

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte SEAN B. CARROLL

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Appeal No. 2001-1298  
Application No. 08/304,602

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ON BRIEF

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Before WINTERS, ADAMS and GREEN, Administrative Patent Judges.

ADAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-3, 5-29 and 31-34, which are all the claims pending in the application.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. An antibiotic-antibody conjugate, comprising surface-active antibiotic covalently bound via a non-carbodiimide cross-linker to non-specific immunoglobulin having an Fc region wherein said conjugate binds to bacteria via said antibiotic.

The references relied upon by the examiner are:

Hawiger et al. (Hawiger)                      4,703,039                      Oct. 27, 1987

Jawetz et al. (Jawetz), "Antimicrobial Chemotherapy," Review of Medical Microbiology, pp. 122-135 and 142 (1984)

Drabick et al. (Drabick), "Covalent Polymyxin B-starch and polymyxin B-immunoglobulin conjugates as novel anti-endotoxin reagents," Clinical Research, Vol. 40, No. 2, p. 287 (1992)

#### GROUND OF REJECTION

Claims 1-3, 5-6, 8-21, 28, 29, 31 and 32 stand rejected under 35 U.S.C. § 103 as being unpatentable over Drabick in view of admitted prior art at pages 14-15, 26-28, 29 and 30 of appellant's specification.

Claims 7, 23-27 and 34 stand rejected under 35 U.S.C. § 103 as being unpatentable over Drabick in view of admitted prior art at pages 16-18 of appellant's specification, further in view of Jawetz and the admitted prior art on page 24 (Table 2) of appellant's specification.

Claims 22 and 33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Drabick in view of admitted prior art at page 16 of appellant's specification, further in view of Jawetz and the admitted prior art on page 24 of appellant's specification and further in view of Hawiger.

We reverse

#### DISCUSSION

Prima facie obviousness based on a combination of references requires that the prior art provide "a reason, suggestion, or motivation to lead an inventor to combine those references." Pro-Mold and Tool Co. v. Great Lakes Plastics Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629 (Fed. Cir. 1996).

[E]vidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved.... The range of sources available, however,

does not diminish the requirement for actual evidence. That is, the showing must be clear and particular.

In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (citations omitted). The suggestion to combine prior art references must come from the cited references, not from the application's disclosure. See In re Dow Chemical Co., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988).

On this record, there are three separate rejections; each, however, relies on the same primary reference (Drabick), therefore we will discuss the rejections together.

According to the examiner (Answer, page 3), Drabick "teach a conjugate comprising the surface active antibiotic Polymyxin B (PMB) covalently linked to IgG which specifically binds Paeruginosa and has antiendotoxin activity." The examiner, however, recognizes (Answer, page 4) that Drabick "do not teach that PMB and IgG are linked via a cross-linker..." To make up for this deficiency in Drabick, the examiner finds (id.) that appellant's specification admits that "cross-linking agents for cross-linking biological molecules were known and available in the art at the time [the] claimed invention was made."

Therefore, the examiner concludes (id.), "[i]t would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to cross[-]link IgG and PMB using any of the numerous cross-linking agents known to those of ordinary skill in the art."

In response, appellant argues (Brief, bridging paragraph, pages 9-10):

[I]n the present patent application, the claims all recite that the binding of the components of the conjugate is via a cross-linker. The Drabick abstract does not mention this

limitation, thus giving no instruction of it or of the particular cross[-]linking conditions necessary to provide the claimed conjugates to one of ordinary skill in the art.

Because of the absence of any of this information from Drabick, as well as absence of even a suggestion of using crosslinking chemistry, it is improper to combine Drabick with any other art. Since the reference cannot be properly combined, there is no prima facie showing of obviousness.

We agree with appellant.

As set forth in In re Kotzab, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000):

A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. ... Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher."

...

Most if not all inventions arise from a combination of old elements. ... Thus, every element of a claimed invention may often be found in the prior art. ... However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. ... Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. [citations omitted]

In other words, "there still must be evidence that 'a skilled artisan, ... with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.'" Ecolochem Inc. v.

Southern California Edison, 227 F.3d 1361, 1375, 56 USPQ2d 1065, 1075-76

(Fed. Cir. 2000). At best, the statement of the rejection establishes that individual parts of the claimed invention were known in the prior art. The statement of the rejection, however, does not establish the requisite suggestion in the art to combine that knowledge. In this regard, we remind the examiner that “a rejection cannot be predicated on the mere identification ... of individual components of claimed limitations. Rather particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.” Ecolochem, 227, F.3d at 1375, 56 USPQ2d at 1076, quoting Kotzab, 217 F.3d at 1371, 55 USPQ2d at 1317.

The examiner relies (Answer, page 5) on Jawetz to “teach that the use of antimicrobial drugs to treat Gram-positive microbial infections was known as was the use of antimicrobial drugs in combination.” In addition, the examiner relies (Answer, page 6) on Hawiger to teach the “conjugation of small peptides to molecules such as immunoglobulin to increase their biological half-life.” However, in our opinion, neither of these references make up for the deficiencies found in the primary reference.

Accordingly, we reverse each of the three rejections under 35 U.S.C. § 103.

REVERSED

Sherman D. Winters )  
Administrative Patent Judge )  
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) BOARD OF PATENT  
Donald E. Adams )  
Administrative Patent Judge ) APPEALS AND  
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) INTERFERENCES  
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Lora M. Green )  
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