EXHIBIT 38
Part 2 of 2

The argument presented by Fritsch et al in favor of priority based on a version of a probing method for possible use (FB 20-30) totally disregards the Courts' finding that conception of the purified and isolated EPO gene did not occur until the gene was reduced to practice. Nothing in this record would permit a finding to the contrary. The simple fact of the matter is that Fritsch et al had no concept of the constitution of the gene before it was isolated and identified as the gene encoding EPO. By that time, Lin had expressed recombinant human EPO and found it to have in vivo biological activity.

The Fritsch argument that he was diligent (FB 27-30) also bypasses the fundamental point that diligence is of no consequence until there is a conception of an invention, which Fritsch did not have until he actually reduced the EPO gene to practice. Lin does not believe Fritsch et al have established diligence over the time period they have alleged, particularly in view of the extensive periods of unexcused lapses in diligence proven at trial in the District Court, especially during the time just before Lin's conception/reduction to practice in September, 1983.

The Federal Circuit decision dealt squarely with the issue of priority as between Lin and Fritsch, including the argument based on the alleged prior concept of a probing strategy. Thus, the Federal Circuit noted (18 USPQ2d at 1020):

> *Defendants assert error in the district court's legal conclusion that in this case Lin's conception occurred simultaneously with reduction to practice. See, e.g. Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1376, 231 USPQ 81, 87 (Fed. Cir. 1988), cert. denied, 480 U.S. 947 (1987). They claim that Fritsch was first to conceive a probing strategy of using two sets of fully-degenerate cDNA probes of two different regions of the EPO gene to screen a gDNA library, which was the strategy which the district*

> *court found eventually resulted in the successful identification and isolation of the EPO gene. Defendants further claim that Fritsch conceived this strategy in 1981, was diligent until he reduced the invention to practice in May of 1984, and thus should be held to be a 102(g) prior inventor over Lin, who reduced the invention to practice in September of 1983.*

The Federal Circuit then went on to agree with the District Court's position regarding simultaneous conception and reduction to practice as follows (18 USPQ2d at page 1021):

> *The invention recited in claim 2 (the count) is a 'purified and isolated DNA sequence' encoding human EPO. The structure of this DNA sequence was unknown until 1983, when the gene was cloned by Lin; Fritsch was unaware of it until 1984. As Dr. Sadler, an expert for GI, testified in his deposition: 'You have to clone it first to get the sequence...'. Prior to 1983, the amino acid sequence for EPO was uncertain, and in some positions the sequence envisioned was incorrect. Thus, until Fritsch had a complete mental conception of a purified and isolated DNA sequence encoding EPO and a method for its preparation, in which the precise identity of the sequence is envisioned, or in terms of other characteristics sufficient to distinguish it from other genes, all he had was an objective to make an invention which he could not then adequately describe or define.* (Matter in parenthesis and underscoring added.)

In brief, therefore, the priority case in this interference begins and ends with the recognition by the Federal Circuit that Lin was the first to reduce to practice the purified and isolated DNA sequence encoding human EPO. Fritsch et al have not challenged this finding. It is also unchallenged by Fritsch et al that this sequence was used by Lin in transfected mammalian cells for expression to produce in vivo biologically active recombinant human EPO and that all of this work was done by Lin before Fritsch et al even conceived the sequence, according to the Federal Circuit and

District Court decisions. See pages 1020-1022 of the Federal Circuit decision and pages 1759-1764 of the District Court decision.

The testimony of Fritsch et al and his co-workers is, at best, duplicative of the Rule 608(b) testimony that was in evidence in the District Court and argued in the trial to establish prior conception of Edward Fritsch.[11] Fritsch et al have not presented any new evidence that Edward Fritsch's December, 1981, probing strategy amounted to anything more than a goal of obtaining the purified and isolated EPO gene whatever its identity. No witness testified in this interference that Edward Fritsch or his designated co-inventors Hewick and Jacobs had any idea of precise identity of the EPO gene or of any characteristic of the gene sufficient to distinguish it from other genes. The record here reveals only what was revealed to the District Court, that until the EPO gene was cloned and sequenced at GI in 1984, all Fritsch et al had was "...an objective to make an invention which he [they] could not then adequately describe or define" (18 USPQ2d at 1021).

Rather than address factual foundations of the Federal Circuit's holding on simultaneous conception and reduction to practice, the Fritsch et al brief reverts to attempts (unsuccessfully presented in the District Court, the Federal Circuit and in

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[11] If anything, Fritsch et al's 608(b) evidence was significantly weakened by cross-examination of these witnesses who were brought up to provide live testimony. Cross-examination established numerous instances of work previously "credited" to the GI EPO projects was actually for other GI projects and work that had nothing to do with two fully degenerate probes, genomic library screening strategy allegedly conceived by Edward Fritsch in December, 1981. Likewise the Fritsch et al Declaration testimony of the Fritsch et al co-workers is riddled with objectionable presentations. (See Lin's Motion to Suppress Fritsch et al Evidence and Opposition to Fitsch et al's proposed Findings of Fact.) The record herein only illuminates the colossal failure of that strategy until long after knowledge of Lin's success.

preliminary motions[12]) to "transform" the claimed invention herein into a method of probing invention. Thus, despite Lin's assertions to the Examiner during prosecution of the '008 patent that "the presently claimed subject matter involves novel DNA, not a novel method for obtaining it,"[13] Fritsch et al persist in characterizing the invention of the count as a strategy for isolating the EPO gene, which strategy was allegedly conceived by Edward Fritsch or by Fritsch et al at some time prior to Lin.[14] However, the Federal Circuit's ruling completely disposes of this argument (18 USPQ2d at page 1021):

> *Fritsch had a goal of obtaining the isolated EPO gene, whatever its identity, and even had an idea of a possible method of obtaining it, but he did not conceive a purified and isolated DNA sequence encoding EPO and a viable method for obtaining it until after Lin. It is important to recognize that neither Fritsch nor Lin invented EPO or the EPO gene. The subject matter of claim 2 was the novel purified and isolated sequence which codes for EPO, and neither Fritsch nor Lin knew the structure or physical characteristics of it and had a viable method of obtaining that subject matter until it was actually obtained and characterized.* (Underscoring added.)

The Federal Circuit disagreed completely with Fritsch's argument that Fritsch was the first inventor because of his probing strategy. Thus, the Court stated:

> *Defendants further argue that because the trial court found that the probing and screening method employed by Lin is what distinguished the invention of the '008 patent over the prior art,*

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[12] See Fritsch et al Motion D, dismissed by the Examiner-in-Chief, attempting to substitute a process claim for the count.

[13] Page 17, 2d ¶, July 13, 1987 amendment.

[14] The Fritsch et al brief (page 20) actually invites the Board to pick from among five dates for completeness of the Fritsch et al cloning strategy.

Fritsch's strategy in 1981 had priority over Lin's use of that strategy. We disagree. The trial court found that Fritsch's alleged conception in 1981 of an approach that might result in cloning the gene was mere speculation. Conception of a generalized approach for screening a DNA library that might be used to identify and clone the EPO gene of then unknown constitution is not conception of a "purified and isolated DNA sequence" encoding human EPO. It is not "a definite and permanent idea of the complete and operative invention". Fritsch's conception of a process had to be sufficiently specific that one skilled in the relevant art would succeed in cloning the EPO gene. See, Coleman, 754 F.2d at 359, 224 USPQ at 862. Clearly, he did not have that conception because he did not know the structure of EPO or the EPO gene.

Commenting further on the inadequacy of the Fritsch et al position, the Federal Circuit held that (18 USPQ2d at pages 1021-1022):

> The record indicates that several companies, as well as Amgen and GI, were unsuccessful using Fritsch's approach. As the trial court correctly summarized:
>
> > *Given the utter lack of experience in probing genomic libraries with fully degenerate probes and the crudeness of the techniques available in 1981, it would have been mere speculation or at most a probable deduction from facts then known by Dr. Fritsch that his generalized approach would result in cloning the EPO gene.*
>
> *13 USPQ2d at 1760.*
>
> *"As expert testimony from both sides indicated, success in cloning the EPO gene was not assured until the gene was in fact isolated and its sequence known. Based on the uncertainties of the method and lack of information concerning the amino acid sequence of the EPO protein, the trial court was correct in concluding that neither party had an adequate conception of the DNA sequence until reduction to practice had been achieved; Lin was first to accomplish that goal.*
>
> *Defendants also argue that the court failed to consider that 1983, just prior to Lin's conception, was the relevant time for determining the completeness of Fritsch's conception, not 1981. However, the*

> *record shows that the court did consider what occurred in 1983. Moreover, Fritsch had no more of a conception in 1983 than he did in 1981, because he did not then know the sequence of the gene encoding EPO.* (Underscoring added).

This means that all of the evidence from the District Court proceedings, which Fritsch et al have reintroduced into these proceedings, including the alleged strategy involving a possible method of probing suitable for cloning the DNA sequence, is of no consequence and can be dismissed as ineffective and irrelevant to priority. According to the Federal Circuit decision, Fritsch et al could not have a conception of the DNA sequence until they had actually reduced to practice the DNA sequence. By that time, according to the undisputed facts, Lin had not only isolated the sequence but he or others at his request had used it in expression to produce in vivo biologically active recombinant human EPO.

While the foregoing should be dispositive of the priority issue as between Fritsch et al and Lin, it is useful to separately set out the District Court's undisputed findings as to the work done by Lin and Fritsch in reducing the invention to practice as this serves to underscore Lin's priority position. Thus, the District Court found, the Federal Circuit did not question, and Fritsch et al have not challenged, the following findings of facts as to Lin's work (13 USPQ2d at page 1748):

> *The successful cloning of the EPO gene took place in September or early October 1983. (Tr. 4, 64-66; 5, 123-124). This was the first time that Lin ever designed, ordered and used two sets of probes, both fully degenerate, from two different regions of the EPO gene to screen a genomic library. (Tr. 5, 91, 124). Amgen (someone other than Dr. Lin) sequenced the gene to confirm it was the EPO gene (Tr. 4,74).*

In late October, 1983, Lin cloned the monkey cDNA EPO sequence. (Tr. 4, 72). On December 3, 1983, Lin also hybridized the human EPO gene to monkey EPO cDNA so that he could determine from an electron micrograph which area of the human DNA consisted of introns, and what the sizes of the exons and introns were. (Tr. 4, 68-72; PX 63-38).

* * * * * * * * * * * * * *

By January 10, 1984, Amgen had expressed human EPO in human embryonic kidney cells called "293" cells and in COS cells, which are monkey kidney cells. (Tr. 4-75-77; PX 63-39; PX 63-41). Someone other than Dr. Lin did the work with the mammalian expression system. (Tr. 5, 51-52). Lin was personally involved in the E. Coli expression of EPO. (Tr. 5,52). On February 13 and 14, 1984, Amgen conducted experiments to show that the recombinant human EPO produced in the COS cell was biologically active. (Tr. 4, 80).'

* * * * * * * * * * * * * *

From March 1-9, 1984, Amgen conducted an in vivo bioassay and determined that the recombinant EPO was biologically active. (Tr. 4, 82-83).

On March 15, 1984, Lin obtained the human full length EPO cDNA gene. (Tr. 4, 83; 5, 28).

* * * * * * * * * * * * * * *

By May 2, 1984, human rEPO had been expressed in CHO cells. (Tr. 4, 86). Jeff Browne and Ralph Smalling worked together on the EPO project team, which Lin continued to head through 1984...

As for Fritsch et al, the District Court noted that Fritsch et al were unsuccessful in cloning the EPO gene prior to August, 1984 summarizing the Fritsch et al position as follows (13 USPQ2d at page 1751):

On May 30, 1984, the genomic library for isolating the EPO gene was plated and hybridized using two sets of probes, both fully degenerate, from different regions of the amino acid sequence. (Tr. 26, 96-98). This process resulted in the identification of two clones in July, 1984, both of which were the full gene for EPO. (Tr. 26, 100-102). This was the first time that GI used two sets of fully degenerate probes based on the correct amino acid sequence for EPO. (Tr. 31, 46). Also, Dr. Fritsch used a hybridization solution called TMAC, which had not been used by Dr. Lin when he cloned the EPO gene. (Tr. 7, 101; 26, 86).

The positive clones were then used to construct a single long probe to screen a cDNA library constructed from human fetal liver, and on August 6, 1984, cDNA clones were successfully isolated. (Tr. 26, 104-106). GI transfected a CHO cell with a cDNA clone for EPO; this was the expression system with which GI was most familiar. (Tr. 26, 107).

The District Court's uncontested factual findings can thus be summarized in the following chronology:

ACTIVITY	DATE
Lin clones human EPO gene	Sept.-Oct. 1983
Amgen (for Lin) confirms EPO gene by sequencing	Sept.-Oct. 1983
Lin clones monkey EPO gene	Late Oct. 1983
Amgen (for Lin) expresses human EPO gene in 293 and COS cells	Jan. 10, 1984
Amgen (for Lin) determines biological activity of recombinant human EPO gene expression product	Feb. 13-14, 1984

Amgen (for Lin) determines in vivo biological activity of recombinant human EPO gene expression product	March 1-9, 1984
Amgen (for Lin) expresses human EPO gene in CHO cells	May 2, 1984
Fritsch identifies two clones	July 1984
Fritsch expresses human EPO gene in CHO cells	after Aug. 1984

The above undisputed factual summary from the District Court decision thus clearly and unequivocally shows that Lin made the invention at issue (i.e., in vivo biologically active recombinant human EPO) before Fritsch et al even obtained the essential DNA sequence.

Although the District Court decision does not refer to the specific descriptive language of the count, the in vivo biologically active recombinant human EPO product which the Courts found Lin had obtained is clearly the product of the count. Fritsch et al cannot seriously argue against this, or that there is any difference between Lin's in vivo biologically active recombinant human EPO as referred to by the District Court; the EPO of the count and the EPO called for by Fritsch et al claim 8. These clearly represent one and the same invention. In fact, this stands admitted by Fritsch et al since they never filed a motion urging any difference (a) between their recombinant EPO (their claim 8) and the EPO of the count, (b) between their expression process and the process of Interference No. 102,097 or (c) between their DNA sequence and the sequence of the count in Interference No. 102,096. Fritsch et al claim 8 here involved depends from their claim 2 which refers to culturing mammalian cells which contain a DNA sequence substantially as shown in Figure 3B. This is the same figure (Figure 3B) referred to in claim 46 of Fritsch et al Serial No.

693,258 which is identified in Interference No. 102,096 as corresponding to the count of that interference. The unchallenged correspondence of Fritsch et al claims to counts of the three interferences represents a clear recognition by Fritsch et al that Lin's expression process and his recombinant human EPO represent the same invention as the Fritsch et al expression process and EPO, respectively. The District Court and Federal Circuit have found that Lin isolated the DNA sequence and used it in mammalian cells for expression to obtain in vivo biologically active recombinant human EPO before the Fritsch et al conception of the sequence. It follows that Lin clearly reduced the invention of the count to practice and is the prior inventor of the subject matter at issue.

That Lin reduced the product of the count to practice before Fritsch et al is further shown by the additional evidence introduced by Lin in the present record. Thus, not only Lin but Browne and Egrie testified that the CHO cell-expressed recombinant human EPO obtained by May, 1984 met all of the characteristics of the count (LR 7, 32, 70), including the indicated difference in average carbohydrate composition (LR 7, 30, 67-70). This product had in vivo biological activity as shown by Dr. Dukes' results with the H3 and B11 test samples in June 1984 (LR 88). Thus, Lin has established a priority date well ahead of any date available to Fritsch et al.

Furthermore, it is noted that Fritsch et al have not proven any actual reduction to practice as they have not established that their expression product had in vivo biological activity by any competent evidence. See discussion under "The Fritsch et al Priority Evidence".

In view of the foregoing, it is submitted that Lin is entitled to priority as to the count.

(c) Lin's Claims Corresponding to the Count Are Patentable to Lin under 35 USC 102(b).

The EIC properly denied Fritsch et al Motions I and II [identified as Motions 8(A) and 8(B) in the decision on Motions, Paper No. 42]. The Lin claims define novel and patentable subject matter and are enabled by the Lin disclosure. Fritsch et al have not shown any manifest error in the EIC's decision denying the Fritsch et al motions and they have not presented any new facts which meet the burden placed on them (Jacobs v. Moriarty, 6 USPQ2d 1799, BPAI, 1988) and warrant any change in the EIC's position.

Both motions center on an argument that Lin's evidence demonstrating that his recombinant EPO has an average carbohydrate composition different from that of naturally occurring EPO is insufficient in one way or another. The alleged defects in Lin's demonstrations are then argued to support the conclusion that Lin's recombinant EPO is the same as prior art urinary EPO and is therefore not novel. Finally, coming full circle, Fritsch et al argue that since Lin's recombinant EPO is the same as the prior art EPO, Lin's application is defective due its failure to enable a product that is different from the prior art EPO!

Even more remarkable than the twisted logic of those arguments is the fact that they are propounded without one shred of support by way of an actual test by

Fritsch et al or even a declaration by a Fritsch et al witness which would support the conclusion that Lin's Example 10 product is identical to the prior art natural product.

Fritsch et al argue manifest error in the early denial of their Motions I and II which they claim established 11 "facts" (FB 34, 35), all of which the EIC considered. The conspicuously missing "fact" is that the carbohydrate composition of the prior art urinary EPO is the same as the carbohydrate composition of Lin's recombinant EPO as exemplified by his Example 10 expression product of the human EPO gene in Chinese Hamster Ovary (CHO) cells. Fritsch et al do not list this "fact" becaues they cannot. In any event, the complete response to the eleven Fritsch et al "facts" is as follows:

1. Yes, the Miyake et al publication was cited as a 102(b) reference against the involved Lin claims. The rejection was withdrawn.
2. Yes, Lin submitted a declaration by Dr. Strickland under Section 132 and the 102(b) rejection was withdrawn upon directing the Examiner's attention to differences in carbohydrate composition between the Lin Example 10 product and the prior art product.
3. No, "average carbohydrate composition" does not refer just to differences in proportions of monosaccharide components of EPO. The carbohydrate composition of a glycoprotein also includes the structure, linkages and relative proportions of oligosaccharides (LR 98).

4. No. Support for the differences is found in the specification references to Western blot/SDS-PAGE analysis at page 64. It is also supported by Dr. Strickland's declaration and especially his isoelectric focusing comparisons of the two products. Significantly, it is supported by the fact, acknowledged by Fritsch et al's expert, Dr. Cumming, that CHO cells cannot form the same carbohydrate linkages in glycosylating recombinant human EPO that human cells can. (FR 3896-3900; LCX 27)

5. No. The Western blot/SDS-PAGE data in the application shows a quantitative difference between the molecules as reflected by differences in the molecular weight and corresponding differences in mobility in the gel.

6. Yes, the hexose values in Example 10 are now seen as probably erroneous. They were believed to be correct by Dr. Lin when Dr. Yu reported them to him (LR 94) and have never been relied on during prosecution to support the assertion of differences in carbohydrate composition.

7. Yes, such statements were made, but they do not constitute opinions that the carbohydrate portions of the molecules are the same.

8. Yes, but so what? Different batches of urinary EPO vary in carbohydrate composition, too.

9. Yes, but only if one ignores the origins of the data and is careful never to compare how the data was generated.

10. No, the comparative isoelectric focusing experiments are not inappropriate. They are, however, like all other experimental procedures, subject to wholly speculative criticism by other who have never performed them.

11. No, again. Strickland's isoelectric focusing experiments demonstrate differences in the quantity of charged molecules for the two different EPOs.

It is well recognized that u-EPO and r-EPO although structurally similar, are different because of differences in the carbohydrate moiety. See Takeuchi et al., J. Bio. Chem., Vol. 263, No. 8, 3657-3663, March 15, 1988 (LR 149Y)[15] and Sasaki et al, J. Bio. Chem., Vol. 262, No. 25, 12059-12076, September 5, 1987[16] which were considered by the Primary Examiner during examination of the Lin application. There has been no showing or representation by Fritsch et al that the average carbohydrate composition of urinary EPO and Lin's CHO cell-expressed recombinant EPO of Example 10 are in fact identical in all aspects. The most Fritsch et al can say is that these products have carbohydrate compositions which are "similar" or even "very similar". This does not meet the statutory standard.

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[15] Publication No. 12, Notice IV by Lin under 37 CFR 1.682(a).

[16] Publication No. 13, Notice IV by Lin under 37 CFR 1.682(a).

Fritsch et al have referred to Amgen's PLA as filed with the FDA as showing there is no "significant" difference in the carbohydrate moieties of urinary EPO and recombinant EPO. The Fritsch et al motion also referred to publications by Amgen scientists wherein the two EPOs are said to be "very similar" (Egrie et al) or "essentially the same" (Browne et al). This is a misrepresentation because the publications do not say that the two EPOs are identical or, in the language of the count, that their average carbohydrate compositions are the same. Dr. Lin was a co-author of these papers and he noted specifically that purified recombinant human EPO and urinary EPO are not the same (LR 95). Egrie noted this also (LR 69) and so did Browne (LR 32).

Fritsch et al's reliance on statements made by employees of Lin's assignee needs to be kept in the proper context. Statements made regarding the fact that a) the biological property (i.e. ability to cause bone marrow cells to increase production of reticulocytes and red blood cells), or b) immunological property (i.e. lack of production of antibodies in vivo) of recombinant EPO and urinary EPO are indistinguishable based on the criteria used to evaluate the materials are not relevant to the 35 USC §102 issue as to the differences between r-EPO and u-EPO in carbohydrate composition. Although r-EPO and u-EPO may perform some of the same functions in the same way structurally, in terms of carbohydrate composition, the two types are different.

The Fritsch et al motion is based on Section 102(b), not 103. To bar patentability, Section 102 requires identity of subject matter, not a generalized

similarity. To overcome a rejection under § 102, one need only show that the claimed subject matter is different. Lin has clearly shown this. Fritsch et al has submitted no evidence to show that urinary EPO and Lin's Example 10 EPO are identical, in particular with respect to carbohydrate. The question of patentability over Miyake under Section 102 was considered in depth with the Primary Examiner during the prosecution of the Lin application here at issue and the Examiner correctly decided that Lin's claims 76-83 were patentable over Miyake, that is, that allowance of the claim would not operate to deprive the public of access to anything in the prior art. Thus, in the Official Action of January 24, 1989 (which was issued in response to the first response submitted by Lin in the prosecution of Lin's application here involved), it was acknowledged by the PTO that:

> *the declaration under 37 CFR 1.132 filed 12/9/88 is sufficient to overcome the rejection of claims 41, 55-57 and 61-66 based upon 53 USC 102/103 ... .*

Of interest is the fact that the Examiner in this same Office Action recognized that Takeuchi and Sasaki teach recombinant r-EPO having differences in carbohydrate composition from uEPO.

Evidence that the non-naturally occurring r-EPO of Lin's claims is different in carbohydrate composition from the naturally occurring urinary material can be found in:

(a) the Declaration of Thomas Wayne Strickland dated November 30, 1988 (LR 133-148), which shows the more acidic nature of the u-EPO isoforms compared to the r-HuEPO isoforms is due to differences in carbohydrate composition (see ¶ 11 thereof, LR 147);

(b) the Declaration of Thomas W. Strickland (LR 96-106), specifically ¶¶ 6 and 17) (LR 98-105); and

(c) The papers of Takeuchi et al and Sasaki et al noted, supra.

Any error in the Lin application regarding an assay for hexose content does not change the fact that the recombinant EPO of the claims is different from Miyake's urinary EPO. Lin believed the hexose value recited in his application was correct (LR 94) but, in any case, unrebutted testimony by Lin witnesses (Egrie, Browne, Strickland) confirmed that CHO cell-expressed recombinant human EPO had a different average carbohydrate composition from urinary human EPO (LR 30-31, 69, 70, 95, 105). Whatever Dr. Yu's error might have been, it did not operate to change the carbohydrate composition of Dr. Lin's Example 10 EPO into that of urinary EPO.

Fritsch alleges that to secure FDA approval, Lin's assignee argued that recombinant EPO is the same as urinary EPO, but that before the PTO, Amgen argued that they are different. This is a gross mischaracterization of the actual position. There is clearly nothing inconsistent with the facts as represented by Lin's submissions to the FDA and PTO (see LR 102-104). The comparative data based on isoelectric focusing presented to the PTO in the Strickland declaration confirming differences between the carbohydrate composition of recombinant EPO and urinary EPO was in fact data that was submitted to the FDA for the very same purpose (LR 104, paragraph 15). Even the portion of the Product License Application (PLA) submitted to the FDA by Amgen (Exhibit 4 to the Fritsch motions) clearly evidences the differences in carbohydrate composition (see, for example, pages 0765, 0791, 0796, 0799, 0898, 0905 and 0906 of Fritsch et al motion Exhibit 4, as well as LR 102-103, ¶¶ 13 and 14). Further, the

Patent Office was well aware of similarities and differences between recombinant EPO and urinary EPO. As noted, the Examiner originally rejected the claims of the Lin application under 35 USC § 102(b) as being unpatentable in view of literature on the natural material (Miyake et al). It was from this starting point that the Examiner determined that uEPO and rEPO are different under 35 USC 102(b) in view of the Strickland declaration and the art recognized differences between recombinant and urinary derived EPO. Once Lin demonstrated by experimental evidence that the products were different, their similarities were of no consequence to patentability under Section 102. Although different in carbohydrate composition, recombinant EPO and urinary EPO have the same in vivo biological property of increasing production of reticulocytes and red blood cells.

Fritsch et al submitted a Cumming Declaration with their motions, which declaration purportedly showed that Strickland's use of isoelectric focusing experiments to evaluate enzymatically treated urinary and recombinant erythropoietin is inappropriate to assess carbohydrate compositions. However, this argument is completely unfounded and unsupportable. (See LR 99-100, ¶¶ 8, 9 and 10). Dr. Cumming focused on only a portion of the work relied upon by Dr. Strickland, and then attacked the results as providing unsuitable support for Dr. Strickland's conclusions. Had Dr. Cumming accounted for all of the work, he could not have criticized the conclusions reached by Dr. Strickland.

Fritsch et al have also relied on further testimony by Cumming in response to Strickland's declaration testimony. Cumming argues with the basis for

Strickland's determinations regarding the difference in average carbohydrate composition between the recombinant human EPO of Lin's claims and urinary human EPO. However, it is significant that Cumming presents no evidence of his own to confirm his position that urinary EPO is identical in its carbohydrate composition to Lin's Example 10 EPO. He acknowledged that he had not done any hands-on work or supervised any concerning urinary derived human EPO and had published nothing regarding analysis of the carbohydrates of recombinant EPO (FR 3884-3885). Dr. Cumming's hyperbole to the effect that isoelectric focusing is "incapable" of indicating differences in carbohydrate is rank speculation. He has no evidence that the materials used by Dr. Strickland were deamidated, or sulfated or otherwise altered in chemical composition such that Dr. Strickland's data could be shown to be incorrect.

Fritsch et al's desparation in its inability to refute Dr. Strickland's straightforward conclusion that carbohydrate differences are established by charge differences during isoelectric focusing is manifested at FB 46-47 where it characterizes minutiae as "important" new evidence. Briefly, Dr. Strickland's Coomasie blue stained gels, as photographed and submitted to the PTO, were later re-stained with silver which expectedly made certain faint bands more prominent despite the fact that they represented minute protein concentrations. LR 687 (Strickland) Characterizing the faint bands as "essentially invisible" (whatever that means), Fritsch et al argue that this is "new evidence" of a basis for ignoring Dr. Strickland's results. The purpose of the procedure was to find out how urinary EPO molecules, on average, compared in their charge characteristics to Lin's recombinant EPO molecules. As Dr. Strickland testified,

Coomasie blue stain more accurately represented the quantities of protein moving on the gel.

Finally, it is noted that the Fritsch et al argument really bypasses the fundamental point, namely, Lin's CHO cell-expressed recombinant human EPO as obtained in Example 10, shows a different average carbohydrate composition from a pooled source of human urinary EPO. Fritsch et al have not presented any evidence to show that such product was not obtained by Lin. All they have done is speculate as to the basis for Lin's determination that his product had a different average carbohydrate composition. Speculation is not evidence. It has not been shown that Lin's Example 10 product does not meet the requirements of the Lin claims or the count. Fritsch et al have not, therefore, sustained their burden.

For all of the above reasons, it is submitted that the Primary Examiner correctly found that Lin's claims are not anticipated by Miyake and that the EIC correctly denied the Fritsch et al motion. That decision should be affirmed.

(d) Lin's Claims Are Enabled

Fritsch's non-enablement position (FB 49) is based on the same argument as urged with respect to the Section 102(b) motion, i.e. that Lin has not shown there is a difference between the carbohydrate composition of human urinary EPO and his recombinant EPO. Thus, Fritsch's enablement position falls for the same reason as his Section 102 argument.

The CHO-expressed recombinant product obtained by Lin as exemplified in his disclosure (for instance, Example 10) meets the claim limitation to the effect that the recombinant product is different in terms of average carbohydrate composition from naturally-occurring EPO (LR 105). Clearly, the limitation as to carbohydrate composition is enabled by Lin's disclosure. Fritsch et al have presented no evidence by way of repeating Lin's Example 10 to show that this example does not give a product as claimed. Fritsch et al have not met their burden of proof and have not shown manifest error in the motion decision. Accordingly, Lin submits that the denial of the Fritsch et al motions was correct and should be affirmed.

(e) Lin Is Entitled to the Benefit of His Earlier Filings

The Fritsch et al motion regarding Lin's priority benefit was properly denied by the EIC and Fritsch et al have provided no reason for changing the earlier decision. Fritsch et al's only argument against the adequacy of Lin's earlier applications is that these suffer from the same deficiency as Lin's application here involved and the immediate parent filed November 30, 1984. However, since these two applications are adequate for the reasons noted in the preceding section, Lin's other earlier applications should be adequate for the same reasons.

Support for claim language does not require that the exact words be used. Support can be expressed differently or it can be inherent in a party's disclosure. Thus, while it is true that the specific claim language "average carbohydrate composition" was not included in the earlier filed Lin applications, all of the Lin applications are fully enabling for the preparation of a non-naturally occurring

polypeptide as claimed including the feature of "having an average carbohydrate composition which differs from that of naturally occurring erythropoietin". See LR 104 (¶ 16).

As the EIC noted in his decision on motions (Paper No. 42, pages 3-4):

> [T]he *Primary Examiner determined at the outset of the interference that Lin is entitled to the benefit of his earlier U.S. applications. Therefore, it is presumed that the invention in issue is adequately disclosed in those applications as required by 35 USC 120 and 35 USC 112 and the burden of persuasion rests upon the party, here Fritsch, urging the contrary. Cf. Case v. CPC International, Inc., 730 F.2d 745, 221 USPQ 196 (Fed. Cir. 1984), cert. denied, ____ U.S. ____, 224 USPQ 736 (1984). Fritsch has not met that burden.*

Fritsch et al have not met their burden and the EIC's decision regarding the Fritsch et al Motion (listed as Motion 10 in the decision on motions) should be maintained. It is noted, however, that since Lin has established a reduction to practice prior to Fritsch's conception of the EPO gene, Lin's entitlement to his earlier filings really is a moot point.

(f) The Fritsch et al Motion to Correct Inventorship Should be Denied

With regard to the Fritsch argument that he is the sole inventor (FB 30-33), Lin submits that amendment of the inventorship of the Fritsch et al application and the Fritsch et al preliminary statement should not be permitted for the reasons noted in the Lin opposition to the Fritsch et al motion to correct, the Lin opposition being incorporated herein by reference. In brief, Fritsch et al have not shown that the

alleged misjoinder of the latecomers Hewick and Jacobs occurred through error and without deceptive intent. They also have not shown how the error occurred nor have they adequately demonstrated when the error was discovered or that they proceeded diligently when the error was discovered.

The Lin opposition to the Fritsch et al motion points out in detail how, prior to the Fritsch et al motion of correct, Fritsch et al attested that they were joint inventors of the subject matter disclosed and claimed in the Fritsch et al '258 and '688[17] applications at least ten times. Many of these attestations overlapped in time with arguments which were being advanced by Fritsch's assignee's trial counsel in the District Court litigation to the effect that Edward F. Fritsch alone ("Fritsch sole") was the inventor of this subject matter. Inventorship was discussed with trial counsel in a context from which it is clear that at least Dr. Fritsch considerd himself the sole inventor. See, FR 2787-2794, especially at 2790 and 2793. However, Fritsch et al took no action herein to correct inventorship until 10 months after the District Court decision. No newly discovered facts have been presented as forming the basis of this determination. No light is shed on how, in view of repeated analysis of the same facts by the originally named inventors and their counsel, there could have been so many "erroneous" declarations of joint inventorship. Instead, statements are now made to the effect that, until the motion to correct was filed, no lawyer or scientist possessed a sufficient understanding of the technology or the standards of inventorship to properly

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[17] The '258 application (Serial No. 693,258) is the subject of the motions to correct inventorship filed by Fritsch et al in Interference Nos. 102,096 and 102,097. The '688 application (Serial No. 824,688) is involved in the motion to correct filed in Interference No. 102,334.

determine who "invented" the subject matter of the counts at issue here and in the related interferences. Under such circumstances, correction of inventorship designations in the Fritsch et al applications should not be permitted, particularly when the proposed correction may be based on the erroneous assumption that there could be conception of the isolated EPO gene separate from its reduction to practice.

As for when the error was discovered, it is manifest that the "error" could have been, and should have been, discovered when at least one of the Fritsch et al. applications was filed or at the latest when the Rule 608(b) showing was filed. The Fritsch testimony on discussions with counsel concerning the work of his co-inventors for purposes of the 608(b) showing reveals that nothing new factually was provided to counsel for purposes of the motions for correction. Compare FR 2716-2721 with FR 2714-2715 and 2753-2759. The Fritsch et al. papers do not show that any new facts have been discovered to justify the change now requested. The Fritsch et al attorney must have been aware of the late arrival of Jacobs on the scene (1983) when he prepared the Rule 608(b) showing. This did not require any knowledge as to biotechnology. At least as of the date when the Rule 608(b) showing was prepared, the attorney had to know, or should have known, that the Fritsch et al. inventorship was wrong if the Fritsch et al. allegations as to dates of invention in the Rule 608(b) were considered reasonably based. Moreover, when the Fritsch et al attorney prepared the preliminary statement herein and in the other two interferences, he also prepared preliminary motions addressing complex issues of biotechnology and inventorship. Clearly, the attorney must have considered the Fritsch et al., "inventive

contribution" evidence said to be the basis for the present motion when the preliminary statements and motions were prepared and he also had to be familiar with the litigation proceedings and the issues there involved[18]. All of this knowledge on the attorney's part clearly negates the required diligence to correct inventorship at this stage.

For all of the above reasons, it is submitted that the Fritsch et al motion to correct inventorship and related motion to correct preliminary statement should be denied.

(g) Fritsch et al Claims 13, 17 and 28-31 Should Be Designated as Corresponding to the Count

During the motion period, Lin also filed a motion[19] (Paper No. 20) asking that Fritsch claims 17 and 28-31 be designated as corresponding to the count. The motion was denied because the Fritsch et al claims ultimately depend upon a claim (claim 3, 4 or 15) which was cancelled. The EIC took the position that, because of

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[18] Rule 11 of the Federal Rules of Civil procedure mandates inter alia that:

> "...The signature of an attorney or party constitutes a certificate by the signer that the signer has read the pleading, motion, or other paper; that to the best of the signer's knowledge, information, and belief formed after reasonable inquiry it is well grounded in fact and is warranted by existing law or a good faith argument for the extension, modification, or reversal of existing law, and that it is not interposed for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of litigation..." (emphasis supplied)

[19] Designated as Motion 1 in the EIC's decision on motions (Paper No. 42).

this, the scope of the claims were indeterminate and it, therefore, could not be concluded that they correspond to the count.

Lin submits that, notwithstanding the dependence of the indicated Fritsch et al claims, these should be designated as corresponding to the count since they are obviously drawn, along with Fritsch et al claim 13, to recombinant EPO which, regardless of the claim dependency, would not be patentable over the count at issue. Fritsch et al claim 8, which is identified as corresponding to the count, initially depended from claims 2-7 (i.e. its dependence included cancelled claims 3, 4 and 5) but this dependence was corrected pursuant to the EIC's decision. Fritsch et al claims 17 and 28-31 (as well as Fritsch et al claim 13) should be similarly treated so that all claims which are drawn to subject matter that does not distinguish patentably from the count are at issue. There is clearly no patentable difference between Fritsch et al claims 13, 17 and 28-31 on the one hand, and Fritsch et al claim 8 on the other. Hence, even with the dependency informality in the Fritsch et al claims, they should be included in these proceedings.[20]

IV. CONCLUSION

The Lin motion for judgment should be granted and priority should be awarded to Lin for the reasons indicated herein with a holding that Lin is entitled to his claims

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[20] It is unfortunate that the Fritsch et al claims to recombinant EPO (including claim 8) stood unexamined and non-elected. However, this should not preclude priority determination as to all claims the Fritsch application includes directed to recombinant EPO per se. This is essential to insure a full complete priority determination.

corresponding to the count and that Fritsch et al are not entitled to their claim corresponding to the count.

The Fritsch et al motion to correct inventorship should be denied.

Respectfully submitted,

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