IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

AMGEN, INC. Plaintiff, v. F. HOFFMANN-LA ROCHE LTD, ROCHE DIAGNOSTICS GmbH, and HOFFMANN-LA ROCHE INC. Defendants.	Civil Action No. 05 CV 12237 WGY **ORAL ARGUMENT REQUESTED**

MEMORANDUM IN SUPPORT OF ROCHE'S MOTION FOR SUMMARY JUDGMENT THAT CLAIM 1 OF U.S. PATENT NO. 5,995,422 IS INVALID FOR INDEFINITENESS AND LACK OF WRITTEN DESCRIPTION

Leora Ben-Ami (*pro hac vice*)
Mark S. Popofsky (*pro hac vice*)
Patricia A. Carson (*pro hac vice*)
Thomas F. Fleming (*pro hac vice*)
Howard S. Suh (*pro hac vice*)
Peter Fratangelo (BBO# 639775)
KAYE SCHOLER LLP
425 Park Avenue
New York, New York 10022
Tel. (212) 836-8000

Lee Carl Bromberg (BBO# 058480)
Julia Huston (BBO# 562160)
Keith E. Toms (BBO# 663369)
Nicole A. Rizzo (BBO# 663853)
BROMBERG & SUNSTEIN LLP
125 Summer Street
Boston, MA 02110
Tel. (617) 443-9292

Counsel for Defendants,
F. HOFFMANN-LA ROCHE LTD,
ROCHE DIAGNOSTICS GmbH, and
HOFFMANN-LA ROCHE INC.

Dated: July 3, 2007

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Defendants F. Hoffmann-La Roche, Ltd, Roche Diagnostics GmbH, and Hoffmann-La Roche Inc. (collectively "Roche") submit this memorandum in support of their motion for summary judgment that claim 1 of United States Patent No. 5,955,422 ("the '422 patent") is invalid under 35 U.S.C. § 112 because it is indefinite and/or fails to comply with the written description requirement.

I. INTRODUCTION

In prior litigation, Amgen attempted to distinguish the erythropoietin-containing pharmaceutical composition of claim 1 of the '422 patent from the erythropoietin ("EPO") of the prior art based on the "therapeutically effective" limitation of the claim, but the Federal Circuit remanded the issue to the district court for further consideration based on the Federal Circuit's claim construction. *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 457 F.3d 1293, 1303 (Fed. Cir. 2006). Thus, here, Amgen attempts to distinguish the claimed product from the prior art based on the claim term "wherein said erythropoietin is purified from mammalian cells grown in culture." Amgen maintains that the claim language is not merely a source limitation, but rather one that recites structure that physically distinguishes the claimed EPO product from EPO structures that existed in the prior art.

Roche does not agree that the source language in the '422 patent claim 1, "wherein said erythropoietin is purified from mammalian cells grown in culture" imparts structural or functional limits on the human erythropoietin element recited earlier in the claim. There is nothing in the intrinsic evidence to suggest to a person of skill in the art that such language would put limits on the structures, or what the limited class of structures might be. This, however, is all old ground that the Court has already addressed, and Amgen should be precluded from re-arguing to the contrary. This Court, applying the guidance it received from the Federal Circuit, has already rejected Amgen's argument that claim 1 of the '422 patent is structurally

limited by the source. In *Amgen v. Hoechst Marion Roussel, Inc.*, 339 F. Supp. 2d 202 (D. Mass 2004) ("*Amgen III*") the Court stated:

> Amgen argues in defense that Sugimoto does not suggest purification *from mammalian cells grown in culture* specifically. The Federal Circuit made clear in *Amgen II*, however, that when considering obviousness with respect to the '422 and '080 product claims, "a claimed product shown to be present in the prior art cannot be rendered patentable solely by the addition of source or process limitations." *Amgen II*, 314 F.3d at 1354 n. 20 (citing *General Electric Co. v. Wabash Corp.*, 304 U.S. 364, 373, 58 S.Ct. 899, 82 L.Ed. 1402 (1938, and *Cochrane v. Badische Anilin & Soda Fabrik*, 111 U.S. 293, 311, 4 S.Ct. 455, 28 L.Ed. 433 (1884)). **Therefore, this argument fails**.

(*Amgen III* at 317) (emphasis added)

Implicit in the Court's ruling is a legal determination that the source language "*from mammalian cells grown in culture"* does not impart structural or functional limitations to the human erythropoietin used in the pharmaceutical composition. The doctrine of issue preclusion dictates that Amgen should not be allowed to re-plough old ground where the Court has already ruled against it.

However, if the claim language "purified from mammalian cells grown in culture" is deemed to recite a structural distinction, as Amgen maintains, then claim 1 of the '422 patent is invalid under 35 U.S.C. § 112. Indeed, according to Amgen, the only physical difference between its claimed EPO products and EPO known in the prior art is the glycosylation.[1] Yet, this Court has previously held that claims in a related Amgen patent which shares the specification of the '422 patent and which expressly distinguished the claimed EPO from prior art human urinary EPO based on unspecified glycosylation differences, were invalid for

[1] "Glycosylation" is the addition of carbohydrate side chains to amino acid residues in protein sequences to form glycoproteins. *Amgen, Inc. v. Hoechst Marion Roussel*, 314 F.3d 1313, 1340 (Fed. Cir. 2003) ("*Amgen II*").

indefiniteness and lack of written description owing to the "enormous heterogeneity" of the glycosylation found in human urinary erythropoietin. *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 126 F. Supp. 2d 69, 155 (D. Mass. 2001) ("*Amgen I*").

As this Court explained, "because neither the patent nor the prior art provides clear guidance as to which human urinary EPO standard ought to be used, one of ordinary skill in the art would be unable to determine whether a particular erythropoietin has glycosylation which differs from that of human urinary glycosylation." *Id*. at 156. The Court described glycosylation a "moving target" and hence a "standardless standard for use in defining the claimed EPO product." *Id.* at 129, 155. The Federal Circuit affirmed on appeal. *Amgen II*, 314 F.3d at 1342.

Given that the patents-in-suit disclose only one physical distinction between the claimed EPO products and EPO in the prior art, *i.e.*, their glycosylation, and given that the glycosylation of EPO isolated from natural sources has already been held to be a "standardless standard," it follows that "purified from mammalian cells grown in culture" in claim 1 -- which Amgen asserts physically distinguishes the claimed products over prior art EPO -- is indefinite and lacks written description. The claims do not enable potential infringers to determine whether particular EPO products are covered by the claims and the specification does not demonstrate that the patent applicant was in possession of what was claimed. Allowing Amgen to enforce the patent would be unfair to the public and would upset the careful balance forged by Congress. *See United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 233 (1942) ("To sustain claims so indefinite as not to give the notice required by the statute would be in direct contravention of the public interest which Congress therein recognized and sought to protect.").

In short, if, as Amgen argues, the claim term "purified from mammalian cells grown in culture" recites a structural distinction and not merely a source distinction, then the decisions in

Amgen I and *Amgen II* mandate that claim 1 of the '422 patent is invalid for indefiniteness and failure to comply with the written description requirement of 35 U.S.C. § 112.

II. STATEMENT OF FACTS

A. The '422 Claim At Issue

Amgen asserts that Roche's MIRCERA™ product will infringe claim 1 of the '422 patent which states:

> A pharmaceutical composition comprising a therapeutically effective amount of human erythropoietin and a pharmaceutically acceptable diluent, adjuvant or carrier, *wherein said erythropoietin is purified from mammalian cells grown in culture*.

(emphasis added).[2]

This Court has construed the claim term "purified from mammalian cells grown in culture" to mean "obtained in substantially homogeneous form from mammalian cells, using the word 'from' in the sense that it originates in the mammalian cells, without limitation to it only taking it directly out of the interior of the cells, which have been grown in the in vitro culture." (Docket No. 428 at 40). The Federal Circuit held that "purified from mammalian cells grown in culture" "limit[s] only the source from which the EPO is obtained, not the method by which it is produced." *Amgen II*, 314 F.3d at 1330 n.5.

B. Amgen Maintains That "Purified From Mammalian Cells Grown In Culture" Recites A Structural Distinction

Amgen contends that the claim language of the '422 patent "purified from mammalian cells grown in culture" is not merely a source limitation, but rather is also a structural limitation. According to Amgen, the claim limitation "imparts structural elements to the recited product that necessarily differ from all previously known products." (*See* Docket No. 323-1 at 7; *see also*

[2] Claim 1 is the only claim of the '422 patent asserted by Amgen against Roche. (See Fratangelo Decl., Ex. B at p. 3).

Docket No. 312 at 17 ("The limitation 'purified from mammalian cells grown in culture' . . . recites the source from which the 'human erythropoietin' component of the claimed composition may be obtained and necessarily imparts a further structural requirement that the product also be glycosylated")).

Thus, Amgen's position is that the claim language "purified from mammalian cells grown in culture" recites structure that distinguishes the "pharmaceutical composition comprising a therapeutically effective amount of human erythropoietin" of claim 1 of the '422 patent from prior art EPO.

C. The Impact Of The *TKT* Litigation On Claim 1 Of The '422 Patent

In *Amgen I*, this Court held that recombinant EPO could not be distinguished from urinary EPO based on glycosylation differences. Specifically, this Court concluded:

> (1) the glycosylation of urinary erythropoietin has "enormous heterogeneity"; (2) different purification techniques, several of which were known by one skilled in the art in 1984, result in differing glycosylated erythropoietin populations; (3) despite referring to at least two purification methods, the patent does not identify which human urinary erythropoietin preparation ought be used as a standard, nor would a skilled person know which urinary EPO preparation should be used; and (4) different urinary erythropoietin samples have different glycosylation. As a result, *making comparisons between the glycosylation of recombinant EPO and that of human urinary EPO is virtually impossible*.

Amgen I, 126 F. Supp. 2d at 155 (emphasis added).

Consequently, this Court found claims 1, 2 and 9 of the '933 patent -- which are limited to "non-naturally occurring" products -- not infringed and further held that if the Court's non-infringement finding was deemed error on appeal, the claims would be invalid for: (1) lack of written description ("the patent fails to convey to one of ordinary skill in the art as of 1984 that Dr. Lin invented an erythropoietin product having glycosylation which differs from human urinary erythropoietin" (*Id.* at 155)); (2) indefiniteness ("because different urinary erythropoietin

preparations differ in their glycosylation, and because neither the patent nor the prior art provides clear guidance as to which human urinary EPO standard ought to be used, one of ordinary skill in the art would be unable to determine whether a particular erythropoietin has a glycosylation which differs from that of human urinary erythropoietin" (*Id.* at 156)); and (3) nonenablement ("an ordinary skilled worker would be unable to perform the experimental analysis necessary to confirm whether the manufactured glycoprotein product has glycosylation which differs from that of human urinary erythropoietin" (*Id.* at 165)). The Federal Circuit affirmed this Court's holding that claims 1, 2 and 9 of the '933 patent were invalid for indefiniteness. *Amgen II*, 314 F.3d at 1342.

Thus, this Court and the Federal Circuit have rejected as indefinite the one structural limitation cited by Amgen to distinguish recombinant EPO from the natural EPO of the prior art.

III. ARGUMENT

A. The Summary Judgment Standard

As this Court has stated, "[i]f there are no genuine issues of material fact, summary judgment is appropriate in a patent infringement case as in any other." *Amgen I*, 126 F. Supp. 2d at 93. This Court's invalidity holding under § 112 in *Amgen I* with respect to glycosylation comparisons between recombinant EPO and urinary EPO, together with the Court's subsidiary findings, mandate that the Court grant summary judgment here in Roche's favor on the grounds that claim 1 of the '422 patent is indefinite and lacks written description.

B. Claim 1 Of The '422 Patent Is Invalid As Indefinite

Amgen maintains that "purified from mammalian cells grown in culture" structurally distinguishes the claimed invention over the prior art. However, Amgen has cited no structural differences other than glycosylation and glycosylation differences have already been found to make the claims indefinite.

1. Standard For Indefiniteness Under 35 U.S.C. § 112, ¶2

Paragraph 2 of § 112 states:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35 U.S.C. § 112, ¶2.

Failure to particularly point out and distinctly claim an invention renders the claim invalid. *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). "The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested [persons] . . . can determine whether or not they infringe." *Oakley, Inc. v. Sunglass Hut Int'l*, 316 F.3d 1331, 1340 (Fed. Cir. 2003). "A claim is definite if 'one skilled in the art would understand the bounds of the claim when read in light of the specification.'" *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 424 F.3d 1374, 1383 (Fed. Cir. 2005) (quoting *Personalized Media Commc'ns, LLC v. ITC*, 161 F.3d 696, 705 (Fed. Cir. 1998)). As the Supreme Court has stated, the indefiniteness requirement, along with the other § 112 requirements, are part of a "delicate balance" between the interests of the inventors and the public:

> The monopoly is a property right; and like any property right, its boundaries should be clear. This clarity is essential to promote progress, because it enables efficient investment in innovation. A patent holder should know what he owns, and the public should know what he does not. For this reason, the patent laws require inventors to describe their work in "full, clear, concise, and exact terms," 35 U.S.C. § 112, as part of the delicate balance the law attempts to maintain between inventors, who rely on the promise of the law to bring the invention forth, and the public, which should be encouraged to pursue innovations, creations, and new ideas beyond the inventor's exclusive rights.

Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 730-31 (2002).

Summary judgment of invalidity for indefiniteness of a patent under 35 U.S.C. § 112 is especially appropriate because "[a] determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as construer of the patent claims." *See Default Proof*, 412 F.3d at 1298.

2. The Pharmaceutical Composition of Claim 1 Must Be Structurally Distinct

Claim 1 of the '422 patent cannot be distinguished over prior art EPO based only on the difference in source. In *Amgen II*, the Federal Circuit stated that "a claimed product shown to be present in the prior art cannot be rendered patentable solely by the addition of source or process limitations." 314 F.3d at 1354. *See also General Electric Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 373 (1938) ("a patentee who does not distinguish his product from what is old except by reference, express or constructive, to the process by which he produced it, cannot secure a monopoly on the product by whatever means produced").

More recently, based on the same principle, the Federal Circuit held invalid two product-by-process claims in a pharmaceutical composition patent. The patentee there argued that the recitation of a novel process in the claims was sufficient to overcome a prior art patent that described all the structural elements of the claimed products. The court rejected the argument, holding that "a prior art disclosure of a product precludes a future claim to that same product, even if it is made by an allegedly novel process." *SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1319 n.7 (Fed. Cir. 2006).

Simply put, claims to EPO products read on the prior art if they encompass products that are identical to the structures of naturally occurring EPO regardless of the source of the products. Product claims cannot preclude the use of a prior art compound merely because the product is made a new way. Thus, Amgen is desperate to show the elements of claim 1 of the '422 patent,

reflect a physical difference -- not merely a difference in source -- between the claimed EPO products and the prior art EPO in the human body, in urinary preparations and in human tumor cells grown in culture.

3. The '422 Patent Distinguishes The Claimed EPO From Prior Art EPO Based Only On Glycosylation

The only structural distinction that the '422 patent discloses between EPO purified from host cells and EPO from natural sources is a difference in the average carbohydrate composition (i.e., glycosylation):

> Glycoprotein products provided by the present invention are thus comprehensive of products having a primary structural conformation sufficiently duplicative of that of a naturally-occurring erythropoietin to allow possession of one or more of the biological properties thereof and *having an average carbohydrate composition which differs from that of naturally-occurring erythropoietin*.

(Fratangelo Decl., Ex. A, col. 29:18-24 (emphasis added)). The support in the specification for the glycosylation distinction appears in Example 10, which provides in pertinent part:

> Purified human urinary EPO and a recombinant, CHO cell-produced, EPO according to the invention were subjected to carbohydrate analysis according to the procedure of Ledeen, et al. Methods in Enzymology, 83(Part D), 139-191 (1982) as modified through use of the hydrolysis procedures of Nesser, et al., Anal. Biochem., 142, 58-67 (1984). Experimentally determined carbohydrate constitution values (expressed as molar ratios of carbohydrate in the product) for the urinary isolate were as follows: Hexoses, 1.73; N-acetylglucosamine, 1; N-acetylneuraminic acid, 0.93; Fucose, 0; and N-acetyl-galactosamine, 0. Corresponding values for the recombinant product (derived from CHO pDSVL-gHuEPO 3-day culture media at 100 nM MTX) were as follows: Hexoses, 15.09; N-acetylglucosamine, 1; N-acetyineuraminic acid, 0.998; Fucose, 0; and N-acetylgalactosamine, 0. These findings are consistent with the Western blot and SDS-PAGE analysis described above.

(Fratangelo Decl., Ex. A, col. 29:6-17)[3] According to the patent, after removal of all of the attached carbohydrates, recombinant EPO and urinary EPO were "substantially homogenous products having essentially identical molecular weight characteristics." (Fratangelo Decl., Ex. A, col. 28:66-67).

Thus, it is clear that if, as Amgen argues, the term "purified from mammalian cells grown in culture" is a structural limitation, then the supposed structural difference must be the glycosylation. The patent cites no other structural distinction.

4. Amgen's Experts Distinguish The Claimed EPO Products On The Basis Of Glycosylation

Recognizing that its claimed EPO products cannot be patentably distinguished over prior art EPO, including EPO isolated from urine, based on source limitations alone, Amgen's experts have opined that EPO products of the claims and the naturally occurring EPO of the prior art are physically distinguishable. However, the only distinction identified by the experts is glycosylation.

In his May 11, 2007 report, Dr. Ajit Varki opines that the "process and source limitations confer specific structures to the claimed products and that those specific structures are different from the structure of the EPO that was purified from human urine before Dr. Lin made his inventions." (Fratangelo Decl., Ex. C, at ¶ 58). Dr. Varki explains that to show all recombinant EPO has glycosylation which differs from all naturally occurring EPO is a "practically impossible standard" (Fratangelo Decl., Ex. E, at ¶ 27). He relies then on his opinion that "the glycosylation structures imparted by cells grown in culture are inherently different than those

[3] Amgen has admitted that the reported ratios of carbohydrates on naturally occurring EPO and recombinant EPO, as reported in the patent, are wrong. *See Fritsch v. Lin, Interference* No. 102,334, 21 U.S.P.Q.2d 1739, 1741 (Bd. Pat. App. & Int. 1992).

imparted by the cells in the kidney that naturally produce EPO." (Fratangelo Decl., Ex. C at ¶ 211). According to Dr. Varki:

> [I]t it not surprising that no recombinant EPO can accurately reproduce the precise structure the mixture of glycoforms in naturally-occurring prior art EPO. When a gene for a secreted glycoprotein is removed from its normal cellular environment, and inserted into a different type of cell -- often from a different species -- which is grown under far different conditions than its in situ environment in the body, it is completely unsurprising that the glycoprotein that is produced has different glycan structures than the naturally-occurring glycoprotein. One would have understood that it would have been extremely unlikely and practically impossible to reproduce the glycosylation found on naturally occurring EPO because of both the difficulty in reproducing the cell type that normally makes EPO and the difficulty in reproducing the environment in which those cells normally grow.

(*Id*. at ¶ 84). It is also noteworthy that Dr. Varki's report provides no opinion on differences between human EPO produced in human tumor cells grown in culture and the human EPO claimed in the '422 patent.

Dr. Catlin's May 11, 2007 expert report recites that he used an isoelectric focusing method, first described in 2000, to test several samples of recombinant EPO and urinary EPO. (Fratangelo Decl., Ex. D at ¶¶ 58-59). Dr. Catlin concluded that "[a]ll recombinant EPOs tested could clearly be distinguished from both EPO in normal urine and the International standard for urinary EPO. The difference in each case is the presence of several isoforms in urinary EPO which are lacking for each recombinant EPO." (*Id.* at ¶ 69(ii)). Dr. Catlin explained that IEF differentiates molecules on the basis of the "pI," which is "a reflection of all the charged groups attached to the protein molecule." (*Id.* at ¶ 26). According to Dr. Catlin, the charged groups can include "sugar groups like sialic acid." Dr. Catlin does not suggest that his IEF results are attributable to anything other than glycosylation differences.

Amgen is unable to point to any other structural difference between recombinant EPO and urine-derived EPO. Amgen expert Dr. Eugene Goldwasser testified that "we don't know anything about the secondary structure . . . of urinary EPO." (Fratangelo Decl., Ex. F at 104:21 - 105:8). He noted that "nobody has determined a three-dimensional structure of urinary EPO." (*Id.* at 90:10 - 91:5). Based on admissions of Amgen in prior litigation this Court found "there are no known differences between the secondary structure of rEPO produced in a CHO cell and EPO produced in a human kidney." *Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd*, 1989 U.S. Dist. LEXIS 16110 (D. Mass., December 11, 1989).

5. Claim 1 Of the '422 Patent Is Indefinite

Claim 1 of the '422 patent is indefinite because it fails to identify a physical basis for distinguishing the claimed EPO isolated from mammalian cells in culture from EPO isolated from natural sources that would be outside the scope of claim 1.

The only physical difference cited by Amgen is glycosylation, but this Court and the Federal Circuit have found that a distinction based upon a glycosylation comparison between EPO purified from host cells and EPO isolated from natural sources is indefinite because the glycosylation of EPO isolated from urine is a "moving target" and a "standardless standard for use in defining the claimed EPO product." *Amgen I*, 126 F. Supp. 2d at 129, 155. The Federal Circuit explained that "[b]y definition, one must know what the glycosylation of uEPO is with certainty before one can determine whether the claimed glycoprotein has a glycosylation different from that of uEPO." *Amgen II*, 314 F.3d at 1342.

In sum, in an effort to avoid invalidity in view of the prior art, Amgen argues that the term "purified from mammalian cells grown in culture" reflects a physical distinction over the prior art. However, the only such distinction recited in the patents-in-suit or otherwise cited by

Amgen has already been held indefinite by this Court and the Federal Circuit. Thus, claim 1 of the '422 patent should be held invalid for indefiniteness.[4]

6. Amgen Is Collaterally Estopped from Disputing that Glycosylation Is an Indefinite Standard For Distinguishing Its Claimed EPO From EPO Isolated From Natural Sources

In its claim construction argument regarding the term "purified from mammalian cells grown in culture" and its submission of the Varki and Catlin expert reports, Amgen has attempted to relitigate whether glycosylation is an indefinite grounds for distinguishing its claimed EPO from EPO isolated from natural sources. However, under the doctrine of issue preclusion, Amgen is estopped from rearguing the issue which was decided against it in *Amgen I* and *Amgen II*. Therefore, any evidence that Amgen presents to the contrary does not even raise a triable issue of fact that would defeat the instant motion.

In patent cases, the Federal Circuit applies the issue preclusion law of the regional circuit. *Vardon Golf Co. v. Karsten Mfg. Corp.*, 294 F.3d 1330, 1333 (Fed. Cir. 2002). In the First Circuit, courts look for five essential elements in applying collateral estoppel: "(1) the issue sought to be precluded must be the same as that involved in the prior action; (2) the issues must have been actually litigated; (3) the issue must have been determined by a valid and binding final judgment; and, (4) the determination of the issue must have been essential to the judgment; and (5) the party to the second action must be the same as or in privity with the parties in the first action." *Boston Sci. Corp. v. SciMed Life Sys., Inc.*, 983 F. Supp. 245, 255 (D. Mass. 1997) (relying on *NLRB v. Donna-Lee Sportswear Co.*, 836 F.2d 31, 34 (1st Cir. 1987)).

Here, all of the requirements of issue preclusion are met: Whether glycosylation would allow a potential infringer to distinguish between naturally occurring and non-naturally occurring

[4] Alternatively, the patent should be held invalid, under 35 U.S.C. § 102, over the prior art.

EPO was actually at issue in the *TKT* litigation. That question was fully litigated by Amgen in the district court and the district court's indefiniteness holding was essential to the final judgment of invalidity of claims which expressly distinguished prior art EPO based upon glycosylation. The judgment was affirmed on appeal. Consequently, Amgen is foreclosed from reopening the issue.

C. Claim 1 Of The '422 Patent Is Invalid For Failure To Comply With The Written Description Requirement

Claim 1 of the '422 patent is also invalid because the specification does not disclose to a person of ordinary skill in the art that Dr. Lin was in possession of EPOs purified from mammalian host cells that were physically distinct from prior art EPO.

Section 112 of the patent law provides that "[t]he specification shall contain a written description of the invention . . . ." 35 U.S.C. § 112 ¶1. "The purpose of the written description requirement is to prevent an applicant from later asserting that he invented that which he did not; the applicant for a patent is therefore required to 'recount his invention in such detail that his future claims can be determined to be encompassed within his original creation.'" *Amgen II*, 314 F.3d at 1330 (citing *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1561 (Fed. Cir. 1991)) (citation omitted). "[I]t is in the patent specification where the written description requirement must be met." *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 927 (Fed. Cir. 2004) (affirming summary judgment on written description grounds).

As explained above, however, in *Amgen I* this Court held that "making comparisons between the glycosylation of recombinant EPO and that of human urinary EPO is virtually impossible." (*Id.* at 155). The Court found that "one of ordinary skill in the art" would not have known "which of the varying urinary EPO preparations ought to be utilized" as a standard of comparison and that "[a]s a result, the patent fails to convey to one of ordinary skill in the art as

of 1984 that Dr. Lin invented an erythropoietin glycoprotein product having glycosylation which differs from that of human urinary erythropoietin." (*Id.*). Accordingly, this Court stated that "if [its] finding of noninfringement were to be ruled error, this Court would, in the alternative, rule that all three asserted claims of the '933 patent invalid for lack of written description." (*Id.* at 155-56).

If, as Amgen argues, "purified from mammalian cells grown in culture" recites structure and is not merely a source limitation, then claim 1 of the '422 patent similarly lacks the requisite written description to the extent that the claim would distinguish the claimed EPO products from EPO isolated from natural sources on the basis of glycosylation alone. Moreover, as shown above, Amgen is collaterally estopped from arguing the contrary. Stated otherwise, in view of *Amgen I* and *Amgen II*, where glycosylation of EPO isolated from natural sources was characterized as a moving target, the patent specification does not support claims to EPO products which are defined as being something structurally different from EPO structures existing in the prior art, such as the EPO structures in the human body, EPO structures isolated from natural sources and EPO structures produced in human tumor cells grown in culture.

IV. CONCLUSION

For all of the foregoing reasons, this Court should grant summary judgment that claim 1 of the '422 patent is invalid for indefiniteness and lack of written description.

DATED: Boston, Massachusetts
July 3, 2007

Respectfully submitted,

F. HOFFMANN-LA ROCHE LTD,
ROCHE DIAGNOSTICS GMBH, and
HOFFMANN-LA ROCHE INC.

By their Attorneys,

/s/ Nicole A. Rizzo
Lee Carl Bromberg (BBO# 058480)
Julia Huston (BBO# 562160)
Keith E. Toms (BBO# 663369)
Nicole A. Rizzo (BBO # 663853)
BROMBERG & SUNSTEIN LLP
125 Summer Street
Boston, MA 02110
Tel: (617) 443-9292
nrizzo@bromsun.com

Leora Ben-Ami (*pro hac vice*)
Mark S. Popofsky (*pro hac vice*)
Patricia A. Carson (*pro hac vice*)
Thomas F. Fleming (*pro hac vice*)
Howard S. Suh (*pro hac vice*)
Peter Fratangelo (BBO# 639775)
KAYE SCHOLER LLP
425 Park Avenue
New York, NY 10022
Tel: (212) 836-8000

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/s/ Nicole A. Rizzo
Nicole A. Rizzo

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