Attachment Part 2 of 4

Dr. Lowe Concluded That The Asserted Claims of the '868 Patent Are Obvious in Light of The '008 Patent Claims and the Prior Art

- Dr. Lowe testified that claim 1 of the '868 patent "basically says take the cells that were claimed in the '008 patent and grow them, let them do what they normally do. Let them make the protein that the claims in the '008 patent says they're going to make." Tr. at 318.

- In Dr. Lowe's opinion, the only difference between claim 25 of the '008 patent -- which claims cells and using them "in a way that they would normally do to make the protein" – and claim 1 of the '868 patent is that the latter "basically says take the cell and grow them." Tr. at 319

- Dr. Lowe testified that it was well known in the prior art how to grow cells. TX 10, the Maniatis Manual (1982), which is cited on the face of the '868 patent, provides a recipe for recombinant technology procedures and techniques. Tr. at 319.

- Dr. Lowe concluded that "the claims of the '008 patent render obvious the claims of the '868 patent." Tr. at 319.

- Claim 2 of '868—which specifies the use of CHO cells—is also obvious over the '008 patent claims, which already claim the use of CHO cells. Tr at 319.

Dr. Lowe Concluded That The Asserted Claims of the '698 Patent Are Obvious in Light of The '008 Patent Claims and the Prior Art

- Dr Lowe's testimony establishes that claims 6-9 of the '698 patent contain the identical elements set forth in the '008 patent and obvious additions well known to those of skill in the art, such as amplified marker gene DNA and Dihydrofolate reductase (DHFR) marker gene DNA. Tr. at 320-324

- Dr. Lowe testified that the mammalian host cells of '008 patent claim 25 are a subset of the "vertebrate cells" in claim 6 of the '698 patent. Tr. at 320.

- Dr. Lowe testified that the host cells of claim 25 are "transformed or transfected" with "a DNA sequence" essentially encoding erythropoietin, and that the same element appears in '698 patent claim 6 in the phrase "DNA encoding the mature erythropoietin amino acid sequence of FIG. 6." Tr. at 321.

- Dr. Lowe testified that the provision in the '008 patent which specifies that the DNA encoding erythropoietin does so "in a way that allows it to possess the biological property of causing red blood cell formation" appears also in claim 6 of the '698 patent in the first sentence: "erythropoietin polypeptide having the in vivo biological property of causing bone marrow cells to increase production of reticulocytes and red blood cells." Tr. at 321-22.

Dr. Lowe Concluded That The Asserted Claims of the '698 Patent Are Obvious in Light of The '008 Patent Claims and the Prior Art

- Dr. Lowe testified that the element of claim 6 "growing under suitable nutrient conditions" corresponds to the claim language in '008 claims 25 (incorporated from claim 23) "in a manner allowing." Tr. at 322.

- According to Dr. Lowe "to express" in those claims means: "to do what the cell does, which is to make the protein. … to release it from the cells." The reference to "suitable nutrient conditions" means "doing what everyone in the prior art was doing at the time ,,, growing the cells the way that many, many people had grown cells for many years before this time." Tr. at 322.

- "Isolating" the protein from the cells as called for in claim 6 of the '698 patent was well known in the art at the time. Tr. at 323.

- The term "amplified" in claim 6 refers to "amplification of transfected genes [which] was a standard approach used by many companies and scientists to amplify transfected genes for the purpose of increasing a level of expression of the protein." Tr. at 323-24. Kauffman and Sharp paper, TRX 2025.

Dr. Lowe Concluded That The Asserted Claims of the '698 Patent Are Obvious in Light of The '008 Patent Claims and the Prior Art

- According to Dr. Lowe, the element of "amplified marker gene DNA in claim 7 of the '698 patent taught by the prior art, including, for example, the tPA patent, TX 2030, the Kaufman and Sharp TX 2025, and the interferon beta and gamma patents, TX 2026 and TX 2027, "all dating prior to 1983." Tr. at 325.

- According to Dr. Lowe, the amplified marker gene DNA DHFR in claim 8 of the '698 patent is taught by the prior art, including, for example, the tPA patent, TX 2030, the Kaufman and Sharp TX 2025, and the interferon beta and gamma patents, TX 2026 and TX 2027, "all dating prior to 1983." Tr. at 325.

- According to Dr. Lowe, claim 9 of the '698 patent merely specifies that the vertebrate cells of claim 6 are restricted to "mammalian cells,' which are, however, already specified in the '008 patent. Tr. at 324-27.

Count for Interference 102,096

A purified and isolated DNA sequence consisting essentially of a DNA sequence encoding human erythropoeiten.

'008 Patent Claims

2. A purified and isolated DNA sequence consisting essentially of a DNA sequence encoding human erythropoietin.

4. A procaryotic or eucaryotic host cell transformed or transfected with a DNA sequence according to claim 1,2, or 3 in a manner allowing the host cell to express erythropoietin.

7. A purified and isolated DNA sequence consisting essentially of a DNA sequence encoding a polypeptide having an amino acid sequence sufficiently duplicative of that of erythropoietin to allow possession of the biological property of causing bone marrow cells to increase production of reticulocytes and red blood cells, and to increase hemoglobin synthesis or iron uptake.

24. A transformed or transfected host cell according to claim 23 which host cell is capable of glycosolating said polypeptide.

Count for 102,097

A process for the preparation of an in vivo biologically active glycosylated polypeptide comprising the steps of:

(a) growing a mammalian host cell which is capable of effecting post-translational glycosylation of polypeptides expressed therein and which is transformed or transfected with an isolated DNA sequence encoding a polypeptide having a primary structural conformation sufficiently duplicative of that of naturally occurring human erythropoietin to allow possession of the in vivo biological property of causing bone marrow cells to increase production of reticulocytes and red blood cells, or the progeny thereof, under nutrient conditions suitable to allow, in sequence,

(i) transcription within said host cell of said DNA to mRNA in the sequence of transcription reactions directed by the nucleotide sequence of said DNA;

(ii) translation within said host cell of said mRNA to a polypeptide in the sequence of translation reactions directed by the nucleotide sequence of said transcribed mRNA;

(iii) glycosylation within said host cell of said polypeptide in a pattern directed by the amino acid sequence of said translated polypeptide and sufficiently duplicative of the pattern of glycosylation of naturally occurring human erythropoietin to allow possession by the translated glycosylated polypeptide product of the in vivo biological property of causing bone marrow cells to increase production of reticulocytes and red blood cells; and

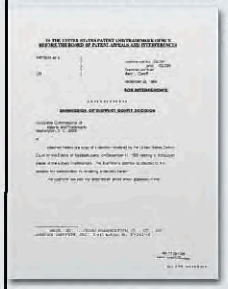
(b) isolating the glycosylated polypeptide so produced.

Timeline of Events in 102,007 Interference

Aug. 29, 1989

Oppositions by the Party Lin- **"two counts are not to the 'same invention.'"**

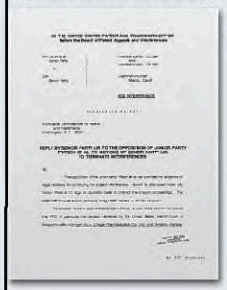
Dec. 20, 1989



TRX QH2

Amgen submits the District Court decision to the Patent Board

Jan. 25, 1990

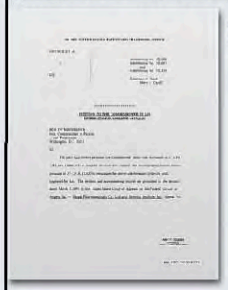


TRX SP

Amgen submits Motion To Terminate Interferences based on District Court decision - this time, Amgen says the counts are "necessarily and inherently" the same

TRX SP

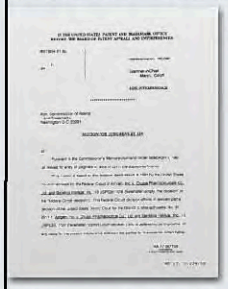
March 22, 1991



TRX QIA

Fed. Cir. affirms decision - Amgen submits Petition to Commissioner to terminate interference

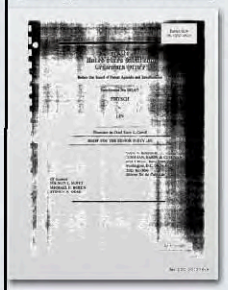
April 25, 1991



TRX QIB

Amgen files Motion For Judgment based on the Fed. Cir. Decision - adopts **"same invention"** argument to its advantage

July 29, 1991



TRX GUK

Amgen files Final Brief -again adopts **"same invention"** argument to its advantage

1989 | 1990 | 1991

Reply by Senior Party Lin to Terminate Interferences 1/25/90 *(TRX SP)*

IN THE UNITED STATES PATENT AND TRAD
Before the Board of Patent Appeals and

FRITSCH et al.
Junior Party

v.

LIN
Senior Party

Interference N
and
Interference N

Examiner-in-C
Marc L.

BOX INTERFE

Honorable Commissioner of Patents
and Trademarks
Washington, D. C. 20231

REPLY BY SENIOR PARTY LIN TO THE OPPOSITIC
FRITSCH ET AL. TO MOTIONS OF SENIO
TO TERMINATE INTERFERENCES

Sir:

The opposition of the junior party Fritsch et al ha

legal rationale for continuing the subject interferences. As w

below, there is no legal or equitable basis to protract the p

Examiner-in-Chief should promptly bring these matters to a fi

Termination of the subject interferences is proper in viev

the PTO, in particular the decision rendered by the Unite

Massachusetts in Amgen Inc. v. Chugai Pharmaceutical Co., L

It is submitted that the Federal Court Decision is fully dispositive of the real issues in the subject interferences. The count of Interference 102,096 is the same as claim 2 of the Lin '008 patent which was upheld in the Court. Clearly Lin is entitled to priority on the record as to this matter. The same is true with regard to the count of Interference 102,097 since, if Lin was first to invent a host cell containing a DNA sequence in a manner allowing the host cell to express rEPO as determined by the Court, he is of necessity the first to invent the process of making rEPO using such the host cell (see the count of Interference 102,097).

Reply at 3 (AM-ITC 00328343)

D. The District Court Decision Should be Controlling in Interference No. 102,097

Fritsch errs in saying that the District Court case did not involve the count (process for making EPO) of Interference No. 102,097. The Court assessed the priority evidence regarding the DNA sequence used to make EPO and the reduction to practice of the sequence necessarily and inherently includes the use of that sequence to make EPO according to the count of Interference No. 102,097.

Reply at 9 (AM-ITC 00328349)

Petition to the Commissioner by Lin 3/22/01 (TRX QIA)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

FRITSCH ET AL.

v.

LIN

Interference No. 102,096
Interference No. 102,097
and
Interference No. 102,334

.....

PETITION TO T
UNDER 37 C

BOX INTERFERENCE
Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

The party Lin hereby petitions
1.183 and 1.644(a)(3) to suspend the
pursuant to 37 C.F.R. §1.635 to termi
judgment for Lin. This petition and
dated March 5, 1991 by the United St
Amgen, Inc. v. Chugai Pharmaceutica

AM 17 002688

AM-ITC 00329737

As will be evident, the interferences are intimately related; so much so, that common papers are filed in the proceedings and the presentation of evidence has been consolidated. The same disclosure for each party is involved in all three interferences although Lin's '008 patent is involved in Interference No. 102,096 while continuation applications thereof are in Interference No. 102,097 and 102,334. The same Fritsch et al application is involved in all three interferences and it is noted that counsel for Fritsch et al in urging the combination of Interference Nos. 102,096 and 102,097, has characterized these interferences as "different manifestations of the same invention".

Petition at 4 (AM-ITC 00329740)