term "non-specific binding"?

12 A That's right. This is actually a
13 very good example for that. So, yes. As a
14 scientist, I'm always comparing at least two
15 things. So in panel 1, you could ask if that
16 staining along the surface of the cell is specific,
17 and an experiment that would convince you of that
18 is to block the interaction, and that is exactly
19 what is done in panel 3. And I noted that the
20 outlining of the cells is greatly diminished but
21 not completely gone. So where you see traces of
22 that, that is considered to be the level of
23 background binding.

24 And again, that's in comparison,
25 panel 3 to panel 1.

1 Q Another topic that you covered in
2 your Declaration which is related to this is cell
3 fixation techniques. Do you recall that?

4 A Yes. Correct. I do.

5 Q Can you explain, I guess, the general
6 process of cell fixation as used in in vitro
7 cell-binding studies?

8 A I would need to clarify one of the
9 terms you used.

10 Q Sure.

11 A In vitro means in -- basically in
12 test tube; right? But whenever we're working with
13 cells, we usually refer to that as in vivo.

14 Q Okay. So then can you just explain
15 the general process of cell fixation as use in --
16 I'll remove the in vitro and just say cell-binding?

17 A Absolutely. So cell fixation has
18 been used for decades, nearly a hundred years.
19 Most often it's a chemical reaction that is applied
20 to cells to capture them in their living state so
21 that you can then perform assays on them without
22 changing that state.

23 Q And is it your testimony, then, that
24 cell fixation techniques don't cause any chemical
25 or physical changes to the cellular structures of

1 those cells during the cell fixation process?

2 A Cell fixation does cause some
3 chemical changes, but again, the purpose is to
4 capture the cells in as close to their living state
5 as possible so that you can continue to work with
6 them.

7 Q What chemical changes does cell
8 fixation cause to the cells?

9 A Yes. So that answer is going to
10 depend on the specific method of fixation. Here in
11 the Straus paper they are using fixation with cold
12 methanol followed by formaldehyde. Cold methanol
13 causes a precipitation of some proteins, and the
14 formaldehyde causes crosslinking of primary amines.

15 Q Do any physical changes occur to the
16 cellular structures during the fixation process?

17 A Just at the molecular level as I've
18 described. And by, let me clarify, by molecular, I
19 meant the chemical reactions I described.

20 Q And then how might these changes
21 affect the accessibility of cellular binding sites
22 compared to the natural state of the cells?

23 A It is possible that you can have a
24 site become occluded. By the chemical reaction.

25 Q When you say "occluded," what do you

1 mean, that it would be blocked or not available for
2 binding?

3 A It would be not available.

4 Q Would these kinds of changes also
5 expose epitopes or binding sites that would
6 normally be hidden in living cells?

7 A I believe that's possible, but it
8 would be very rare. It is much more frequent that
9 you would block something.

10 Q And how do you know that?

11 A Well, you would have no staining. So
12 again if we refer to panel 1 of the figure I went
13 through, we would not see that surface staining.

14 Q How do processes such as -- or how do
15 cellular processes like, for example, endocytosis
16 or receptor recycling factor into cell-binding
17 studies, and are these preserved in fixed cells?

18 MR. HOUSTON: Objection, form.

19 Q (BY MS. MATTES) You still have to
20 answer the question.

21 A Oh, okay. Certainly. The fixation
22 with formaldehyde will slow down endocytosis, but
23 not completely block it.

24 Q And how does that impact binding, the
25 binding sites, if at all?

1 A It would not. The binding sites are
2 still there.

3 Q Can fixation alter the cellular
4 microenvironment or surface charge in ways that may
5 impact binding?

6 A Not the fixatives, no.

7 Q I don't know if I heard what you
8 just --

9 A My answer was no, the fixatives would
10 not change the charge.

11 Q Are there differences that you might
12 expect to see between the binding patterns in fixed
13 cells versus living cells?

14 A I don't expect so.

15 Q In your experience, have you observed
16 instances where a binding agent performed
17 differently in fixed cells versus living cells?

18 A I have not.

19 Q Are there other approaches besides
20 cell-binding studies that better predict how a
21 binding agent might interact with cells in their
22 natural state?

23 MR. HOUSTON: Objection, form.

24 A I would say no. This is the primary
25 test we do.

1 Q (BY MS. MATTES) So are there any
2 alternative approaches that are done besides this?

3 A To -- to look at cell surface -- to
4 look at cell-binding.

5 Q Yes.

6 A Yes.

7 Q And what are they?

8 A I'm wanting to qualify. They're
9 fairly minor. So, for instance, in this experiment
10 you would still use HRP to bind, but instead of
11 visualizing the binding through a microscope, you
12 might assay it with an enzymatic assay or some
13 other readout, but it's still HRP binding to the
14 cell surface.

15 Q How does assaying it with an
16 enzymatic assay, I guess, assist you in figuring
17 out or further understanding the cell-binding of a
18 cell-binding agent?

19 A It doesn't change the result. It's
20 just an alternative approach.

21 Q And what information do you glean
22 from that assay?

23 A I can't say a specific answer there.
24 I can just say that in general, the scientific
25 method is strengthened whenever we can reproduce a

1 finding with multiple methods.

2 Q Prior to this case, had you been
3 aware of the Straus reference?

4 A No. I was not.

5 Q And so you'd never cited to the
6 Straus reference in any of your publications?

7 A No, I have not.

8 Q Are you aware that Straus has only
9 been cited 14 times since its publication in 1986?

10 A No, I was not.

11 Q Are you aware of any other -- are you
12 aware of any publications other than Straus that
13 discuss binding of HRP on cells?

14 A I did not research that, no.

15 Q And so you are not aware of any
16 papers published by other labs other than Straus
17 that describe HRP as a cell-binding agent.
18 Correct?

19 A I did not investigate that. I don't
20 know if they exist or if they don't.

21 Q So you didn't look into that.

22 A No. I was asked to give my opinion
23 on the Straus paper.

24 Q So then it's fair to say that you
25 haven't pointed to any other publications showing

1 that HRP is a cell-binding agent for any other
2 purpose other than Straus. Correct?

3 A That's correct.

4 Q In the Straus paper it states that --
5 I've seen it in the heading and a few times
6 throughout the body of the paper -- that these
7 were, quote, "unusual" binding sites for
8 horseradish peroxidase, and I assume -- and from
9 your perspective, why are these being called
10 "unusual"?

11 A Yeah. So the question about why they
12 are "unusual." That is, comes to -- my
13 interpretation of that is that that's a matter of
14 opinion.

15 So they have gone through, they have
16 shown the binding, but they've also shown a number
17 of agents that are -- that can suppress that
18 binding, and I believe that given the time in
19 history, in the mid-1980s, it was very unusual to
20 be -- for that particular mix of agents to suppress
21 binding.

22 We now know differently. We now know
23 that that mix of agents points to a particular
24 subclass of proteins that's consistent with their
25 findings, but at this time, I think they were

1 struck by the discovery that they were making here.

2 So it's a little bit of
3 self-promotion.

4 Q What mix of agents, I guess, are you
5 referring to?

6 A Right. So they do studies using
7 nucleotides in sugars, which are broad terms of --
8 those are listed specifically in Table 1, they have
9 a great variety of agents that they tested in
10 different cell types.

11 They also tested some hormones and
12 other proteins, so they did a comprehensive
13 analysis there.

14 Q Then you said that you -- that we
15 know now differently that these mix of agents point
16 to a particular subclass of proteins. What do you
17 mean by that?

18 A Yes, so protein -- so binding that
19 can be dependent on nucleotides in sugars points to
20 an interaction between glycosylated proteins, which
21 is actually the predominant form of proteins on the
22 surface of cells.

23 Q And if you go to page 6 right under
24 Discussion, in the first sentence it describes the
25 type of fixation used in these experiments to be a,

1 quote, "special type of fixation."

2 What is your understanding as to why
3 is Straus saying the fixation methods it used were
4 a special type?

5 A They describe that the cells were
6 quickly dried before treating with cold methanol.
7 And I am inferring that at that time they had not
8 previously used quickly dried cells, so that was
9 the special condition, that was new here.

10 Q For conventional cell fixation, are
11 cells not typically quickly dried?

12 A It depends on the interaction being
13 tested. So this is a true feature of all types of
14 fixation, that you have to test a variety of
15 conditions to be completely thorough, in finding
16 and do direct comparison to find the optimal
17 condition to get the best binding.

18 So what they are indicating here is
19 that adding that quick drying step gave them the
20 strongest binding that they had seen.

21 MS. MATTES: Can we just go off the
22 record?

23 (Off the record.)

24 Q (BY MS. MATTES) So welcome back,
25 Dr. Baker. So would you -- if you go back to your

1 first Declaration, page 4, you state in paragraph 5
2 that you (quote as read):

3 ...have extensive research
4 experience related to
5 photoreceptor cells and their
6 molecular biology.

7 Do you see that?

8 A I do.

9 Q And then you said, (quote as read):
10 However, you understand that your
11 overall research is not the
12 subject of your relevant
13 expertise here.

14 Do you see that?

15 A Yes.

16 Q Okay. So you are not providing
17 opinions as an expert in molecular biology in this
18 case; is that right?

19 A No. I am providing information as an
20 expert in molecular biology; I am not providing
21 information on the molecular biology of photo
22 receptor cells in my specific research.

23 Q Understood. Got it. Would you agree
24 that you do not have a PhD in organic chemistry?

25 A True.

1 Q And would you agree that you do not
2 have a PhD in biochemistry?

3 A Technically true.

4 Q And you do not have a PhD in
5 medicinal chemistry and/or pharmacology; is that
6 right?

7 A That's correct.

8 Q Okay. Would you agree that organic
9 chemistry, medicinal chemistry, and pharmacology
10 each involve specialized knowledge that's distinct
11 from cell biology, neurobiology, and anatomy?

12 MR. HOUSTON: Objection, form.

13 A Yeah, not entirely. There's overlap
14 between those fields. Around other fields
15 involving molecular biology.

16 Q (BY MS. MATTES) Do you have any
17 specific experience designing or working with
18 linkers for protein drug conjugates?

19 A I have not designed protein drug
20 conjugates, and at the moment I cannot recall using
21 a protein drug conjugate. But 30 years of research
22 involves a lot of reagents, so I just don't recall
23 one right now.

24 Q So there -- it's possible that there
25 was an instance where you've --

1 A It's possible. I just can't recall.

2 Q Would you characterize that you have
3 one to two years of research or industry experience
4 using or developing protein drug conjugates?

5 A I have experience using related
6 molecules in a wide variety of ways. I do not have
7 specific experience in developing drug conjugates.

8 Q So you would agree that you do not
9 have experience working with and developing protein
10 drug conjugates. Correct?

11 A True.

12 Q And you don't have a specific
13 recollection of ever having tested, either in vitro
14 or in vivo, any protein drug conjugates in assays;
15 correct?

16 A Now that I'm thinking about it, I can
17 recall at least one instance where I conjugated a
18 fluorescent dye to a protein. That would fall
19 underneath that class.

20 Q To the best of your recollection,
21 what was the purpose of that study?

22 A The purpose was to make it possible
23 for me to visualize with fluorescence the protein
24 that was conjugated to the dye.

25 Q Have you ever published any

1 peer-reviewed papers specifically on linker design
2 or selective attachment of linkers to proteins in
3 drugs?

4 A No, I have not.

5 Q Have you ever been named as an
6 inventor on a patent involving linker chemistry or
7 protein drug conjugates?

8 A No, I have not.

9 Q Earlier -- so in paragraph 7 you
10 state that you (quote as read):

11 ...have extensive experience
12 studying cell properties and
13 functions, including the binding
14 of proteins to cell surfaces.

15 Do you see that?

16 A I do.

17 Q What specific experiences are you
18 referring to here?

19 A So that's part of my research on
20 photoreceptor cells. I have used a wide variety of
21 reagents to bind to photoreceptor cells in both
22 living animals and acutely isolated living cells in
23 tissues and as well as extracts from the retina
24 that would encapsulate the in vitro component where
25 I'm looking at specific binding to surface

1 membranes or individual proteins.

2 And that's just studying cell
3 properties. Function -- this is a very extensive
4 list. I would need a more specific question, if
5 you may.

6 Q That's fair. I just wanted to get a
7 sense of what you were referring to when you said
8 that you had extensive experience studying cell
9 properties and function. So that's sufficient for
10 right now. Thank you.

11 Did you have anything more to say?

12 A I was going to say I do think I
13 understand your question a bit better now, so
14 generally, when I'm looking at cell properties, I'm
15 looking at anatomy, I'm looking at health, I'm
16 looking at the distribution of proteins, and I'm
17 looking at responses to other cells or agents. I
18 think that may be closer to what your question
19 intended.

20 Q I appreciate that. Thank you. About
21 how many cell-binding -- I know you've done a lot
22 of work over the years and you mentioned you had 30
23 years of biomedical research, so I appreciate you
24 may not be able to give me a specific answer, but,
25 approximately, about how many cell-binding

1 experiments have you or your lab conducted?

2 A That is a very large number.

3 Q Would it be hundreds, thousands, ten,
4 you know, approximately?

5 A I believe the estimate would be in
6 the tens of thousands. Including myself and my
7 students within my lab.

8 Q And were all of those cell-binding
9 experiments in the context of photoreceptors?

10 A No. Occasionally we looked at other
11 tissues.

12 Q And what other tissues have you
13 investigated?

14 A The different parts of the brain such
15 as the cerebellum and cerebrum and hippocampus.
16 We've looked at heart tissue, testes, liver,
17 ovaries, some limited muscle work. And I believe
18 that encapsulates the majority.

19 Q In studying these different tissue
20 types, does your research on the various tissue
21 types that you were investigating involve
22 developing therapeutic drugs for treating diseases?

23 A Not developing drugs. I will test
24 how drugs affect the tissue.

25 Q So you've worked with drugs as part

1 of your research, but not in developing a drug for
2 the purpose of treating a disease?

3 A I do wonder if we are clear what I
4 mean by the difference between development of a
5 drug.

6 Q Yeah. So your research is not
7 focused on creating a new drug for treating a
8 disease?

9 A That's correct.

10 Q Rather, your research is focused on
11 using drugs or testing drugs for various reasons,
12 potentially, to investigate different properties or
13 effects?

14 A That's correct.

15 Q As part of your research, did you use
16 western blot assays?

17 A Yes.

18 Q And then -- and you have an
19 understanding that biomedical researchers use
20 western blot assays in general?

21 A Yes. They do.

22 Q And they're used, western blot assays
23 are used for a variety of different cell types;
24 correct?

25 A Yes.

1 Q And in those western blot studies,
2 HRP is often used as a detection enzyme or a
3 receptor in those tests; correct?

4 A It is. It is often used as a
5 detection agent, yes.

6 Q And for purposes of those tests, HRP
7 is not something -- is not an agent that actually
8 binds to any of the cells that are being studied in
9 western blot assays; correct?

10 MR. HOUSTON: Objection, form.

11 A Yeah, in a western blot you're
12 looking at binding to proteins that have been
13 removed from cells. So the cell is no longer
14 intact. So it can't actually be assayed.

15 MS. MATTES: Okay. Well, I have no
16 more questions for you, Dr. Baker. So thank you
17 for your time. I don't know if, Mike, you have any
18 questions?

19 MR. HOUSTON: We'll take a short
20 break and chat offline probably just via cell
21 phone, so we can mute on here, and then I don't
22 think it'll be -- we won't be more than ten minutes
23 I don't think.

24 MS. MATTES: Sure. No worries.

25 (Off the record.)

EXAMINATION

QUESTIONS BY MR. HOUSTON:

Q Dr. Baker, do you still have your Declaration from Exhibit 1075 in front of you?

A I do.

Q Could you turn to paragraph 9?

A Yes.

Q In paragraph 9 you have a statement about the additional documents that you reviewed in providing your testimony and opinions in this Declaration.

Do you see that?

A I do.

Q Okay. Do you recall being asked about that earlier?

A I do.

Q I wanted to direct your attention now to footnote 3 of your Declaration which is on page 13, and I believe there you make reference to having reviewed some additional documents. Could you explain footnote 3?

A Yes, thank you for bringing that up. I had forgotten about in the earlier questioning. So I only used the two documents listed on page 5 to study in detail and write my Declaration, but I

1 did very briefly skim through a few other articles
2 published by Straus just before the 1986 study, and
3 that was just to give myself a general
4 understanding of what their goals were and their
5 general line of inquiry.

6 And so from that, I learned that they
7 had been looking at HRP binding to cells in a
8 couple of different studies, so I learned that it
9 was very reproducible and, as I skimmed through the
10 experiments, I gained the impression that they were
11 very rigorous in their design.

12 So it gave me a favorable view of
13 them as scientists, but then again in writing the
14 Declaration, I came back to the other one. So I'm
15 glad to be able to clarify that. Hope that helps.

16 Q Thank you, Dr. Baker. I'm going to
17 switch topics on you and ask do you recall in your
18 earlier deposition testimony being asked whether or
19 not fixation -- the technique of fixation could
20 open up binding sites that would otherwise not be
21 available in living cells.

22 Do you recall that question?

23 A I do.

24 Q Do you have an opinion on whether
25 that is possibly the case for the results that

1 Straus reports?

2 A I do.

3 Q Could you explain what your opinions
4 are in that regard?

5 A Right. And again, I appreciate, as I
6 recall in the moment, I was uncertain of my answer
7 as I was thinking about it. So I break this down
8 into how fixation could artificially block a
9 binding site, which we discussed. And we discussed
10 how I don't see evidence of that happening in the
11 studies in Straus.

12 And where we're expanding now is the
13 question of could fixation artificially create a
14 new binding site. That's where I said something
15 along the lines of possible but unlikely. I do not
16 see evidence of that happening in this Straus
17 paper.

18 Q Could you explain why that is?

19 A Yes. If -- if the fixation was
20 causing the binding, we would see it consistently
21 throughout all of their experiments. But they
22 actually test several different cell lines, and
23 they find most of those cell lines will bind HRP
24 but some of them don't.

25 Also, in all of the experiments where

1 they're looking at nucleotides in sugars and
2 hormones to suppress the binding, they find that
3 there's specificity there, which I get from the
4 fact they're using different concentrations of
5 those reagents and getting slightly different
6 results.

7 So all of that speaks to me as this
8 is not a uniform artifact, which would have to be
9 true if it was just from the fixation.

10 Q Okay. Thank you. Again, I will
11 change topics on you. Do you recall in your
12 earlier deposition being asked whether or not you
13 were aware that the Straus article, the one that is
14 Exhibit 1006, has only been cited 14 times in the
15 literature.

16 Do you recall being asked that
17 question?

18 A I do.

19 Q And I believe you answered that you
20 were not aware of that; is that correct?

21 A That's true.

22 Q Does knowledge of that fact impact
23 your opinions that you provided in your
24 Declaration?

25 A No.

1 Q Why not?

2 A Because the number of times a study
3 is cited in the scientific literature has more to
4 do with popularity than it does with scientific
5 accuracy.

6 So, for instance, it is well known
7 that there are some studies that have been cited
8 and have caused follow-up studies on the order of
9 hundreds of new research articles, and yet they
10 have had critical flaws and have been ultimately
11 proven false. There are other examples in the
12 literature where a scientific study may have been
13 cited only once or twice and just simply not
14 appreciated until some later point in time.

15 So -- so for a study being cited, was
16 it 14 times? 14 or 16? Whatever the number was,
17 that range, that does not change my -- does not
18 influence my assessment of the accuracy of the
19 science.

20 Q Are you aware of any follow-on work,
21 scientific work, whether it's papers or otherwise,
22 that would undermine the results reported in
23 Straus?

24 A No.

25 Q I'll change topics again, please. Do

1 you recall being asked about your experience and
2 your research involving drugs, and in particular,
3 drug conjugates?

4 A Yes.

5 Q When you were responding to that line
6 of questions, did you have a particular thought in
7 your mind as to what the term "drugs" encompassed
8 there?

9 A Yes, I did struggle with that. My
10 initial assumption is that a drug is a small
11 molecule, but as I've sat with that question in the
12 back of my mind, like I said, these days
13 FDA-approved drugs actually include antibodies,
14 which, as we've discussed thoroughly, I have lots
15 of experience working with antibodies, and in the
16 majority of cases my work with those antibodies is
17 as a conjugate to a reporter or another protein.

18 So broad, if you use that more modern
19 definition of drug, then my statement does need the
20 revision.

21 Q And the revision being what exactly?
22 I'm sorry.

23 A Being that I have -- I do have
24 extensive experience working with antibody drug
25 conjugates, or drugs that will bind to cells.

1 MR. HOUSTON: No further questions
2 from me. Thank you, Dr. Baker.

3 MS. MATTES: Can I also have a little
4 break see if there are any more questions on our
5 end?

6 MR. HOUSTON: Sure.

7 (Off the record.)

8 RE-EXAMINATION

9 QUESTIONS BY MS. MATTES:

10 Q So Dr. Baker, before the break, you
11 stated that you now believe that you have extensive
12 experience working with antibody drug conjugates.

13 Do you recall that?

14 A Yes.

15 Q Okay. And you came to this
16 conclusion because your understanding now, a drug
17 can be something beyond -- you're saying something
18 beyond a small molecule; is that right?

19 A That's correct. I was using a very
20 restrictive definition.

21 Q So in that context, the, quote,
22 "drugs" that you would be working with would be the
23 antibodies themselves; is that right?

24 A Yes. I've worked with antibodies
25 linked to a variety of molecules, either small

1 molecules, or proteins. I've also worked with
2 making conjugates of different types between
3 proteins using what are called chemical
4 crosslinkers and what those conjugates could also
5 fall under this broader class, and I just did not
6 realize that at first.

7 I'm trained to be very, very
8 specific, so. That's how that came about.

9 Q So if -- if the -- if the
10 understanding of a drug is limited to small
11 molecules --

12 A That's right.

13 Q -- you would -- would you agree that
14 you do not have extensive experience working with
15 antibody drug conjugates in that scenario?

16 A I agree that my experience is not
17 extensive. I have experience working with them and
18 I work with colleagues who do have extensive
19 experience. But myself, it would be just part of
20 my general knowledge of molecular biology.

21 Q And with understanding that you have
22 "drug" is to be defined as something more than
23 small molecules, including antibodies, I guess in
24 those -- in that scenario you, I guess, just stated
25 that you have experience where -- with conjugating

1 antibodies to small molecules or proteins.

2 Were those experiments done in a way
3 where the small molecules or proteins were the
4 agent that was being used -- were the agent that
5 was binding to a target molecule?

6 A Yes.

7 Q Can you provide an example?

8 A One example would be when I conjugate
9 a fluorescent dye to an antibody, and that antibody
10 was specific against a protein known as R9AP, which
11 I would certainly be happy to explain but you
12 probably don't want me to.

13 Q So in that example, it is the
14 antibody that is binding to the protein?

15 A The antibody portion, yes. But
16 because once it's conjugated, that's a covalent
17 bond and that's an entire reagent.

18 Q Right. But the dye itself, however,
19 is not the part of that agent, to use your words,
20 the part of that agent that is binding to the
21 protein is not the dye part of that agent.

22 A That is correct.

23 Q Right. So in your experience --

24 A Well, apologies for interrupting you.
25 I do need to clarify. I -- you -- I do use dyes

1 for binding. But in the example I gave, it is true
2 that the dye was not the direct binding component
3 of the molecule.

4 Q So in the example you gave then, the
5 dye is not the direct binding component to the
6 protein that you referenced before. Correct?

7 A Correct.

8 Q Okay.

9 MS. MATTES: I have no further
10 questions. Thank you. Thank you, Dr. Baker, for
11 your time.

12 THE WITNESS: Thank you.

13 MR. HOUSTON: So, Dr. Baker, we might
14 stay on and discuss a few things, but you're
15 welcome to sign off now. Thank you.

16 THE WITNESS: Well, okay.

17 THE REPORTER: Doctor, what would you
18 like to do about signature? Mike, do you want to
19 explain?

20 MR. HOUSTON: Well, this is kinda
21 tricky because of the timing and everything, so we
22 can coordinate that offline, I suppose. I'm not
23 quite sure how we're going to do it with the
24 limited timing we have.

25 I mean, in general, it would be a

1 review and sign type process, but as far as working
2 out the timing, we'll have to figure that out.

3 THE REPORTER: Okay, that's fine.
4 And then will an E-tran be okay for you, Mike?

5 MR. HOUSTON: I don't need one right
6 now. Thank you.

7 THE REPORTER: No transcript at all?

8 MR. HOUSTON: Yeah, exactly.

9 MS. MATTES: We might need some sort
10 of -- so if it's a regular, how soon can we get the
11 final? We might need expedite.

12 THE REPORTER: I was asked to get
13 this to you by Monday.

14 MS. MATTES: Okay. Yep.

15 MR. HOUSTON: Tara, do you have any
16 technical terms or any clarifications you need to
17 seek from Dr. Baker?

18 THE REPORTER: I don't think so.

19 MR. HOUSTON: Okay. So Dr. Baker,
20 you're free to go then.

21 (Wherein, the taking of the instant
22 deposition ceased at 10:57 AM.)

23 (Deposition to be read and signed by
24 the witness.)
25

CERTIFICATE OF REPORTER

I, TARA SCHWAKE, a Registered Professional Reporter and Notary Public within and for the State of Missouri, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.



Notary Public in and for
The State of Missouri

Missouri CCR #1001

Illinois CSR #084004074

Arkansas CCR #787

1 SHEILA BAKER

2 sheila-baker@uiowa.edu

3 April 14, 2025

4 RE: SYNAFFIX B.V. vs. HANGZOU DAC BIOTECH CO., LTD.

5 4/9/2025, Sheila Baker (#7289874)

6 The above-referenced transcript is available for
7 review.

8 Within the applicable timeframe, the witness should
9 read the testimony to verify its accuracy. If there are
10 any changes, the witness should note those with the
11 reason, on the attached Errata Sheet.

12 The witness should sign the Acknowledgment of
13 Deponent and Errata and return to the deposing attorney.
14 Copies should be sent to all counsel, and to Veritext at
15 cs-ny@veritext.com.

16 Return completed errata within 30 days from
17 receipt of testimony.

18 If the witness fails to do so within the time
19 allotted, the transcript may be used as if signed.

20
21
22 Yours,

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SYNAFFIX B.V. vs. HANGZOU DAC BIOTECH CO., LTD.

4/9/2025 - Sheila Baker (#7289874)

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4/14/2025

Sheila Baker

Date

SYNAFFIX B.V. vs. HANGZOU DAC BIOTECH CO., LTD.

4/9/2025 - Sheila Baker (#7289874)

ACKNOWLEDGEMENT OF DEPONENT

I, Sheila Baker, do hereby declare that I have read the foregoing transcript, I have made any corrections, additions, or changes I deemed necessary as noted above to be appended hereto, and that the same is a true, correct and complete transcript of the testimony given by me.



4/14/2025

Sheila Baker

Date

*If notary is required

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____ DAY OF _____, 20__.

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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.

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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.

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