

EXHIBIT 23

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF MASSACHUSETTS

Certified Copy

AMGEN INC.,)
)
 Plaintiff,)
)
 vs.) No. 05-12237 WGY
)
 F. HOFFMANN-LA ROCHE LTD., a)
)
 Swiss Company, ROCHE DIAGNOSTICS)
)
 GmbH, a German Company, and)
)
 HOFFMANN-LA ROCHE INC., a New)
)
 Jersey Corporation,)
)
 Defendants.)

Videotaped Deposition of

EUGENE GOLDWASSER, Ph.D., taken before GREG S.
 WEILAND, CSR, RMR, CRR, Notary Public, pursuant to
 the Federal Rules of Civil Procedure for the United
 States District Court pertaining to the taking of
 depositions, at Suite 4100, Three First National
 Plaza, in the City of Chicago, Cook County,
 Illinois, commencing at 9:13 o'clock a.m., on the
 14th day of February, 2007.

*** PAGE 119 THROUGH AND INCLUDING PAGE 121 ***

*** WERE DESIGNATED CONFIDENTIAL ***

1 recall that she ever said that she had succeeded in
2 it, but that's about the best I can say.

3 Q. Who worked with you on developing this RIA
4 for epo?

5 A. Judith B. Sherwood.

6 Q. And who is she or he?

7 A. She is a post doc in my lab.

8 Q. And when was this work done?

9 A. I can tell you, in looking here, I can
10 tell you when it was published.

11 Q. Feel free. You have the Perspective there
12 if you need to refresh your recollection.

13 A. It was published in 19 -- no, I'm sorry,
14 published 1979, so the work was done for about a
15 year before that.

16 Q. Now, I just want to understand a little
17 bit more about this RIA.

18 A. Uh-huh.

19 Q. When you used the RIA for epo, what did it
20 measure?

21 A. It measured the amount of material that
22 was recognized by an antibody raised against crude
23 epo, but it is a specific assay.

24 Q. Did it measure how active the epo was?

25 A. Active in what sense?

1 Q. Active biologically.

2 A. No.

3 Q. Did it measure how active it was at all?

4 A. Active immunologically, yes.

5 Q. And so you mean it measured the fact that
6 it could bind to the antibody?

7 A. Yes.

8 Q. Okay. So when the RIA for epo was used,
9 how could you tell whether or not you were binding
10 to a fragment of epo rather than the entire epo?

11 A. You could do that by putting a sample on
12 something that would separate molecules on the basis
13 of size.

14 Q. But the RIA itself couldn't tell you
15 whether it was a fragment or whether it was the
16 entire epo protein?

17 A. Well, if you put in something of small
18 molecular size, the RIA would tell you there was an
19 immunologically reactive material that was not
20 called epo.

21 Q. How would it do that?

22 A. Sorry?

23 Q. How, how would it tell you that?

24 A. Well, if you already did the sorting of
25 molecular size and put in something you knew was a

1 smaller molecular weight, the inference is very
2 strong.

3 Q. So that means you had to sort before you
4 did the RIA?

5 A. Yes.

6 Q. I'm sorry. So in doing your RIA
7 experiments that you developed, did you sort for the
8 size before you did the RIA?

9 A. Not routinely, no.

10 Q. Okay. So let's take that example of what
11 you did in the late '70s, early '80s on the RIA for
12 epo.

13 When you were doing those experiments, how
14 could you distinguish between the antibody binding
15 to a complete epo molecule versus a fragment or a
16 smaller than complete epo molecule?

17 A. Well, if we were -- if we had a question
18 about it, we would have to do the sorting. We
19 couldn't tell by just the RIA itself.

20 Q. Okay. So do you know what international
21 units are for epo?

22 A. Yes.

23 Q. What does that mean?

24 A. There is a laboratory at that time when it
25 was established at Mill Hill outside of London which

1 contained the World Health Organization department
2 or something of standardization of hormones. At
3 present, the definition of a unit of biological
4 activity depends on comparison with a standardized
5 material that came from the WHO lab.

6 The definition of a unit, however, is an
7 arbitrary one which we made when we needed to know
8 how we were working quantitatively.

9 Q. So you said you made a definition of unit
10 that was arbitrary.

11 When did you do that?

12 A. When?

13 Q. Yes.

14 A. Very early on when we first started to try
15 to do quantitative assays.

16 Q. And what was a unit at that point?

17 A. We defined it as the effective -- I'm
18 trying to -- the activity equivalent to the
19 biological activity in promoting red blood cell
20 formation of a specified amount of cobalt chloride
21 injected into the assay animal.

22 Q. That was a big definition. Let me just
23 see if I can break that down.

24 You said the activity equivalent to the
25 biological activity in promoting red blood cell

1 formation of a specified amount of cobalt chloride
2 injected into the assay animal, so let me break that
3 down.

4 What does cobalt chloride do when injected
5 into the animal?

6 A. It stimulates the formation of epo.

7 Q. Okay. So how did you define -- strike
8 that.

9 So when you used the term unit for epo,
10 was that a biological activity unit?

11 A. It was a unit of activity as compared with
12 the cobalt salt of biological activity.

13 Q. And what did you mean by biological
14 activity?

15 A. The formation of newly labeled red blood
16 cells in the assay animal.

17 Q. And you said that that measurement of unit
18 was arbitrary?

19 A. Yes.

20 Q. Okay. Did the measurement of unit become
21 fixed at any time?

22 A. Yes.

23 Q. And when was that?

24 A. I can't tell you the date, when we first
25 gave a preparation of fairly crude but active sheep

1 plasma epo to the WHO lab to standardize and
2 distribute.

3 Q. Do you know when the WHO created a single
4 standard for unit, if ever?

5 A. There never was a single standard. It
6 varied with time, but it was all related to the
7 first standard.

8 Q. So in 1983, was there a fixed standard for
9 unit?

10 A. I don't know what you mean by fixed. All
11 assays are done on a comparative basis. You compare
12 the material you're looking at to a known amount of
13 biological activity, and that's expressed in units,
14 arbitrary as they are.

15 Q. Okay. But you have to compare it to a
16 standard of some type?

17 A. Yes.

18 Q. So was there one standard?

19 A. As I said, it varied with time. The first
20 standard would become almost not available. It went
21 out. And so a second standard would be made and
22 compared with the first standard and then the third
23 standard compared with the first and second
24 standards.

25 But in essence, they were all putatively

1 the same amount of biological activity.

2 Q. And was the standard only defined by the
3 WHO, or were there different standards with
4 different organizations?

5 A. No, it was all defined by us.

6 Q. Us being?

7 A. My lab.

8 Q. University of Chicago lab?

9 A. Yes.

10 Q. Okay.

11 A. Based on cobalt chloride.

12 Q. Did you publish how someone could
13 determine what a unit was?

14 A. Yes.

15 Q. When was that? Feel free to look at your
16 Perspective if that helps you.

17 A. This is not a complete list of my papers.

18 Q. I understand.

19 A. We published quantitative assays back in
20 the '50s, late '50s I think, perhaps even earlier,
21 at first not having a standard and then realizing we
22 needed to standardize it, and when we discovered the
23 effect of cobalt, we just adopted that as a
24 standard.

25 Q. But to do the RIA test that you're talking