IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

AMGEN, INC., Plaintiff, v. F. HOFFMANN-LA ROCHE LTD, a Swiss Company, ROCHE DIAGNOSTICS GmbH, a German Company and HOFFMANN-LA ROCHE INC., a New Jersey Corporation, Defendants.	Civil Action No. 05-12237 WGY U.S. District Judge Young

THIRD DECLARATION OF MICHAEL SOFOCLEOUS IN SUPPORT OF DEFENDANTS' OPPOSITION TO AMGEN INC.'S MOTION FOR SUMMARY JUDGMENT OF NO INEQUITABLE CONDUCT

I, MICHAEL SOFOCLEOUS, declare under penalty of perjury that:

1. I have been retained as an expert for Defendants in the above-referenced case. I previously submitted a declaration in this case on June 7, 2007 in support of Defendants' Motion for Summary Judgment that the Claims of Patents-in-Suit are Invalid for Double Patenting over Amgen's '016 Patent (Lai). I also submitted a declaration in this case on June 28, 2007 in support of Defendants' Opposition to Amgen's Motion for Summary Judgment of No Obviousness-Type Double Patenting. I also submitted an Expert Report on April 6, 2007, as well as a Supplemental Expert Report on May 1, 2007.

2. I am an expert in the field of patent practice and procedure. In particular, I have thirty-eight years of experience with the practices and procedures of the United States Patent and Trademark Office ("PTO" or "Patent Office") and related litigation. My experience includes examining, counseling and interferences.

3. I began working as a patent examiner at the PTO in 1966. My principal duties included the examination of patent applications in Class 117 (now known as Class 427) (Coating Processes), primarily in the area of electrophotography including processes and related apparatus.

4. In 1974, I was promoted to Primary Examiner, a position which I held until 1975.

5. In 1975, I was promoted to Patent Interference Examiner, a position at the Board of Patent Interferences and in 1976 I became an acting member of the Board of Patent Interferences. As a Patent Interference Examiner (Interlocutory), I was responsible for managing over 1000 interferences from date of declaration until the final hearing, and authored countless interlocutory board decisions and approximately 20 final decisions on priority which constituted final agency actions.

6. In 1985, I was promoted to Administrative Patent Judge (Examiner-in-Chief) of the Board of Patent Appeals and Interferences, a position which I held until 1999. On the Interference side of the Board, I managed an annual docket of approximately 50 to 60 interferences from date of declaration until the final hearing, authored countless decisions on preliminary motions and interlocutory matters, participated in approximately 300 three-member final hearing panels and authored approximately 100 final decisions on priority and patentability which constituted final agency actions. On the Appeals side of the Board, I reviewed adverse decisions of examiners, participated in approximately 360 panels reviewing adverse decisions of examiners and authored approximately 120 decisions on appeals from such adverse decisions, which constituted final agency actions.

7. In 1999, I entered private practice as an attorney with the law firm of Greenblum & Bernstein, PLC until 2002. In 2002, I became a partner with the law firm of Roberts,

Mlotkowski & Hobbes, PC. In 2004, I started my own practice, the Law Office of Michael Sofocleous, where I practice today. My curriculum vitae is attached hereto as Exhibit A.

8. I make this declaration in support of Defendants' Opposition to Amgen Inc.'s Motion for Summary Judgment of No Inequitable Conduct. The patents-in-suit are U.S. Patent Nos. 5,441,868 ("the '868 patent"), 5,618,698 ("the '698 patent"), 5,756,349 ("the '349 patent"), 5,955,422 ("the '422 patent") and 5,547,933 ("the '933 patent"). The claims-in-suit are claims 1 and 2 of the '868 patent, claims 4-9 of the '698 patent, claim 7 of the '349 patent, claim 1 of the '422 patent, claims 3, 7-9, 11, 12 and 14 of the '933 patent.

9. My opinions expressed herein were put forth in my April 6, 2007 Expert Report and May 1, 2007 Supplemental Expert Report, and explained during my deposition taken by Amgen in this case.

I. Interference Practice and Procedure

10. An interference under 35 U.S.C. § 135 is conducted before the Board of Patent Appeals and Interferences, between an application and either another application or a patent. The Interference Branch is part of the Board of Patent Appeals of the PTO and separate from the Examining Branch. An interference is declared to assist the Director of the Patent Office in determining priority -- which party first invented the commonly claimed invention within the meaning of 35 U.S.C. § 102. An interference rarely determines the patentability of all the claims in an application with respect to all requirements of patentability. For example, a party to an interference rarely introduces prior art for § 103 arguments or § 112 arguments that could possibly invalidate its own patent should that party be granted priority.

11. When an interference concludes, the winning party does not acquire additional rights as a result. Instead, the application "stands as it was prior to the interference." (R. Ex.

228[1] (MPEP § 2363.02 (5th ed. Rev. 13, Nov. 1989)); R. Ex. 229 (MPEP § 2363.02 (8th ed., Aug. 2001))). It is also not unusual for an applicant who wins an interference to add new claims after the interference is terminated, and I am aware of no rule that limits new claims to subject matter resolved by the interference.

12. Once an interference is declared, the examiner of the underlying application will not see the application until the interference is terminated. (R. Ex. 230 (MPEP § 2301 (8th ed. Rev. 5, Aug. 2006))). This often means that an examiner will not be involved with an application for years and will become less familiar with the file within that time. Furthermore, it is not uncommon for the application to be reassigned to a new examiner after an interference is terminated because the prior examiner is no longer with the Patent Office.

13. When a pending application has been subject to an interference and returns to the examiner for further consideration, the relevant interference file does not become part of the file wrapper. Instead, an interference file, such as the *Fritsch v. Lin* interference files -- which are many thousands of pages and are broken into multiple volumes -- is stored in a separate area within the PTO, not in the Examining Branch. In the normal course, the examiner who continues examining an application after the termination of an interference is given the first and last volume of the interference file, which contains the final opinion but not the exhibits and testimony. The first and last volumes of the interference file and the relevant applications and patents are forwarded to the examiner who had originally declared the interference or, if he had left the PTO, then the file will be forwarded to the Supervisory Primary Examiner of that Art Unit who would then refer the interference file to the examiner who would be examining the

[1] "R. Ex. _" refers to the Declaration of Krista M. Rycroft submitted in conjunction with Roche's Opposition to Amgen's Motion for Summary Judgment of No Inequitable Conduct.

application(s). At one point, the examiner was required to indicate that he had noted the Board decision, and to return the first and last volumes of the interference file to the Service Branch of the Board. (R. Ex. 228 (MPEP § 2363 (5th ed. Rev. 13, Nov. 1989))).

14. It is very rare for an examiner to review the other portions of the interference file -- let alone the whole interference file. In some circumstances, the Board of Patent Appeals and Interferences may refer the examiner to certain motions or issues that were raised in the interference, *see, e.g., Grove v. Johnson*, 22 U.S.P.Q.2d 1044 (Bd. Pat. App. & Interf. 1991); *Sullivan v. Bingel*, 2003 Pat. App. LEXIS 5 (Bd. Pat. App. & Interf. Mar. 13, 2003), or the examiner may become aware of some issues due to the filing of a petition by a third party or by the losing party. A reasonable examiner would not sift through subsidiary papers such as declarations, exhibits or transcripts to find information that possibly may be relevant to the continued examination of the pending claims or new claims added after the interference has concluded.

15. Indeed, a reasonable examiner does not have the time to look for the proverbial "needle in the haystack" and it is extremely unlikely an examiner would be able to meet his disposal requirement if he did so. In particular, the PTO is run on a quota system in which examiners are required to review and dispose of a number of applications each year, depending on the complexity of the technology being examined and the examiner's seniority level. It is the role of the examiner to allow claims. (*See* R. Ex. 231 (MPEP § 706 (5th ed. Rev. 6, Oct. 1987)); R. Ex. 232 (MPEP § 706 (8th ed. Rev. 5, Aug. 2006))). In 1988, PTO examiners had less than 20 hours in total to devote to examination of a single application. (R. Ex. 182 (U.S. GAO, Biotechnology Backlog of Patent Applications, GAO/RCED-89-120BR, "Average Time Spent Per Patent Application", p. 20)). That statistic remained relatively consistent and constant during

the time the patents-in-suit were pending. This means that a patent examiner has very limited time to read and consider each patent application. Within that allotted time, an examiner is expected to read the application, analyze the claims, search for and review prior art, review prior art submitted by the applicant, compare prior art to the application claims, write office actions, read and respond to the applicant's responses to office actions and amendments, conduct interviews, and issue the final claims if patentable. Therefore, an examiner does not have time to conduct extraneous reviews of interference files.

16. Given this backdrop, it is not unusual for an examiner's rejections and comments in an office action to be inaccurate or to fail to consider all the relevant factors and evidence, particularly if the relevant factors and evidence are only disclosed to the Interference Board. It is the responsibility of the applicant (or the attorney or agent prosecuting the application) to accurately explain the invention to the examiner, point out any misunderstandings or errors by the examiner, and place before the relevant examiner all material and relevant information known to the applicant. This is particularly true with matters raised in an interference, such as in testimony or exhibits, and not commented on by the Board.

II. PTO Review of References

17. Based on over 38 years experience in Patent Office practice and procedure, it is my opinion that the disclosure of a prior art reference via an Information Disclosure Statement does not mean that the reference is given a thorough consideration for all of its relevant teachings. In this case, Amgen submitted numerous IDS's with approximately 400 references in each. (*e.g.*, Ex. 28[2]; Ex. 29). A reasonable examiner would not have had the time to review each

[2] "Ex. __" refers to the Declaration of Craig H. Casebeer filed in conjunction with Amgen's Motion for Summary Judgment of No Inequitable Conduct.

of these references in great detail without an applicant highlighting specific portions of references or providing an explanation of relevance. Indeed, the Patent Office has stated that "[w]here the IDS citations are submitted but not described, the examiner is only responsible for cursorily reviewing the references. The initials of the examiner on the PTO-1449 indicate only that degree of review unless the reference is either applied against the claims, or discussed by the examiner as pertinent art of interest, in a subsequent office action." (R. Ex. 236 (1223 OG 124)).

III. Individuals At Amgen Subject To A Duty Of Candor

18. As set forth throughout my expert reports, it is my opinion that the following people were subject to a duty of candor and disclosure during prosecution of the patents-in-suit:

19. **Michael Borun:** As the lead prosecuting attorney and attorney of record of the patents-in-suit, Mr. Borun filed numerous declarations, participated in interviews, filed amendments and filed IDS's. (*See, e.g.,* R. Ex. 8 (AM-ITC 00953134-41); R. Ex. 9 (AM-ITC 00953195-203); R. Ex. 10 (AM-ITC 00953204-25); R. Ex. 12 (AM-ITC 00953636-48); R. Ex. 11 (AM-ITC 00953602-03); R. Ex. 13 (AM-ITC 00953710-11); R. Ex. 14 (AM-ITC 00898298-301); R. Ex. 15 (AM-ITC 00898307-33); R. Ex. 16 (AM-ITC 00898334-37); R. Ex. 17 (AM-ITC 00898621-24); R. Ex. 18 (AM-ITC 00898654-63); R. Ex. 19 (AM-ITC 00898625-51); R. Ex. 20 (AM-ITC 00898691-92); R. Ex. 22 (AM-ITC 00898652-53); R. Ex. 21 (AM-ITC 00899119-21); R. Ex. 23 (AM-ITC 00941081-88); R. Ex. 24 (AM-ITC 00941507-21); R. Ex. 25 (AM-ITC 00941224-27); R. Ex. 26 (AM-ITC 00941406-07); R. Ex. 27 (AM-ITC 00941408-409); R. Ex. 28 (AM-ITC 00941253-54); R. Ex. 29 (AM-ITC 00868077-88); R. Ex. 30 (AM-ITC 00868071-73); R. Ex. 31 (AM-ITC 00868126-55); Ex. 26; Ex. 29). Mr. Borun was also listed as counsel on Amgen's interference briefs, evidencing his involvement. (*See* Ex. 21; R. Ex. 32 (AM-ITC 00832862-943)). I further understand that Mr. Borun was involved in Amgen's foreign

proceedings to protect foreign counterparts to its U.S. Patents. (R. Ex. 33 (AM-ITC 00312754)). Mr. Borun was clearly subject to a duty of candor and disclosure. 37 C.F.R. § 1.56(a), (c)(2).

20. **Steven Odre:** Mr. Odre was Amgen's in-house patent counsel during prosecution of the patents-in-suit, and clearly was associated prosecution of the patents-in-suit within the meaning of Rule 56. 37 C.F.R. § 1.56(a), (c)(2); *see also* R. Ex. 34 (4/2/07 Odre Depo. Tr.) at 12-14; R. Ex. 35 (2/14/00 Odre Depo Tr.) at 15). Mr. Odre filed amendments and participated in interviews throughout prosecution of the patents-in-suit. R. Ex. 36 (AM-ITC 00953131-33)). R. Ex. 38 (AM-ITC 00953272-78)), R. Ex. 37 (AM-ITC 00953232-34); R. Ex. 11 (AM-ITC 00953602-03); R. Ex. 39 (AM-ITC 00953250-56); R. Ex. 40 (AM-ITC 00953313-17); R. Ex. 41 (AM-ITC 00941101); R. Ex. 42 (AM-ITC 00941145-46); R. Ex. 43 (AM-ITC 00941184-85); R. Ex. 44 (AM-ITC 00941204-05); R. Ex. 26 (AM-ITC 00941406-07); R. Ex. 45 (AM-ITC 00941241-42); Ex. 25; Ex. 26). Mr. Odre was also listed as counsel on Amgen's interference briefs, evidencing his involvement. (*See* Ex. 21; R. Ex. 32 (AM-ITC 00832862-943)). I further understand that Mr. Odre was involved in Amgen's foreign proceedings to protect foreign counterparts to its U.S. Patents. (R. Ex. 33 (AM-ITC 00312754)). Mr. Odre was clearly subject to a duty of candor and disclosure. 37 C.F.R § 1.56(a), (c)(2).

21. **Stuart Watt:** Like Mr. Odre, Mr. Watt was Amgen's in-house patent counsel during prosecution of some of the patents-in-suit and his name appears on numerous documents relating to the prosecution of the patents, evidencing his association with the prosecution of the patents-in-suit. (R. Ex. 46 (3/29/07 Watt Depo Tr.) at 30; R. Ex. 47 (9/7/00 Watt Trial Tr.) at 3012; R. Ex. 11 (AM-ITC 00953602-03); R. Ex. 48 (AM-ITC 00898342-53); R. Ex. 22 (AM-ITC 00898652-53); R. Ex. 49 (AM-ITC 00898727-28); R. Ex. 47 (9/7/00 Watt Trial Tr.) at 2964-66; R. Ex. 50 (AM-ITC 00899176-77); R. Ex. 51 (AM-ITC 00899440-41)); R. Ex. 52

(AM-ITC 00899686-88); R. Ex. 53 (AM-ITC 00941538-39); R. Ex. 30 (AM-ITC 00868071-73); R. Ex. 29 (AM-ITC 00868077-88); Ex. 25; Ex. 26) I further understand that Mr. Watt was involved in Amgen's foreign proceedings to protect foreign counterparts to its U.S. Patents. (R. Ex. 33 (AM-ITC 00312754)). As Amgen's in-house counsel, Mr. Watt was clearly associated with the prosecution of the patents-in-suit within the meaning of Rule 56. 37 C.F.R. § 1.56(a), (c)(2).

22. **Dr. Fu-Kuen Lin:** As the sole named inventor on the patents-in-suit, Dr. Lin was clearly subject to a duty of candor and disclosure within the meaning of Rule 56. 37 C.F.R. §1.56(a), (c)(1).

23. **Dr. Joan Egrie:** Dr. Egrie was an employee of Amgen during prosecution of the patents-in-suit and was substantively involved in the prosecution of at least the expired '008 patent and the '933 and '349 patents-in-suit. (R. Ex. 54 (11/9/99 Egrie Depo. Tr.) at 176-79). The RIA protocol and results set forth in the Lin specification was designed by Dr. Egrie. (R. Ex. 54 (11/9/99 Egrie Depo. Tr.) at 176-79; R. Ex. 57 (3/27/07 Egrie Depo Tr.) at 106-07; R. Ex. 58 (3/28/07 Lin Depo Tr.) at 162-63). Dr. Egrie also performed numerous experiments directed at comparing the structural properties of rEPO and uEPO, thus directed at patentability and frequently communicated with Mr. Borun during prosecution of the patents-in-suit. (*See, e.g.,* R. Ex. 55 (11/10/99 Egrie Depo. Tr.) at 335-36). Indeed, some of the data generated by her experimentation appears in the Lin specification. (R. Ex. 56 (AM-ITC 00295809-16) at ¶7). Amgen also relied on Dr. Egrie's studies during the '334 Interference. (R. Ex. 56 (AM-ITC 00295809-16); Ex. 8). I further understand that Dr. Egrie was involved in Amgen's foreign proceedings to protect foreign counterparts to its U.S. Patents. (R. Ex. 33 (AM-ITC 00312754)).

As such, Dr. Egrie was clearly substantively involved in the prosecution of the patents-in-suit within the meaning of Rule 56. 37 C.F.R § 1.56(a), (c)(3).

24. **Dr. Thomas Strickland:** Dr. Strickland was an employee of Amgen at the time of prosecution of the patents-in-suit, and was substantively involved in the prosecution. (R. Ex. 59 (3/9/07 Strickland Depo. Tr.) at 373). During prosecution of the patents-in-suit, Dr. Strickland submitted numerous declarations in support of patentability in both the United States and foreign proceedings, including the 1988, 1992 and 1994 Strickland Declarations. (Ex. 5, Ex. 6, R. Ex. 60 (AM-ITC 00941119-44)). Dr. Strickland is also a named inventor on the Lai '016 patent (R. Ex. 61 (Lai '016 patent)), which incorporates the '298 specification by reference, evidencing his association with the Amgen EPO development team and the patents-in-suit. I further understand that Dr. Strickland was involved in Amgen's foreign proceedings to protect foreign counterparts to its U.S. Patents. (R. Ex. 33 (AM-ITC 00312754)). In short, the evidence is clear that Dr. Strickland was substantively involved in the prosecution of the patents-in-suit within the meaning of Rule 56. 37 C.F.R. §1.56(a), (c)(3).

IV. Amgen's Misrepresentations and Omissions To Overcome A Double Patenting Rejection Over The '008 Patent

25. As I stated in my expert report, during prosecution of the '179 application, Amgen and Mr. Borun misrepresented and omitted material facts with an intent to deceive the Patent Office in an effort to overcome an obviousness-type double patenting rejection over the '008 patent.

26. It is my opinion that Mr. Borun's assertion regarding the Federal Circuit's holding in *Amgen v. ITC* that "[t]here has thus been a judicial determination that rights in the subject matter of the '008 patent claims do not extend to the subject matter of the process claims

herein…" (Ex. 20 (AM-ITC 00953697)) was a material misrepresentation, as the court in *Amgen v. ITC* never made a determination that the '008 claims and the pending '179 claims were patentably distinct, nor did the court's holding support an inference that the claims were patentably distinct. This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

27. I further opine that Mr. Borun's assertion regarding the *Fritsch v. Lin* interferences was a material misrepresentation. (Ex. 18 at AM-ITC 00953697). The declaration of separate interferences was merely an administrative matter at the time that the *Fritsch v. Lin* interferences were declared, as an examiner could not have declared an interference with an issued patent and an application owned by the same party without a terminal disclaimer. (*See* R. Ex. 65 (Caesar & Rivas excerpt)). Furthermore, Mr. Borun had a duty to disclose the fact that Amgen took contrary positions regarding patentable distinction during the '097 Interference, including Amgen's statement that the '008 claims and the '179 claims were merely "different manifestations of the same invention." (Ex. 21 (AM-ITC 00337677-68) (emphasis added)). This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

28. I understand that Amgen and Mr. Borun assert that Amgen's contrary statements made during the '097 Interference were merely recitations of Fritsch's arguments, and not Lin's position. I note, first of all, that the quoted language appears in Lin's brief under "Summary of Lin's Position," (Ex. 21 (AM-ITC 00337676)), thus negating any suggestion that this was Fritsch's position. Furthermore, to the extent that Amgen's argument is credited, then Amgen and Mr. Borun failed to apprise the Board of its true position and allowed the Board to decide priority over Fritsch on a faulty predicate. The Board plainly stated "[w]e agree with Lin" that

"there is no evidence that the work done at Amgen relating to the expression of the EPO gene in mammalian host cells and isolation of the resulting glycoprotein product involved anything other than the exercise of ordinary skill by practitioners in that field." (R. Ex. 70 (*Fritsch v. Lin*, 21 U.S.P.Q.2d 1737, 1739 (Bd. Pat. App. & Interf. 1992)). To the extent the Board misinterpreted Lin's assertions, Amgen and Mr. Borun had a duty to correct that misunderstanding. (R. Ex. 71 (M.P.E.P § 2001.05 (5th ed. Rev. 3, May 1986))). This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

29. I further opine that Mr. Borun's failure to disclose inconsistent statements set forth during opposition proceedings in Europe involving Genetics Institute's '678 and '539 patents, (R. Ex. 72), was a material omission, as Amgen's position in those proceedings directly contradicted Amgen's argument that the '008 and '179 claims were patentably distinct. This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. §1.56.

30. It is also my opinion that Mr. Borun materially misstated the proper legal standard to be applied with respect to consideration of the prior art in relation to an obviousness-type double patenting rejection. The Manual of Patent Examining Procedure clearly allows consideration of the prior art in an obviousness-type double patenting rejection. (R. Ex. 73 (MPEP § 804 (8th ed., Rev. 5, Aug. 2006)) ("Claim [1] rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim [2] of U.S. Patent No. [3] in view of [4], [5]."). This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56. I further opine that when Mr. Borun cited *In re Braat*, 937 F.2d 589 (Fed. Cir. 1991) in response to the double patenting rejection but did not explain

that the two-way test for non-obviousness did not apply, this was a material omission that would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

31. I understand that Amgen argues that attorney argument cannot constitute a material misrepresentation or omission for the purposes of inequitable conduct. I disagree. When "attorney argument" is based on a misrepresentation of facts or omits material facts known to the attorney, the statements can be material. I understand that when Amgen's expert, Mr. Kunin, was questioned regarding this very issue, he concluded that an attorney representation can never be material, as one cannot distinguish between attorney arguments and attorney statements:

> Q. Is attorney argument material information?
>
> A. Absolutely not.
>
> Q. What if the attorney argument is based on misrepresented facts?
>
> *****
>
> THE WITNESS: I -- of all the cases I've read, attorney arguments are not fact. They are just not the kind of information that falls into the category of being material information.
>
> *****
>
> Q. What about attorney statements?
>
> *****
>
> THE WITNESS: I don't distinguish statements from arguments.
>
> BY MR. FORCHHEIMER: Q. Even statements about facts?
>
> THE WITNESS: I still think it's arguments. I don't know how to distinguish from what you've said other than arguments.

(R. Ex. 121 (6/27/07 Kunin Depo. Tr.) at 151:21-152:6, 153:18-154:4 (objections omitted)). I disagree. Where attorney statements and arguments are made to unfairly persuade the examiner, the statements are material and are not in compliance with the duty of candor and good faith. In particular, Mr. Borun's statements (to the extent they are characterized as "arguments") in this case were material misrepresentations. This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

32. But for Mr. Borun's conduct, the '868 and '698 patents, which originated with the '179 application, would not have issued.

V. Amgen's Misrepresentations and Omissions To Overcome A Double Patenting Rejection Over The Lai '016 Patent

33. As stated in my expert report, it is my opinion that Mr. Borun's failure to correct Examiner Hodges' understanding of the prosecution histories of the '298 application, the '008 patent, the '016 patent and the pending '179 application constituted a material omission of information that would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56. Mr. Borun knew that Applicant had cancelled the process claims of the '179 application when they were pending in the '298 application, and waited over six months to file a continuation application. Therefore, the delay in issuance of the '868 patent could not have been solely the responsibility of the Patent Office, a key element of the two-way test of non-obviousness. Mr. Borun had a duty to correct the Examiner's misunderstanding, especially in light of Examiner Hodges' conclusion that the pending claims would be invalid for obviousness-type double patenting under the one-way test. (R. Ex. 77 (AM-ITC 00953651)).

34. It is also my opinion that based on Mr. Borun's duty of disclosure and the facts set forth in Roche's memo and Roche's Statement of Facts, an intent to deceive the Patent Office can be inferred. But for Mr. Borun's omission of important facts and failure to correct the

record, the ‘868 and ‘698 patents would not have issued and Amgen would not have enjoyed the right to exclude the public from purifying recombinant EPO from mammalian cell culture as claimed by the Lai ‘016 patent since May 1987.

VI. Amgen’s Misrepresentations and Omissions Regarding Apparent Molecular Weight

35. As stated in my expert report, Amgen, its attorneys and those substantively involved in the prosecution of the applications, misrepresented and omitted material facts regarding differences in apparent molecular weight between uEPO and rEPO with an intent to deceive the Patent Office.

36. I have considered the accompanying Declaration of Carolyn Bertozzi, Ph.D. In Support of Roche’s Opposition to Amgen’s Motion for Summary Judgment of No Inequitable Conduct.

37. It is my opinion that Amgen, its attorneys and those substantively involved in the prosecution of the ‘178 and continuation applications, knew and understood during the prosecution of the ‘178 application and continuation applications that the apparent molecular weight of urinary EPO was 34,000 daltons. (R. Ex. 5 (‘933 patent) at col. 5:48-52; R. Ex. (AM-ITC 00987639-49); R. Ex. 6 (AM-ITC 01072482); R. Ex. 124 (4/15/91 Egrie Depo. Tr.) at 562-65).

38. It is also my opinion that Amgen, its attorneys and those substantively involved in the prosecution of the ‘178 and continuation applications, knew of numerous publications, data and other submissions in which it was determined that the apparent molecular weight of rEPO did not exceed that of uEPO (*i.e.* 34,000 daltons), as required by claim 2 of the ‘933 patent. These documents include the Egrie Input File (R. Ex. 1 (AM-ITC 01072474-501)), a 1985 Egrie article (R. Ex. 100 (1985 Egrie article)), a 1984 Egrie abstract (R. Ex. 101 (1984 Egrie abstract)),

a 1984 Egrie presentation (R. Ex. 102 (AM-ITC 01073032-42)), a 1984 Egrie presentation transcript (R. Ex. 103 (AM-ITC 00557610-16)), a 1986 Egrie article (Ex. 1), a 1988 Vapnek article (R. Ex. 123 (1988 Vapnek article)), a 1994 Declaration by Thomas Heckler (R. Ex. 126 (AM-ITC 00311601-18)), a 1994 Declaration by Thomas Strickland (Ex. 6), a 1993 Declaration by Eugene Goldwasser (R. Ex. 127 (1/23/93 Declaration of Eugene Goldwasser)) and a Notice of Claimed Investigational Exemption for r-HuEPO (R. Ex. 136). None of these documents were submitted to the Examiner of the '178 and its continuation applications. These references would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

39. I understand that at least one court has held that the information in Lin's specification was inaccurate because the published literature (not disclosed to the Examiner in the U.S.) showed that Lin's COS rEPO had the same apparent molecular weight as uEPO, and that Lin's CHO rEPO had the same apparent molecular weight as certain preparations of uEPO. (R. Ex. 107 (UK TKT Opinion)).

40. I understand that Amgen argues that at least the Egrie Input File and the 1986 Egrie article were submitted to the Board of Patent Appeals and Interferences during the '334 Interference, and that the remainder of the references are cumulative to these two disclosures, Lin's PNAS publication (Ex. 39), and numerous other disclosures. I disagree. Many of the references Amgen cites do not even mention molecular weight or SDS-PAGE. (*e.g.*, Ex. 34; Ex. 40). Moreover, the Lin PNAS publication does not clearly state that rEPO and uEPO have the same apparent molecular weight. Instead, the examiner would have had to determine the similarity from multiple references or he would have had to interpret SDS-PAGE gel results to arrive at that conclusion. Finally, it is my opinion that by consistently providing the Examiner with information demonstrating that rEPO has a ***higher*** molecular weight than uEPO, Amgen

had a duty to provide a fair representation of the art disclosing contrary conclusions. Thus, Amgen needed to provide more than one reference to show the underlying material information was not an outlier. For this reason, references that provide the same information are not cumulative to one another.

41. Furthermore, the Lin PNAS publication (Ex. 1) was buried in a submission of 360 prior art references without an explanation of relevance. (Ex. 28). It is my opinion that the Lin PNAS publication would not have been subject to a thorough review. Indeed, the Patent Office has dictated that "[w]here the IDS citations are submitted but not described, the examiner is only responsible for cursorily reviewing the references. The initials of the examiner on the PTO-1449 indicate only that degree of review unless the reference is either applied against the claims, or discussed by the examiner as pertinent art of interest, in a subsequent office action." (R. Ex. (1223 OG 124)). Furthermore, the MPEP states that "non-identification of an especially relevant passage buried in an otherwise less or non-relevant text could result in a holding of 'violation of duty of disclosure.'" (R. Ex. 69 (MPEP § 2002.03(b) (5th ed. Rev. 3, May 1986))). Therefore, it is my opinion that the Lin PNAS publication was not adequately disclosed.

42. Furthermore, to the extent that the withheld references have similar teachings to the 1986 Egrie article or the Egrie Input File, it is my opinion that disclosure of those references to the Interference Board does not constitute disclosure to the examiner. Pursuant to 37 C.F.R. § 1.4(b) and (c),

> (b) Since each file must be complete in itself, a separate copy of every paper to be filed in a patent, patent file, or other proceeding must be furnished for each file to which the paper pertains, even though the contents of the papers filed in two or more files may be identical. The filing of duplicate copies of correspondence in the file of an application, patent, or other proceeding should be avoided, except in situations in which the Office requires the filing of duplicate copies. The Office may

> dispose of duplicate copies of correspondence in the file of an application, patent, or other proceeding.
>
> (c) Since different matters may be considered by different branches or sections of the United States Patent and Trademark Office, each distinct subject, inquiry or order must be contained in a separate paper to avoid confusion and delay in answering papers dealing with different subjects.

I understand that Amgen's own expert, Mr. Kunin, has acknowledged that the Interference Board is part of the "the Office." (R. Ex. 121 (6/27/07 Kunin Depo. Tr.) at 197:21-22). I agree with Mr. Kunin in this respect. However, the Interference Branch is separate from the Examining Branch. Therefore, the disclosure of references to the Interference Board does not equal disclosure to the Examiner. Furthermore, even in the absence of 37 C.F.R. § 1.4, it is my opinion that disclosure to the Interference Board in this case was not sufficient. As noted earlier, the Examiner in this case would not have had the time to fish through thousands of pages of an Interference File to find something relevant to patentability.

43. I further understand that Amgen argues that Examiner Fitzgerald reviewed the interference file for the '334 Interference and, therefore, would have been aware of its contents. I note that there is no evidence of what portions of the Interference file Examiner Fitzgerald received or reviewed. Common practice at the time was such that when an examiner requested an interference file, certain papers, such as exhibits, would not have been included. Therefore, there is no evidence that the 1986 Egrie article or the Egrie Input File were even part of the materials Examiner Fitzgerald received.

44. Furthermore, in my opinion, the prosecution history shows that Examiner Fitzgerald was reviewing the '334 Interference file for information pertaining to Dr. Lai's inventive contribution to the subject matter of the '178 application. On July 23, 1993, Dr. Lai submitted a protest claiming to be a co-inventor of the pending application. (R. Ex. 3 (AM-ITC

00941255-61)). Examiner Fitzgerald did not decide the Lai Protest until an Office Action mailed on December 29, 1993. (R. Ex. 4 (AM-ITC 00941412-14)). The evidence is therefore clear that when Examiner Fitzgerald was reviewing the file in October-November 1993, he was doing so for information pertaining to the Lai Protest, and not in relation to differences (or the lack thereof) between rEPO and uEPO. This is confirmed by the fact that Fitzgerald's Office Action makes no mention of the contents of the '334 Interference File.

45. But for the omission of material facts, claim 2 of the '933 patent would not have issued.

VII. Amgen's Misrepresentations and Omissions Regarding COS rEPO

46. As stated in my expert reports, Amgen, its attorneys and those substantively involved in the prosecution of the applications, misrepresented and omitted material facts regarding differences in glycosylation and carbohydrate content between uEPO and rEPO with an intent to deceive the Patent Office.

47. In my opinion, information relating to the similarity in glycosylation of COS rEPO and uEPO would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56. The evidence is clear that Amgen maintained during prosecution and indeed continues to maintain that claims sought during prosecution of the '178 and related continuation applications covered recombinant EPO expressed in mammalian cells, including CHO cells and COS cells. (*e.g.* R. Ex. 96 (AM-ITC 00941111); R. Ex. 112 (AM-ITC 00941548); *see also* R. Ex. 12 (AM-ITC 00953641) ("Applicant has disclosed the production of ... human species erythropoietin in monkey (COS) and Chinese Hamster Ovary (CHO) cells.")). Therefore, in relation to the patentability of claims with limitations such as "having glycosylation which differs from that of human urinary erythropoietin" and "having an average carbohydrate

composition which differs from that of naturally occurring [human] erythropoietin", it is my opinion that Amgen and those substantively involved in prosecution of the patents-in-suit had a duty to disclose information pertaining to COS cells. This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

48. Instead of submitting art relating to the comparison of COS rEPO to uEPO, Amgen and Mr. Borun only submitted information comparing CHO rEPO and uEPO, such as the 1988 Strickland Declaration and the Cummings Declaration. However, as explained by Dr. Bertozzi, references including the Egrie Input File (R. Ex. 1 (AM-ITC 01072474-501)), a 1985 Egrie article (R. Ex. 100 (1985 Egrie article)), a 1984 Egrie abstract (R. Ex. 101 (1984 Egrie abstract)), a 1984 Egrie presentation (R. Ex. 102 (AM-ITC 01073032-42)), a 1984 Egrie presentation transcript (R. Ex. 103 (AM-ITC 00557610-16)), all showed that COS rEPO and uEPO are glycosylated to the same extent. This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

49. I understand that Amgen argues that these references are all cumulative to the Egrie Input File, which was disclosed during the '334 Interference. First of all, I do not agree that these references are cumulative. To support patentability of its claims, Amgen submitted numerous documents showing a difference in glycosylation between CHO rEPO and uEPO, including the 1988 Strickland Declaration, the Cummings Declaration, numerous articles and references attached therein and numerous documents submitted in the '334 Interference. Amgen had a duty to provide a similar representation regarding experimentation with COS rEPO and uEPO. It is not enough to disclose one reference -- albeit buried in an Interference file -- relating to COS rEPO and many references relating to CHO rEPO. This presents an unfair and

misguided depiction of the art which would leave the Examiner with the misimpression that the one COS rEPO reference was merely an anomaly.

50. Furthermore, even if the withheld references are deemed cumulative to the Egrie Input file, I do not agree that the Egrie Input File was disclosed to the Examiner for the reasons discussed above with respect to apparent molecular weight. In particular, Patent Office rules require an applicant to submit a copy of each material reference to each division of the Patent Office to which it pertains. 37 C.F.R. § 1.4(b), (c). Therefore, disclosure to the Interference Board does not equate with disclosure to the Examiner. Furthermore, as noted, the evidence is clear that Examiner Fitzgerald did not review the '334 Interference File for all of its teachings, but rather for the express purpose of analyzing Dr. Lai's protest. As such, not only is disclosure to the Interference Board insufficient to satisfy the disclosure obligations to the patent examiner as a general matter, the evidence in this case makes clear that information pertaining to COS rEPO in the '334 Interference File was not sufficiently disclosed to the Examiner.

51. In my opinion, but for Amgen and those substantively involved in the prosecution of the '178 continually omitting material facts, at least claim 1 of the '933 patent and claim 1 of the '080 patent would not have issued.

VIII. Amgen's Misrepresentations and Omissions Regarding CHO rEPO

52. As set forth in my expert report, Amgen, its attorneys and those substantively involved in the prosecution of the applications, misrepresented and omitted material facts regarding differences in glycosylation and carbohydrate content between uEPO and rEPO with an intent to deceive the Patent Office.

53. In my opinion, that after Messrs. Borun and Odre told the Examiner during the '774 prosecution that they would provide evidencing comparing the glycosylation of rEPO with

uEPOs known as of the filing date of the application "and even from the naturally occurring EPOs known since", Messrs. Borun and Odre had a duty to provide complete information regarding such comparisons. (Ex. 25 (AM-ITC 00941497)). The evidence is clear that Amgen and Messrs. Borun and Odre had information showing that CHO rEPO had the same glycosylation as Lot-82 and Alpha Therapeutics uEPO, two uEPOs "known since." (R. Ex. 1 (AM-ITC 01072481, 86)). This information was not submitted, but it would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

54. Instead of disclosing this important information, Amgen relied on the Cummings Declaration, which did not disclose information showing a similarity in glycosylation between CHO rEPO and uEPO. I understand that Amgen argues that the Browne article (Ex. 3), which showed the similarity in CHO rEPO and uEPO, was attached to the Cummings Declaration and was therefore adequately disclosed. However, Dr. Cummings did not cite the Browne article as relevant to showing a difference (or lack thereof) between CHO rEPO and uEPO. Instead, he referenced it with respect to O-glycosylation of EPO in support of his argument regarding the Nimtz *et al*. (1993) reference. (Ex. 14). Indeed, the articles he relied on to show differences between rEPO and uEPO were clearly summarized in table form for the examiner, which did not include the Browne article. (Ex. 14 at p. 20). Therefore, as Amgen's expert, Mr. Kunin, admits, the Examiner would not have considered this article as relevant to showing such differences, even though it was attached to the Declaration. (*See* R. Ex. 7 (Kunin Report) ¶ 376 ("The Patent Office's consideration of a document submitted by the applicant as evidence directed to an issue of patentability is limited to the portion of the document relied upon by the applicant...the Patent Office may not consider the entirety of the document.")).

55. Furthermore, to the extent that Amgen argues that relevant information was submitted in the '334 Interference, I opine that this was not sufficient disclosure to the Examiner for the reasons set forth above with respect to apparent molecular weight and COS rEPO.

56. In my opinion, but for Amgen and those substantively involved in the prosecution of the '178 continually omitting material facts, claim 1 of the '933 patent and claim 1 of the '080 patent would not have issued.

IX. Amgen's Failure To Disclose Material Prior Art Rejections

57. As explained in my expert reports, Amgen and its attorneys failed to disclose material rejections from the other co-pending line of applications with an intent to deceive the Patent Office.

58. In my opinion, the prior art rejections set forth in the '179 and '178 applications would have been important to a reasonable examiner of the other co-pending application and to patentability under 37 C.F.R. § 1.56. Evidence shows that Amgen itself recognized the substantial similarity of the claims pending in the '178 and '179 applications. Indeed, Amgen submitted much of the same prior art for the Examiners' consideration in both lines of applications. (Ex. 28; Ex. 29). It is my opinion that an adverse decision by another examiner meets the standard for materiality and, therefore, the rejections in the '178 and '179 applications should have been disclosed.

59. I understand that Amgen has argued that any misconduct in failing to disclose material prior art rejections was cured when Examiner Martinell took over examination of both the '178 and '179 lines of applications in 1994. I disagree. All of the relevant rejections and Amgen's failure to disclose occurred prior to Examiner Martinell's assumption of examination duties. Furthermore, a reasonable examiner would not have scrutinized every paper in the file

histories nor every reference submitted during the prosecution history of the pending applications upon taking over examination. This would have been an arduous task that no reasonable examiner has time to undertake. Furthermore, because an examiner is required to give full faith and credit to the actions of a prior examiner (*see* R. Ex. 7 (Kunin Report) ¶ 46), Examiner Martinell would not have scrutinized the entire file history.

60. I also understand that Amgen argues that Examiner Martinell must have been aware of the prior rejections by virtue of his participation in two interviews in both lines of applications on the same date. I disagree. While Examiner Martinell did discuss some (but not all) of the references that formed the basis of the rejections, this was in relation to a different rejection. Furthermore, it is my opinion that the MPEP makes clear that a rejection in a co-pending application may be material, apart from the references upon which it is based. (R. Ex. 180 (MPEP § 2001.06(b) (5th ed. Rev. 3, May 1986)); R. Ex. 181 (MPEP § 2001.01 (8th ed. Rev. 5, Aug. 2006)). Therefore, this information would have been important to a reasonable examiner under 37 C.F.R. § 1.56.

61. I further understand that Amgen has argued that the references forming the basis for the rejections in the '178 and '179 applications were adequately disclosed in Information Disclosure Statements and accompanying PTO-1449 forms. Aside from my opinion that a rejection is in and of itself material apart from the references upon which it is based, I note that references submitted in an IDS are not necessarily given a thorough review. As noted earlier, the Patent Office has stated that "[w]here the IDS citations are submitted but not described, the examiner is only responsible for cursorily reviewing the references. The initials of the examiner on the PTO-1449 indicate only that degree of review unless the reference is either applied against the claims, or discussed by the examiner as pertinent art of interest, in a subsequent office

action." (R. Ex. 236 (1223 OG 124); R. Ex. 69 (MPEP § 2002.03(b) (5th ed. Rev. 3, May 1986)) ("non-identification of an especially relevant passage buried in an otherwise less or non-relevant text could result in a holding of 'violation of duty of disclosure'")). Therefore, when the underlying references were submitted in IDS's with approximately 400 additional references, (Ex. 28; Ex. 29), it is highly unlikely that the references were given a thorough consideration and the submission, in these circumstances, does not conform with the duty of good faith and candor.

X. Amgen's Misrepresentations and Omissions Regarding Its Work With The 1411 Cell Line

62. As explained in my expert report, Amgen, including Mr. Borun and Drs. Egrie and Lin, misrepresented and omitted material facts regarding Amgen's work with the 1411 cell line with an intent to deceive the Patent Office.

63. I understand that on June 18, 1987, Examiner Tanenholtz rejected Lin's claims to the EPO DNA sequence in the '298 application because:

> Ullrich et al and Martial teach a basic process for isolating mRNA and converting it into a cDNA library for use in cloning and expressing mammalian genes. It would be obvious to prepare erythropoietin as a fused peptide by extracting the messenger RNA for erythropoietin from kidney cells known to be rich therein and converting that mRNA to a cDNA library in the manner taught by Ullrich et al or Martial." (R. Ex. 137 at R008992046-47 (emphasis added)).

64. It is my opinion that Mr. Borun's statement that there was "a serious problem securing ... erythropoietin-producing cells, much less cells producing high levels of the protein" (R. Ex. 138 (R008892072)) was a misrepresentation, as Amgen had been working with the 1411 cell line, which was known to produce high levels of erythropoietin. (*See, e.g.*, R. Ex. 140 (AM-ITC 00052045), R. Ex. 141 (AM-ITC 00057704)). This information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

XI. Amgen's Misrepresentations and Omissions Regarding the State of the Prior Art

65. As set forth in my expert report, Amgen and its attorney, Mr. Borun, misrepresented and omitted material facts regarding the state of the prior art with an intent to deceive the Patent Office.

66. By submitting a Petition to Make Special and his accompanying Declaration during the '179 prosecution, Mr. Borun -- like other applicants who use this procedure in the PTO -- requested the Examiner for expedited examination based on representations concerning the prior art. (R. Ex. 233 (MPEP § 708.02 (5th ed. Rev 6, Oct. 1987)); R. Ex. 234 (MPEP § 708.02 (8th ed. Rev. 5, Aug. 2006))). It is my opinion that by filing the Petition to Make Special and the accompanying Declaration, Mr. Borun induced the Examiner to rely on his representations regarding the state of the prior art in exchange for the Examiner's expedited consideration of the pending application.

67. It is my opinion, Mr. Borun's assertions regarding the teachings of the prior art and, in particular, the EP '619 application, constituted material misrepresentations that left the Examiner with the impression that he did not need to conduct a further investigation for relevant prior art. (R. Ex. 10 at AM-ITC 00953221-23). The EP '619 application disclosed the same processes claimed by Dr. Lin. (R. Ex. 156 (EP '619)). I further opine that Amgen and Mr. Borun's continual reliance on misrepresentations regarding the state of the prior art and the EP '619 application were material. The fact that Mr. Borun submitted a copy of the EP '619 application at one or more points during the prosecution of the patents-in-suit and the '008 patent does not cure Mr. Borun's affirmative misrepresentations regarding its teachings. The teachings of the EP '619 application would have been important to a reasonable examiner and to patentability under 37 C.F.R § 1.56.

68. Furthermore, it is my opinion that U.S. Patent No. 4,766,075 was a material prior art reference which should have been disclosed. Mr. Borun had knowledge of the '075 patent and its materiality by virtue of his familiarity with the EP '619 patent, the European counterpart. I further opine that the '075 patent would not have been cumulative because it could have been used as a basis for a §102(e)/§103 rejection, whereas the EP '619 application could only form the basis of a rejection under §102(a)/§103. Therefore, this reference would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

69. I further opine that Amgen and Mr. Borun's failure to disclose U.S. Patent 4,966,843 (McCormick), relating to recombinant expression of interferon, was a material omission. The facts show that Mr. Borun was aware of McCormick's work, and indeed cited it on numerous occasions. (R. Ex. 13 (AM-ITC 00953711) (disclosing McCormick *et al.*, "Regulated Expression of Human Interferon Genes in Chinese Hamster Ovary Cells," *DNA* 2(1). 86 Abst 86 (1983); McCormick *et al.*, "Inducible Expression of Amplified Human Beta Interferon Genes in CHO Cells," *Mol. Cell. Biol.*, 4(1):166-172 (1984)). Amgen and its attorneys were continuously tracking the activities of Amgen's competitors. (R. Ex. 13 (AM-ITC 00953711); R. Ex. 168 (11/6/97 Watt Depo Tr.) at 9-13; R. Ex. 169 (5/24/89 Rathmann Depo Tr.) at 60). The facts also show that Examiner Tanenholtz was interested in prior art relating to the recombinant expression of proteins (whether "obligate" or not), (R. Ex. 159 (AM-ITC 00953228) (citing Yokota U.S. 4,695,542 disclosing production of GMCSF); R. Ex. 38 (AM-ITC 00953276) (characterizing Yokota as disclosing multi-CSF or IL-3 (interleukin-3)); *see also* Ex. 18 (AM-ITC 00953693)), and Amgen and Mr. Borun understood this. Therefore, the '843 patent would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

70. In my opinion, but for Mr. Borun's omission of important facts and failure to correct the record, the '868 and '698 patents would not have issued.

XII. Amgen's Failure To Disclose The Standard Used In RIA

71. As set forth in my expert report, Amgen, including Messrs. Borun and Odre and Drs. Lin and Egrie, concealed the standard to be used in radioimmunoassay with an intent to deceive the Patent Office.

72. I have considered the accompanying Declaration of Charles Zaroulis, Ph.D. In Support of Roche's Opposition to Amgen's Motion for Summary Judgment of No Inequitable Conduct.

73. It is my opinion that information pertaining to the erythropoietin standard Dr. Lin used in conducting RIA experiments, as set forth in the Lin specification, would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56. Different erythropoietin "standards" were available for use at the time, and the different standards would yield different results in RIA. (R. Ex.174 at AM-ITC 00550986, AM-ITC 00554040; R. Ex. 243 at AM-ITC 00558660, AM-ITC 00558662; R. Ex. 57 at 45:18-25, 134:9-11; 170:17-171:20; 183:20-184:3; 184:14-185:2, 194:7-16). Furthermore, the evidence shows that the CAT-1 standard used by Amgen was no longer available as of September 1984. (R. Ex. 173 at AM-ITC 00061678 (letter from Dr. Egrie); R. Ex. 57 (3/27/07 Egrie Depo. Tr.) at 173-174). Had information relating to Amgen's standard been disclosed, this would have raised concerns of patentability under § 112, including definiteness and best mode. Therefore, information relating

to Amgen's use of the CAT-1 standard would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

74. Furthermore, the evidence shows that "U", as recited in Amgen's '349 patent claims, does not correlate with the widely accepted International Units. (R. Ex. 172 (10/7/85 Correspondence at AM-ITC 00550777)). This information was not disclosed to the Examiner of the '369 application. However, this information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56 because it raises concerns of indefiniteness under 35 U.S.C. § 112, as there would be no ability for one to tell if he/she was infringing the claims of Amgen's '349 patent.

75. In my opinion, but for Amgen's omission of important facts, the '349 patent would not have issued.

XIII. Amgen's Misrepresentations and Omissions Regarding the Baron-Goldwasser Study and Related Prior Art

76. As set forth in my expert reports, Messrs. Odre and Watt and Drs. Egrie and Lin misrepresented and omitted material facts regarding the state of the prior art with respect to EPO/HSA preparations with an intent to deceive the Patent Office.

77. It is my opinion that the Baron-Goldwasser study and the 1971 Garcia article would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56.

78. I understand that on June 1, 1994, Examiner Stanton issued a rejection of file claims 61-63 over the prior art because

> Each of Takezawa et al. (B and C), disclose methods of purifying "erythropoietin (see e.g. Claims of each U.S. Patent and Example 3 of reference C). Note that Takezawa et al. (B) specifically state that "erythropoietin ... is a promising medicine for curing anemia" (Abstract at lines 2 and 3) and Takezawa et al. (C) states in column 1 at lines 21-23 that "erythropoietin is a promising therapeutic medicine in the clinic (sic) treatment of anemia or, in particular, renal anemia".

> None of Miyake et al. or Takezawa et al. (B or C) disclose a composition of erythropoietin comprising human serum albumin.
>
> *****
>
> Since erythropoietin was a known compound with accepted therapeutic use, one of ordinary skill in the art at the time of the instant invention, would have been motivated to prepare pharmaceutical compositions comprising erythropoietin. Further, since HSA was a known and accepted pharmaceutically excipient, one would have used HSA in preparing any pharmaceutical composition. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have prepared the claimed pharmaceutical compositions comprising erythropoietin and HSA.

(R. Ex. 196 at AM-ITC 00899160-61).

79. To overcome the rejection, Amgen argued

> The Examiner has cited three prior references showing various levels of purification of erythropoietin from urinary sources and combined those with Back and/or the present specification. First, it should be noted that none of these cited references (except the present specification) disclose or even suggest the claimed compositions. Bock relates to a totally different protein. The Examiner has in hindsight combined references disclosing urinary erythropoietin with references which suggest the use of HSA in general in pharmaceutical compositions. This is improper. From the disclosure of Miyake and the two Takezawa patents, there is no indication that a diluent such as human serum albumin would be required to prepare a pharmaceutical composition with erythropoietin.

(R. Ex. 197 at AM-ITC 00899173-74).

80. The evidence shows that Amgen and those substantively involved in prosecution of the ‘422 patent, including Mr. Odre and Drs. Lin, Egrie and Strickland, knew of the Baron-Goldwasser study and the 1971 Garcia article long before filing the ‘741 application, which led to the ‘422 patent. Indeed, a memorandum written a mere five days before filing the ‘741 application revealed that a prior art search directed towards the patentability of claim 2 of the ‘422 patent regarded the Baron-Goldwasser Study and the 1971 Garcia article as material prior art. (R. Ex. 186 (AM-ITC 00097004-18)). Therefore, these withheld references would be

important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56. Both would be available as prior art under §102 and §103.

81. I understand that Amgen has argued that the Baron-Goldwasser study was immaterial because it did not show the EPO/HSA formulations to be therapeutically effective. However, I don't think this is relevant. Amgen's own expert, Mr. Kunin, agrees that a reference does not need to meet every limitation of a particular claim to be material. (R. Ex. 121 (6/27/07 Kunin Depo. Tr.) at 223:16-224:10). Furthermore, evidence shows that Amgen interpreted the Baron-Goldwasser study as being therapeutically effective. Indeed, Mr. Odre was told that the Baron-Goldwasser composition was for therapeutic use. (R. Ex. 198 at AM-ITC 00245727-29); *see also* R. Ex. 190 (AM-ITC 00084770-80); R. Ex. 199 at AM-ITC 00849306-41)). When Amgen faced a rejection for indefiniteness based on the term "therapeutically effective," its attorney responded that the patent "specification indicates several potential therapeutic uses for the claimed invention" sufficient to overcome the rejection, including stimulation of reticulocyte response, erythrocyte mass change, stimulation of hemoglobin C synthesis, development of ferrokinetic effects and increasing hematocrit levels in patients. (R. Ex. 197 (AM-ITC 00899171)). Many of these same results were shown in the Baron-Goldwasser study, including "increase in reticulocyte number" and "an increase in red cell mass." (R. Ex. 198 (AM-ITC 00245727-29)). Therefore, whether or not the Baron-Goldwasser study was therapeutically effective is irrelevant in assessing the materiality of the reference.

82. I further understand that Amgen has argued that the Baron-Goldwasser study and the 1971 Garcia article are cumulative to a 1982 Garcia article, which was disclosed to the Examiner. I disagree. The 1982 Garcia article pertains to use of EPO/HSA in radioimmunoassay, not for therapeutic use in humans. (R. Ex. 202 (AM-ITC 00478389-400)).

The whole purpose of Amgen's filing the '422 patent was to protect Amgen's clinical formulation of Epogen®, used in humans. (R. Ex. 185 (AM-ITC 00899084-85); R. Ex. 186 (AM-ITC 00097005, 006)). Therefore, references disclosing EPO/HSA for use in animal models, such as the Baron-Goldwasser study and the 1971 Garcia article, are clearly more pertinent and not cumulative to references disclosing EPO/HSA for radioimmunoassay.

83. As noted above, when the Examiner rejected the claims and said the claimed compositions would be obvious, Amgen argued that the Examiner had applied improper hindsight to combine references. (R. Ex. 197 at AM-ITC 00899173-74). Had the Baron-Goldwasser study been disclosed, Amgen could not have made that argument. As such, the Baron-Goldwasser study must be material.

84. I also understand that Amgen has argued that information relating to the Baron-Goldwasser study, though not the data itself, was submitted during the '334 Interference, and was therefore sufficiently disclosed. I disagree. As detailed above, disclosure to the Interference Board does not satisfy the duty of candor, as set forth in 37 C.F.R. § 1.4. Furthermore, as discussed above, the '334 Interference file was very large, over 5,500 pages. A reasonable examiner would not have fished through thousands of pages to look for information that might be relevant to patentability. Additionally, while Examiner Fitzgerald, the examiner of the '933 patent, reviewed portions of the '334 Interference file, there is no evidence that Examiner Stanton (the examiner of the '422 patent) conducted a similar review. Indeed, this is not surprising, as the '933 patent and '422 patent are not in the same lines of applications, and there is no requirement to review the '933 file or the related '334 Interference file. (R. Ex. 87 (AM-ITC 00906488)). Examiner Stanton would have no reason to review an Interference File relating to an application that he was not examining, and there is no evidence that he did.

85. But for Amgen's misrepresentation and omission of important facts, the '422 patent would not have issued. It is also my opinion that the withheld information would have been important to a reasonable examiner and to patentability under 37 C.F.R. § 1.56 in relation the prosecution of the '933 and '080 patents, which also claim pharmaceutical compositions.

Executed this 5th day of July 2007 at Fairfax, Virginia.

/s/ Michael Sofocleous
Michael Sofocleous

CERTIFICATE OF SERVICE

I hereby certify that this document filed through the ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF) and paper copies will be sent to those indicated as non registered participants on July 5, 2007.

/s/ Keith E. Toms
Keith E. Toms

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