Keywords: **Inequitable conduct; breaching the duty to disclose; patent infringement; materiality and intent; but-for material**

General: Inequitable conduct based on failure to disclose material references and litigation misconduct

Regeneron Pharmaceuticals, Inc. v. Merus N.V. (Fed. Cir. 2017)
Decided July 27, 2017

I. Facts

Regeneron Pharmaceuticals, Inc. ("Regeneron") owns a family of applications that originated in December 2000. The patent in discussion, U.S. Patent No. 8,502,018 ("'018 patent"), issued in August 2013 from this family of applications. The '018 patent generally relates to using large DNA vectors to target and modify endogenous genes and chromosomal loci in eukaryotic cells. Specifically, the '018 patent builds off the idea that mouse DNA coding for antibodies can be modified in various ways by using human DNA.[1] One practical use of this technology is that users may target and modify specific genes in mice so that the mice develop antibodies that can be used by humans.

In March 2014, Regeneron filed suit in the Southern District of New York accusing Merus N.V. ("Merus") of infringing the '018 patent. The district court heard argument and expert testimony on claim construction and issued an opinion construing various terms. In response, Merus asserted a counterclaim of unenforceability of the '018 patent due to inequitable conduct.[2] Specifically, Merus argued that Regeneron's patent prosecutors withheld four references (the "withheld references") from the USPTO during prosecution of '018 patent. According to Merus, these references were cited in a third-party submission in related U.S. patent prosecution and in European opposition briefs, were but-for material to patentability, and were withheld by Regeneron with the specific intent to deceive the USPTO. Based on the prosecution history, there was no dispute that Regeneron knew of the withheld references during prosecution of the '018 patent. However, Regeneron argued that, under the broadest reasonable interpretation ("BRI"), claim 1 is limited to reverse chimeric antibodies[1.iv] that are later modified to insert a human constant region, and the withheld references are not but-for material references since, in contrast to the claim construction proffered by Regeneron, the references deal with chimeric antibodies,[1.i] humanized antibodies,[1.ii] or fully human antibodies.[1.iii] As a result, Regeneron argued that the references were not but-for material, that they were cumulative of references the USPTO actually relied on during prosecution, and that Regeneron did not have any specific intent to deceive the USPTO.

The district court issued lengthy opinion detailing the materiality of the withheld references, but never held a second trial on Regeneron's specific intent to deceive the USPTO, and instead, the court exhaustively detailed Regeneron's discovery misconduct throughout litigation and sanctioned Regeneron by drawing an adverse inference of specific intent to deceive the USPTO. The district court in particular notes Regeneron's repeated violations of the district court's discovery orders and improper secreting of relevant and non-privileged documents. Based on this misconduct, the district court concluded that Regeneron's agents failed to disclose the withheld references with specific intent to deceive the USPTO and, accordingly, found that Regeneron had committed inequitable conduct, and held the '018 patent unenforceable. Regeneron timely appeal the district court's claim construction order and final judgment of inequitable conduct.

For context, with regard to the prosecution history of the '018 patent, as originally filed, claim 1 of the '018 patent recited "[a] genetically modified mouse, comprising in its germline human rearranged variable gene region segments inserted at a mouse immunoglobulin locus[3]." Days before the USPTO issued a notice of allowance, a third-party filed a submission in the parent application of the '018 patent describing three references, two of which were co-authored by a member of the scientific advisory board of Regeneron.

II. Issues

A. Did the district court err in finding that claim 1 was not limited to reverse chimeric antibodies,[1] as argued by Regeneron?

B. Did the district court correctly hold that the withheld references were but-for material to the claimed subject matter?

C. Did the district court correctly hold that there was specific intent by Regeneron to deceive the USPTO in failing to disclose the withheld references?

D. Did Regeneron commit inequitable conduct by breaching its disclosure duty by failing to disclose the withheld references, thereby making the '018 patent unenforceable?

III. Discussion

A. No, the court agreed with the holding of the district court that claim 1 is not limited to disclosing reverse chimeric antibodies[1.iv] (e.g., human variable regions and mouse constant regions) because, by reciting "comprising," claim 1 is open ended and may be interpreted under the BRI to include additional antibodies, such as chimeric antibodies,[1.i] humanized antibodies,[1.ii] fully human antibodies,[1.iii] etc. (e.g., human constant regions, human variable regions, mouse constant regions, mouse variable regions, or some combination thereof). The court noted that a germline that "comprises" human variable region gene segments may very well also include human constant gene segments. Thus, the "customary and ordinary" meaning of the language in claim 1 does not limit the claim to a reverse chimeric mouse.[1.iv]

B. Yes, court found that the withheld references are but-for material to the claimed subject matter of the '018 patent. The court examined each of the four withheld references and determined that the references both individually and in combination teach one of skill in the art to genetically modify mice by inserting exogenous, including human, variable region gene segments endogenously into a mouse immunoglobulin locus. The court additionally found that, particularly the third and fourth of the withheld references, also provide the motivation to combine the withheld references to develop the claimed genetically modified mouse. The court additionally disagreed with the position of Regeneron that the withheld references were merely cumulative of the art cited by the Examiner during prosecution. Accordingly, based on these findings, the court held that the district court did not err in finding each of the withheld references but-for material to patentability.

C. Yes. The court noted that Regeneron did not argue the facts underlying the sanctioning due to its litigation misconduct, but rather the sanctioning itself. The court referenced Regeneron's refusal to disclose its infringement contentions (e.g., providing an element-by-element identity between the accused product and the '018 patent), its failure to produce documents relating to conception and reduction to practice of the '018 patent, and its failure to first propose claim constructions as required under the district court's local patent rules. Regeneron also disclosed a chart and memo prepared by outside counsel regarding the withheld references but was found to have failed to fully supply all documents and communications referring or relating in any way to the chart and memo as ordered by the district court, despite multiple orders issuing from the district court.

Testimonies by counsel who worked on the prosecution of the '018 patent (submitted under local rules) included statements that were found to relate to materials not submitted under the order to fully supply all documents and communications referring or relating in any way to the chart, and instead were listed on the privilege log of Regeneron. *In camera* review of a subset of the many thousands of documents on Regeneron's privilege log showed documents in which privilege had been waived through the submitted testimonies, documents in which privilege had been waived through the submission of the chart and memo, and non-privileged documents that should have been produced.

The district concluded that it would have been unfair to Merus to reopen discovery on the eve of trial and would impose an unfair burden on the district court. Instead, the district court found it appropriate to draw an adverse inference against Regeneron from the undisclosed documents, which included a finding of specific intent to deceive the USPTO regarding the withheld references.

The court affirmed the district court's decision to sanction Regeneron by drawing an adverse inference of specific intent, citing relevant circuit law in *Residential Funding*, which states that "[D]iscovery sanctions, including an adverse inference instruction, may be imposed where a party has breached a discovery obligation not only though bad faith or gross negligence, but also through ordinary negligence." The court distinguished the present facts from the Federal Circuit case of *Aptix*, which held that litigation misconduct under the doctrine of unclean hands does not provide a suitable basis to declare a patent unenforceable as a penalty because the relief for unclean hands targets specifically the misconduct, without reference to the property right that is subject of the litigation. Under the current facts, Regeneron is accused of both post-prosecution misconduct and inequitable conduct during prosecution and the litigation misconduct obfuscated its prosecution misconduct and only after Merus proved the remaining elements of inequitable conduct was the patent declared unenforceable.

IV. Conclusion

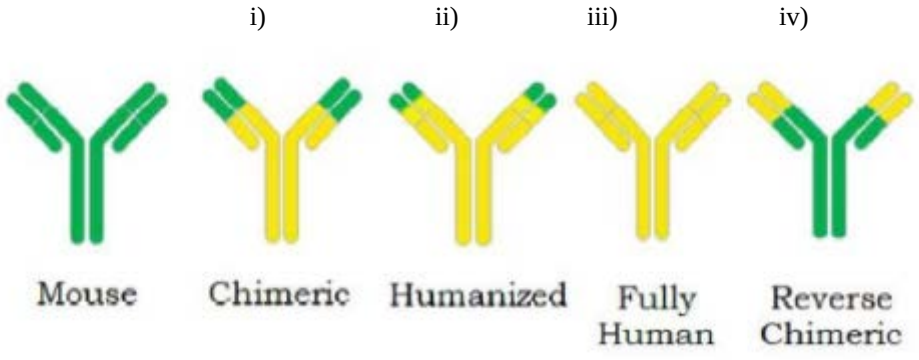
Inequitable conduct is an equitable defense to patent infringement that, if proved, bars enforcement of a patent. Proving inequitable conduct requires proof of but-for material and intent. However, but-for materiality and specific intent, based on the patentee commiting litigation misconduct with respect to underlying prosecution misconduct, can meet the requirements for inequitable conduct to render a patent unenforceable.

V. Dissent

In a dissent, Judge Newman argues that intent cannot be inferred, and has to be proven, if used to invalidate a patent based on inequitable conduct. Merely, inferring intent during the prosecution of the patent, based on litigation misconduct is not a substitute for proving intent in a court of law, with evidence, examinations, cross-examinations, etc. Judge Newman also analyzed the withheld references and determined the references were not but-for material and were merely cumulative and also noted that a corresponding EP application issued in view of the withheld references.

VI. Endnotes

1. Mouse DNA coding for antibodies can be modified using human DNA in various different ways.
   i) For example, mouse DNA can be manipulated to create chimeric antibodies that have mouse variable region DNA and human constant region DNA.
   ii) Similarly, mice can be used to create humanized antibodies that have some mouse variable region DNA, some human variable region DNA, and human constant region DNA.
   iii) Further, genetically modified mice can be used to create antibodies that have fully human DNA.
   iv) Finally, mice can also be modified to create reverse chimeric antibodies that have mouse constant region DNA and human variable region DNA. This spectrum of modified antibodies is illustrated below.



2. "Inequitable conduct is an equitable defense to patent infringement that, if proven, bars enforcement of a patent." *Therasense*, 649 F.3d at 1285. Unlike validity defenses, which are claim specific, inequitable conduct regarding a single claim renders the entire patent unenforceable. *Id*. at 1288. Inequitable conduct has two separate requirements: materiality and intent. *Id*. at 1290.

3. Claim 1: A genetically modified mouse, comprising in its germline human unrearranged variable region gene segments inserted at an endogenous mouse immunoglobulin locus.