

Prior Art Reference Need Not Disclose Claimed Invention's Utility

By Kristin Connarn

Addressing the issue of whether a comprehensive reference listing of every relevant antisense oligodeoxynucleotide in a known nucleic acid sequence anticipates claims to specific antisense sequences, the U.S. Court of Appeals for the Federal Circuit held that anticipation merely requires that the oligonucleotide sequence was in the prior art, not that its usefulness was previously disclosed. *In re Gleave*, Case No. 08-1453 (Fed. Cir., March 26, 2009) (Prost, J.).

Martin Gleave and Maxim Signaevsky (collectively "Gleave") filed U.S. Patent Application No. 10/346,493. The examiner rejected claims 1, 4, 15 and 18-21 as anticipated or obvious under 35 U.S.C. § 102(b)/103(a). Gleave appealed the prior art rejection to the U.S. Patent and Trademark Office's Board of Patent Appeals and Interferences, which upheld the rejection. Gleave next appealed to the Federal Circuit.

THE FEDERAL CIRCUIT APPEAL

The claims at issue are directed to an antisense oligodeoxynucleotide designed to bind two different types of insulin-dependent growth factor binding protein ("IGFBP"). The cited prior art reference listed every 15-base-long sense oligodeoxynucleotide in the IGFBP-2 gene, which amounted to more than 1,400 sequences. Also disclosed in the cited prior art were the general concepts that antisense oli-

gonucleotides are preferably between 15 and 25 bases in length, as well as that some antisense oligonucleotides may be bispecific (*i.e.*, capable of inhibiting "an IGFBP such as IGFBP-2 and/or IGFBP-3"). Finally, the prior art reference stated that "[a]ntisense oligonucleotides to IGFBP-2 may be selected from molecules capable of interacting with one or more" of the sense oligonucleotides described in the long list.

Gleave argued that the reference merely disclosed a list comprising "ink, formed into strings of letters" not disclosure of any functional antisense oligonucleotide. The court initially reiterated that if a reference discloses all of the claim limitations and enables the "subject matter that falls within the scope of the claims at issue," the reference anticipates. The court explained that, in the past, it has framed the issue of enablement under § 102 as a question of whether one of ordinary skill in the art would know how to "make and use" the invention based on the reference's disclosure. The court conceded that, taken out of context, these formulations of the § 102 enablement standard arguably support a use or utility requirement divorced from any "make" requirement. However, the court pointed out that a closer reading of the relevant precedent makes clear that a reference need disclose no independent use or utility to anticipate a claim under § 102. The court explained that the confusion stems from the fact that if a method claim is at issue, it is a largely meaningless formulation of the standard to require a reference to disclose how to "make" that method in order to anticipate such that the "make" requirement becomes, in effect, a

"use" requirement. The court noted that, although the only way one can show that a reference enables the method is to show that a person of ordinary skill would know how to use — in other words, to practice or to carry out — the method in light of the reference, this does not mean that the prior art reference must demonstrate the invention's utility. The court noted that for Gleave's composition claims, the prior art reference satisfied the enablement requirement of § 102(b) by showing that one of skill in the art would know how to make the relevant sequences. The court deemed as irrelevant the fact that the cited reference provided "no understanding of which of the targets would be useful," because Gleave admits that it is well within the skill of an ordinary person in the art to make any oligodeoxynucleotide sequence. The court also noted that Gleave's claims did not contain any limitation restricting their scope to functional antisense oligonucleotides. The court emphasized that "where the claims themselves do not require a particular activity, we have no call to require something more from the anticipating reference."

A PIVOTAL DISTINCTION

The pivotal distinction the court made, regarding the use of a list of sense oligonucleotides in the cited art and the traditional restriction against using a mere recitation of all possible compounds as anticipating claims to particular species, is found in the court's consideration of the application of *In re Wiggins*, 488 F.2d 538, 543 (C.C.P.A. 1973) to the facts before it. In *Wiggins*, the Court of Customs and Patent Appeals ("CCPA") stated:

In our view, [the alleged anticipatory reference's] listing of the compounds by name constituted nothing more than speculation about their potential or theoretical existence. The mere naming of a compound in a reference, without more, cannot constitute a description of the compound, *particularly when, as in this case, the evidence of record suggests that a method suitable for its preparation was not developed until a date later than that of the reference.*

If we were to hold otherwise, lists of thousands of theoretically possible compounds could be generated and published which, assuming it would be within the level of skill in the art to make them, would bar a patent to the actual discoverer of a named compound no matter how beneficial to mankind it might be.

488 F.2d at 543 (emphases added).

The court noted that the CCPA in *Wiggins* stated that “[t]he mere naming of a compound in a reference, without more, cannot constitute a description of the compound.” 488 F.2d at 543. But the distinction in this case, according to the court, is that *Wiggins* involved the “mere naming of a theoretical compound, without more,” and that was not anticipating. The court emphasized that “[w]ithout more’ is the key phrase,” because what is “more” is the capacity for the person of ordinary skill in the art to be able to make the claimed compound. Here, these were not “potential or theoretical” compounds, but a class of compounds that fell within a genus that was so limited that the skilled artisan could “at once envision each member of this limited class,” citing *Eli Lilly & Co. v. Zenith Goldline Pharm., Inc.*, 471 F.3d 1369, 1376 (Fed. Cir. 2006). “In that limited circumstance, a reference describing the genus anticipates every species within the genus. See *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1377 (Fed. Cir. 2005).” The “key,” the Federal Circuit explained in the present case, is the person having ordinary skill in the art’s ability to make the claimed compound. In *Wiggins*, the per-

son having ordinary skill in the art lacked the requisite ability; in *Gleave* the ability was present.

The court suggested that *Gleave* might be entitled to claims for methods of using the oligonucleotides, because methods of use are not anticipated by the cited art. It was undisputed that the prior art reference did not disclose a single antisense oligonucleotide — it disclosed all 15-mer sense oligonucleotides, coupled with a generic disclosure that antisense oligonucleotides would specifically hybridize to the disclosed sense oligonucleotides, and the knowledge in the art that such oligonucleotides could be made without undue experimentation.

CONCLUSION

Regardless of function (although *Gleave*’s arguments might have had additional force had they contained a functional limitation regarding operability as antisense oligonucleotides), the court’s decision suggests that nucleic acids can be anticipated by the mere recitation of any sequence, or its complement, in the prior art regardless of any disclosure as to function. Thus the question of whether an unidentified open reading frame, published in a publicly available database, could be enough to anticipate claims directed to an isolated nucleic acid encoding a novel protein has to be considered. The existence of the sequence in the prior art, similar to antisense oligonucleotides at issue in *Gleave*, could be combined with the skilled person’s understanding that proteins are encoded by open reading frames, to anticipate the sequence. Known function of the disclosure is not required, according to this panel opinion, raising the question of whether the availability of the published, but unrecognized, sequence would be enough. Specific facts in this case, including that the oligonucleotides comprised a known protein, may allow for distinction. Furthermore, there would be an *In re Hall* question about whether an unannotated open reading frame would be sufficiently accessible to qualify as prior art. Despite the specific facts, the Federal Circuit’s de-

cision in *Gleave* amounts to another instance of differential application of the law to biotechnology claims.

In re Gleave suggests a defensive disclosure strategy for pioneering inventors in the biotechnology and chemical arts. An early inventor may be motivated to include a list of species compounds in an appropriate disclosure, to block later inventors from obtaining protection on individual species compounds so long as the person having ordinary skill in the art possesses the ability to make the compositions. In technological fields where the person of skill in the art possesses the requisite ability, such as the antisense technology at issue here, the inclusion of such lists in the earlier disclosure can effectively strengthen any protection given to the genus compound by blocking any later protection for species compounds.

In re Gleave reinforces the well understood value of including support for associated methods of using a disclosed composition in applications directed to compositions. In its opinion, the court noted that, “if the use *Gleave* discovered is new, he will be able to patent that method of use.” Accordingly, this case points out the importance of including support for methods of using a disclosed composition. Methods of use (and other relevant methods) can provide an important fallback position in the event that a composition claim is impossible to get due to a listing of compounds that is discovered during prosecution of the original application.