

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 35

UNITED STATES PATENT AND TRADEMARK OFFICE

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

Ex parte

FRANCEE BOCHES, KATHY F. HILYARD, JAMES MONTICELLO
DENNIS SMITH and RICHARD TIMMONS

Appeal No. 1999-0334
Application No. 08/150,747

ON BRIEF

Before WILLIAM F. SMITH, SCHEINER and MILLS, Administrative Patent Judges.

SCHEINER, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 33 through 35, the only claims remaining in the application.

Claims 33 and 34 are representative of the subject matter on appeal and read as follows:

33. A method to determine an amount of vitamin B₁₂ in a fluid sample, the fluid sample comprising at least some of the vitamin B₁₂ bound to endogenous intrinsic factor, the method comprising: treating the fluid sample to free any vitamin B₁₂ in the sample from the endogenous intrinsic factor and to destroy the endogenous intrinsic factor's binding ability; combining the following with an amount of an immobilized primary antibody which specifically binds exogenous intrinsic factor: (a) an amount of exogenous intrinsic factor, (b) the treated fluid sample and (c) an amount of labeled

vitamin B₁₂ whereby the immobilized primary antibody binds all of the exogenous intrinsic factor, and any vitamin B₁₂ in said sample and labeled vitamin B₁₂ compete for reaction with the exogenous intrinsic factor; measuring the amount of labeled vitamin B₁₂ bound to the primary antibody through the exogenous intrinsic factor; and using the measurement of the labeled vitamin B₁₂ to determine the amount of vitamin B₁₂ in the fluid sample.

34. A method to determine an amount of folate in a fluid sample, the fluid sample comprising at least some of the folate bound to endogenous folate binding protein, the method comprising: treating the fluid sample to free any of said folate present in the sample from endogenous folate binding protein and to destroy the endogenous folate binding protein's binding ability; combining the following with an amount of an immobilized primary antibody which specifically binds folate binding protein: (a) an amount of exogenous folate binding protein, (b) the treated fluid sample and an amount of labeled folate whereby the immobilized primary antibody binds all of the exogenous folate binding protein, (c) and any folate in said sample and labeled folate compete for reaction with the exogenous folate binding protein; measuring the amount of labeled folate bound to the primary antibody through the exogenous folate binding protein; and using the measurement of the labeled folate to determine the amount of folate in the fluid sample.

As evidence of obviousness, the examiner relies on the following references:

Litt	4,092,408	May 30, 1978
Gutcho et al. (Gutcho)	4,146,602	Mar. 27, 1979
Pourfarzaneh et al. (Pourfarzaneh)	WO 91/00519	Jan. 10, 1991

Suter et al. (Suter), "The Immunochemistry of Sandwich ELISAs. II. A Novel System Prevents the Denaturation of Capture Antibodies," Immunology Letters, Vol. 13, pp. 313-316 (1986)

Høier-Madsen et al. (Høier-Madsen), "Rabbit Antibodies Against the Low Molecular Weight Folate Binding Protein from Human Milk. Use for Immunological Characterization of Human Folate Binding Proteins in an Enzyme-Linked Immunosorbent Assay (ELISA)," Bioscience Reports, Vol. 7, No. 7, pp. 553-557 (1987)

Claims 34 and 35 stand rejected under 35 U.S.C. § 103 as unpatentable over Gutcho, Litt, Suter and Høier-Madsen, while claim 33 stands rejected as unpatentable

over the same references in combination with Pourfarzaneh.¹

We reverse both of these rejections.

DISCUSSION

The rejection of claims 34 and 35

According to the examiner, Gutcho describes “a competitive specific binding assay for folate and vitamin B₁₂ in which the sample is first treated to release folate and vitamin B₁₂ from endogenous binders . . . then combined with labeled folate and vitamin B₁₂ and immobilized binders for the folate and vitamin B₁₂ . . . folate binder and intrinsic factor [are mentioned] as suitable binders.” Examiner’s Answer, page 3. Høier-Madsen describes an immunoassay for detecting folate binding protein wherein folate binding protein is sandwiched between immobilized and labeled antibodies specific for

¹ According to appellants, “[t]he claims now on appeal were last amended in [the] Response After Final Rejection dated October 20, 1997” and “[t]hat amendment was entered by the Examiner in the examiner’s Advisory Action dated November 10, 1997.” Brief, page 2. We note that claim 35, as amended, was rejected under 35 U.S.C. § 112, second paragraph in that advisory action. That rejection was never expressly withdrawn but was not repeated in the Examiner’s Answer. We have therefore treated the rejection as having been withdrawn.

folate binding protein. Id., page 4.

Litt describes “solid phase immunoassays in which a double antibody coating is used to provide a more stable assay reagent which requires very little primary antibody (antigen-specific antibody) . . . provid[ing] the advantages of using less primary antibody, and achieving a stable, reproducible assay reagent.” Examiner’s Answer, pages 3-4. Finally, Suter teaches that “some antibodies function poorly when adsorbed directly on a solid phase” and advocates “using an intermediate linking structure such as biotin/streptavidin” “to bind a capture antibody to a solid phase.” Id.

Together, these prior art references establish that certain individual elements of the claimed invention were known in the art.

“Most if not all inventions arise from a combination of old elements[, and] 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.” In re Kotzab, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) (citations omitted).

“To prevent the use of hindsight based on the invention to defeat patentability of the invention . . . the examiner [is required] to show a motivation to combine the references that create the case of obviousness,” i.e., “the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.” In re Rouffet, 149 F.3d 1350, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (emphasis added).

Having established that individual elements of the claimed invention were known in the art at the time of the invention, the examiner maintains that “[i]t would have been

obvious . . . to use the anti-folate binding protein and species-specific antibodies of Høier-Madsen [] and Litt, respectively, in the folate assay of Gutcho [] because Suter [] teach[es] that antibodies directly adsorbed on a solid phase may have reduced binding due to altered antigen binding sites and Litt teaches that a double antibody solid phase provides a more stable, reproducible assay reagent.” In addition, the examiner maintains that “[t]he skilled artisan would have had a reasonable expectation of success in using the anti-[folate binding protein] antibodies of Høier-Madsen [] with the species-specific antibodies of Litt or the biotin/streptavidin coupling system of Suter [] to immobilize the folate binding protein in the assay of Gutcho [] because Suter [] and Litt teach that using intermediate binding structures for immobilizing the antigen-specific binding protein provides advantages of increased binding and stability.” Examiner’s Answer, pages 4-5.

Appellants argue that “[t]his is not the present invention.” Brief, page 6. We agree. Indeed, the combination of elements proposed by the examiner scarcely resembles the claimed method. We cannot overemphasize the importance of beginning an analysis of patentability “with a key legal question -- what is the invention claimed?” since “[c]laim interpretation . . . will normally control the remainder of the decisional process,” Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1567-68, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987).

According to appellants, each of the prior art references describes using “receptors” or primary antibodies to bind an analyte of interest. Brief, page 7. On the other hand, “[i]n the present invention antibody to folate binding protein binds folate binding protein which in turn binds analyte (folate).” Id., page 6. That is, “the present invention uses primary antibody to a binding protein to bind the binding protein, not the

analyte,” (Id., page 7), thus, “[t]he binding protein . . . must retain the ability to bind with its analyte and/or labeled analyte while . . . [bound] to the primary antibody” (Id., page 8).

More importantly, “[i]n the suggested combination, an anti-antibody is on the solid phase (Litt), then an antibody which binds folate binding protein (Høier-Madsen) is bound to that anti-antibody.” Brief, page 6. Again, as pointed out by appellants, “[t]his is not the present invention.” Id. Appellants argue essentially that the examiner’s rationale for combining the references would tend to show that appellants “have proceeded contrary to the accepted wisdom of the prior art.” Brief, page 7. Appellants’ point is well taken, inasmuch as the examiner’s rationale is entirely concerned with using a double antibody solid support or an intermediate binding structure to improve antibody binding and stability, yet the claimed invention requires no such arrangements.

“The name of the game is the claim,” In re Hiniker Co., 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (CAFC 1998). Here, we have no reasoned statement from the examiner as to why the claimed invention would have been unpatentable under 35 U.S.C. § 103. The fact that the prior art could have been modified in a manner consistent with appellants’ claims would not have made the modification obvious unless the prior art suggested the desirability of the modification. In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Here, we find no reason stemming from the prior art relied on by the examiner which would have led a person having ordinary skill in the art to the claimed invention. On this record, the only reason or suggestion to combine the references in the manner claimed comes from appellants’ specification. Accordingly, we reverse the rejection of claims 34 and 35 under 35 U.S.C. § 103.

The rejection of claim 33

Claim 33 is directed to a method of determining the amount of vitamin B₁₂ in a sample; the format is the same as that of claim 34, but the analyte is vitamin B₁₂, the binding protein is intrinsic factor, and the primary antibodies are specific for intrinsic factor. The examiner's proposed combination of Gutcho, Litt, Suter and Høier-Madsen forms the basis of this rejection as well, with the addition of Pourfarzaneh as evidence that "antibodies to intrinsic factor: vitamin B₁₂ complex and immunoassays for vitamin B₁₂ using the antibodies" were known in the art. The addition of Pourfarzaneh does nothing to cure the underlying deficiency in the proposed combination of Gutcho, Litt, Suter and Høier-Madsen, thus, the rejection of claim 33 under 35 U.S.C. § 103 is reversed as well.

REVERSED

William F. Smith)
Administrative Patent Judge)
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) BOARD OF PATENT
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Toni R. Scheiner) APPEALS AND
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