EXHIBIT 32

IN THE

UNITED STATES PATENT and TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

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

FRITSCH

v.

LIN

Examiner-in-Chief Marc L. Caroff

PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW FOR THE PARTY FRITSCH

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messenger RNA which means tissue or cells that contain the messenger RNA of interest. FR 1371-1372 (Fritsch).

I-18. A genomic library is used when there is no known tissue source for the gene in question. A genomic library will have a very high probability of containing the desired gene. When Dr. Fritsch constructed the Maniatis library, he performed calculations to determine the likelihood that a gene would be present. The probability that a given gene including the EPO gene would be within the library is greater than 99%. FR 1373-1375 (Fritsch).

I-19. Once a DNA library (whether gDNA or cDNA) is obtained, scientists can use "probes" consisting of a sequence of nucleotides to isolate the gene of interest. To probe or "screen" a library, the DNA in a library must first be denatured to separate the double helix into two single strands so that a probe may bind with a complementary sequence. FR 7251-52 (Wall). If the nucleotides selected for the probe and the gene of interest are complementary, the probe will "hybridize" (bond) to that gene. By radioactively labeling the probe, the probe and the gene bound to it can be located and extracted from the DNA library. Tr. Vol. 25, 97 (Fritsch).

I-20. One type of probe is a single long probe based on a known nucleotide sequence which has a perfect match with the sequence of the gene of interest. FR 1400 (Fritsch); Tr. Vol. 25, 75-76 (Fritsch). This type of probe can be made when precise

II-6. Dr. Fritsch then considered the issues he had discussed with Dr. Maniatis and the approaches that could be taken to the problems identified. As a result, he decided it was possible to directly screen a genomic (rather than a cDNA) library. FR 1407 (Fritsch). Dr. Fritsch's approach was to screen the genomic library with two fully degenerate oligonucleotide probes. FR 1407 (Fritsch); FR 6547 (Maniatis). Based on a mathematical formula for computing the number of clones which might hybridize to two sets of fully degenerate probes, Dr. Fritsch concluded that his approach would have a high probability of success. FR 1407-1408 (Fritsch).

II-7. Dr. Fritsch made these computations in November or December 1981, prior to his formally signing his acceptance letter. FR 1408 (Fritsch). Dr. Fritsch's calculations were based on the approach he wanted to take (i.e., the use of fully degenerate, relatively short oligonucleotides) and his knowledge of the degeneracy of the genetic code. He made some assumptions about the probe length and degeneracy and then carried out probalistic type calculations that allowed him to determine that his approach was entirely feasible and would succeed. FR 1408 (Fritsch).

II-8. Dr. Fritsch then spoke again to Dr. Maniatis in December, 1981, and proposed using two distinct fully degenerate probes to directly screen a genomic library to obtain the EPO gene. FR 6547 (Maniatis); FR 1407 (Fritsch). Dr. Fritsch also described his computations to Dr. Maniatis and told Dr. Maniatis that the calculations indicated that the use of two sets of distinct, fully

degenerate probes would result in a small number of false positives. FR 6547 (Maniatis).

II-9. Dr. Fritsch did not limit his approach to any particular area of amino acid sequence for EPO. Tr. Vol. 25, 136 (Fritsch). From the discussions between Dr. Fritsch and Dr. Maniatis, it was clear that Dr. Fritsch's oligonucleotide probes could be derived from several different regions of the EPO protein. FR 6547-48 (Maniatis).

II-10. Dr. Fritsch's computations, the high probability that the EPO gene would be present in the genomic library, and his experience in screening genomic libraries, made Dr. Fritsch confident that his approach would succeed (assuming the availability of good sequence information), and he expressed this confidence to Dr. Maniatis. FR 1407, 1410 (Fritsch); FR 6549 (Maniatis). Dr. Fritsch told Dr. Maniatis that using this approach "there was a high likelihood that we would be able to pick out the EPO gene in the presence of either no other clones or a very small number of other clones and we would, therefore, be able to identify the correct one." Tr. Vol. 25, 136 (Fritsch). During the entire period from 1982 through 1984, Dr. Fritsch expressed confidence and optimism in his cloning approach. FR 6549 (Maniatis), 3499-3500 (Shoemaker).

II-11. At the time of his conversations with Dr. Maniatis, Dr. Fritsch was not aware of anyone who had applied the probing strategy that he had formulated to a genomic DNA library. FR 1409 (Fritsch). Dr. Fritsch believed his concept to be novel

9. Edward Fritsch is the sole inventor of the subject matter of his application claims corresponding to the '096, '097 and '334 interference counts.

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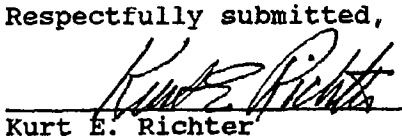
Respectfully submitted,



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