The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 36

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte RUDOLPH E. TANZI and ASHLEY I. BUSH

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Appeal No. 1999-0413
Application No. 08/294,819

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HEARD: June 12, 2001

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Before WILLIAM F. SMITH, ROBINSON and ADAMS, 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 and 44, which are all the claims pending in the application.

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

1. A rapid analytical method for detection of Aβ amyloid formation in a biological fluid from a human patient suspected of amyloidosis by comparing with Aβ amyloid formation in a biological fluid from a control human subject which comprises:

(a) preparing a first set of reaction mixtures comprising neat biological fluid from the control human subject, and serial dilutions of said fluid from the control subject made in aqueous buffer or physiological solution;

(b) preparing a second set of reaction mixtures comprising the same type of neat biological fluid from the human patient suspected of amyloidosis and serial dilutions of said fluid from the patient made in aqueous buffer or physiological solution;

(c) adding an equal amount of Aβ peptide comprising at least amino acids 6 to 28 of Aβ to each serial dilution sample and each neat sample;

(d) contacting each of the first and the second set of reaction mixtures with an amount greater than 300 nM but less than or equal to 50 µM of an added heavy metal cation capable of binding to an Aβ peptide comprising at least amino acids 6 to 28 of Aβ;

(e) centrifuging each of the first and the second sets of reaction mixtures to give a first and a second set of pellets, respectively; and

(f) measuring and comparing the amount of amyloid in the first and the second set of pellets and thereby detecting Aβ amyloid formation in the biological fluid from the human patient suspected of amyloidosis.

The references relied upon by the examiner are:

Maggio et al. (Maggio) 5,434,050 Jul. 18, 1995

Mantyh et al. (Mantyh), "Aluminum, Iron, and Zinc Ions Promote Aggregation of Physiological Concentrations of ß–Amyloid Peptide," J. Neurochemistry, Vol. 61, No. 3, pp. 1171-1174 (1993).

GROUND OF REJECTION

Claims 1-3 and 44 stand rejected under 35 U.S.C. § 103 as being unpatentable over Maggio in view of Mantyh.

We reverse.

DISCUSSION

In reaching our decision in this appeal, we considered appellants' specification and claims, in addition to the respective positions articulated by the appellants and the examiner. We make reference to the examiner's Answer[1] for the examiner's reasoning in support of the rejection. We further reference appellants' Brief[2], and appellants' Reply Brief[3] for the appellants' arguments in favor of patentability. We note that the examiner entered and considered appellants' Reply Brief.[4]

THE REJECTION UNDER 35 U.S.C. § 103:

The initial burden of presenting a prima facie case of obviousness rests on the examiner. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). In meeting this burden, we remind the examiner that "[t]he Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis."

[1] Paper No. 30, mailed July 7, 1998.
[2] Paper No. 27, received March 27, 1998.
[3] Paper No. 31, received Septemer 8, 1998.
[4] Paper No. 33, mailed November 24, 1998.

In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

On this record, the issue is focused on the limitation in the claims that requires the addition of an "amount greater than 300 nM but less than or equal to 50 µM of … [a] heavy metal cation capable of binding to an Aß peptide…." According to the examiner (Answer, page 3) Maggio discloses a method very similar to the claimed method, failing only in teaching "cererospinal fluid (CSF) as a sample, centrifugation to separate aggregates, the instant Zn concentration, or serial dilution of samples." Answer, page 4. According to the examiner (id.), Mantyh makes up for all the deficiencies in Maggio, except for the Zn concentration, by teaching "assays for amyloid aggregation in CSF by adding labeled beta-amyloid protein, incubating, centrifuging and detecting (pp. 1171-1172)."

The examiner argues (Answer, page 4) "[w]ith respect to the claimed concentration of metal ion, the teaching [in Maggio] of a range of about 100 µM to 50 mM encompasses amounts somewhat smaller and greater than the range limits and therefore teaches or suggests using concentrations less than 100 µM as claimed." Accordingly, the examiner concludes (Answer, page 4) that:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to use concentrations somewhat less than 100 µM (i.e., less than 50 and 25 µM, respectively) in order to use an effective amount of metal ion as taught by Maggio for any of the labels, including the alternate labels, taught by Maggio.

However, we note that while a person of ordinary skill in the art may possess the requisite knowledge and ability to modify Maggio's method as set forth by the examiner, the modification is not obvious unless the prior art suggested the desirability of the modification. In re Gordon, 733 F.2d 900, 902, 211 USPQ 1125,

1127 (Fed. Cir. 1984). We remind the examiner that selective hindsight is no more applicable to the design of experiments than it is to the combination of prior art teachings. In re Dow Chem. Co., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). On this record, absent appellants' disclosure, the examiner provides no suggestion supported by the prior art to modify the references as applied. We are not persuaded by the examiner's unsupported "position" (Answer, page 5) that "[w]ithin the context of a range that extends over 49,900 units, it is the examiner's position that a variance of 50-75 units, or 1-1.5%, is encompassed by 'about'." This is particularly true in view of appellants' argument that Manthy teach away from the claimed invention.

Appellants' argue (Brief, bridging paragraph, pages 11-12) that:

> Mantyh et al. teaches away from using amounts less than 100 µM. Knowing that amounts less than 100 µM will result in minimal or nonexistent amounts of Aß aggregation, persons or ordinary skill in the art trying to obtain Aß aggregation would have avoided amounts less than 100 µM. Instead, they would have focused on larger quantities towards the upper end of the 100 µM-50 mM range demonstrated by Maggio et al. to yield significant amounts of Aß aggregation, to insure Aß aggregation, hence, assay sensitivity.

In response, the examiner finds (Answer, page 5) that "even if the combination were construed as teaching away from using a lower concentration of metal ions for iodine labeled peptide, it would have been obvious to use metal ions at a concentration of about 100 µM metal ions, encompassing 50 µM and 25 µM, with the alternative labeled peptides taught by Maggio, which metal ion

concentrations would be effective to aggregate the alternatively labeled peptides."

However, the examiner again fails to support her conclusion.

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 Ato 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).

For the reasons set forth above, we find no reasonable suggestion for combining the teachings of the references relied upon by the examiner in a manner which would have led one of ordinary skill in this art to arrive at the claimed

invention. Therefore, in our opinion, the examiner has failed to provide the evidence necessary to support a prima facie case of obviousness.

Where the examiner fails to establish a prima facie case, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Accordingly, we reverse the rejection of claims 1-3 and 44 under 35 U.S.C. § 103 over Maggion in view of Mantyh.

REVERSED

WILLIAM F. SMITH Administrative Patent Judge	)
DOUGLAS W. ROBINSON Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
DONALD E. ADAMS Administrative Patent Judge	)

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