

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD A. HOUGHTEN, JULIO H. CUERVO
and FRED F. WEITL

Appeal No. 1996-3434
Application No. 08/063,279

HEARD: June 8, 2000

Before WINTERS, WILLIAM F. SMITH, 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 1-17, 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 library of linear substituted oligoalkyleneimine chains comprising a

mixture of equimolar amounts of linear oligoalkyleneimine chain members containing the same number of about two to about ten alkyleneimine repeating units in each chain, each of said alkyleneimine repeating units having a length of two to about six carbon atoms and having a reduced amino acid side chain bonded to the carbon atom alpha to the nitrogen atom in which the carboxamide groups of said reduced amino acid side chains are replaced by aminomethyl groups, carboxyl groups of said reduced amino acid side chains are replaced by hydroxymethyl groups, and guanidino groups of said reduced amino acid side chains are replaced by amino groups, the members of said library having one or more of said repeating units containing a predetermined reduced amino acid side chain at the same one or more predetermined positions of the oligoalkyleneimine chain, and the library having equimolar amounts of repeating units that contain at least six different of said reduced amino acid side chains at one or more of these same other positions of the oligoalkyleneimine chain, a first terminus of each of said oligoalkyleneimines in the library having a hydrogen, benzyl or C₁-C₁₈ hydrocarbyl group bonded to an amino group, and the second terminus being a hydroxyl or methylamino group.

The references relied upon by the examiner are:

Nyéki et al. (Nyéki) 5,093,320 Mar. 3, 1992

Lam et al. (Lam) WO 92/00091 Jan. 1, 1992

Raucher et al. (Raucher), A Convenient Method For The Selective Reduction of Amides to Amines@Tetrahedron Letters, Volume 21, pp. 4061-64 (1980)

Houghten et al. (Houghten), A Generation and use of synthetic peptide combinatorial libraries for basic research and drug discovery@Nature, Volume 354, pp. 84-86 (1991)

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GROUND OF REJECTION

Claims 1-8 and 10-16 are rejected under 35 U.S.C. ' 103 as being unpatentable over Houghten in view of Lam and Raucher.

Claims 9 and 17 are rejected under 35 U.S.C. ' 103 as being unpatentable over Houghten in view of Lam and Raucher as applied to claims 1-8 and 10-16 above, and further in view of Nyéki.

We reverse the rejections under 35 U.S.C. ' 103.

DISCUSSION

In reaching our decision in this appeal, we have given careful consideration to the appellants= specification and claims, and to the respective positions articulated by the appellants and the examiner. We make reference to the examiner=s Answer (Paper No. 16, mailed June 12, 1995), for the examiner=s reasoning in support of the rejection.

We further reference appellants= Brief (Paper No. 15, filed February 15, 1995), for the appellants= arguments in favor of patentability.

THE REJECTIONS UNDER 35 U.S.C. ' 103:

At page 4 of the Answer the examiner explains what each reference is relied upon to teach. The examiner states:

Houghten et al. teach the generation and use of synthetic peptide combinatorial libraries (SPCLs). The peptides consisted of six residue peptide sequences with acetylated N terminal and amidated C terminals. The first two positions of these libraries were individually and specifically defined . . . This reference fails to teach reduction of the peptides to produce oligoalkyleneimines, such as oligoethyleneimines.

Lam et al. teach the production of random bio-oligomer libraries, in which the monomer unit may be an amino acid, an amino acid analog, or a peptidomimetic . . . This reference also teaches that a peptide library may be generated that incorporates a reduced peptide bond, i.e. $R_1-CH_2-NH-R_2$.

Raucher et al. teach a convenient, general, and selective method for the rejection of amides to amines.

Appellants=representative confirmed that both the Houghten and Lam references are available as prior art, during the June 8, 2000 oral hearing for this appeal.

On page 4 of the Brief, appellants state, A[t]he relied-on art at best teaches a library whose member chains contain reduced amide bonds, but whose carboxylic acid or ester functionalities and guanidino functionalities of arginines are intact. Such

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libraries are not claimed here. The examiner's statement of the rejection addresses the side chains by stating:

It would have also been obvious that such libraries would have the carboxamide groups replaced by aminomethyl groups, carboxyl groups replaced by hydroxymethyl, and guanidino groups replaced by amino groups, because one of ordinary skill would have also expected these groups to be reduced by the reductants and procedures which are well known and routine in the art, as one would not be concerned with trying to maintain the structure and activity of a parent peptide.

See, Answer, page 6.

We have no doubt that the prior art could be modified in a manner consistent with appellants' specification and claims. That the prior art could be so modified, however, 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). What is lacking from the examiner's treatment of the claims on appeal is a reason, suggestion or motivation, stemming from the prior art, which would have led a person having ordinary skill to the claimed invention wherein the carboxamide groups of said reduced amino acid side chains are replaced by aminomethyl groups, carboxyl groups of said reduced amino acid side chains are replaced by hydroxymethyl groups, and guanidino groups of said reduced amino acid

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side chains are replaced by amino groups@. See, e.g., Claim 1. Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 785 F.3d 1568, 1573, 37 USPQ2d 1626, 1629 (Fed. Cir. 1996). In our judgment, the only reason or suggestion to modify the references to arrive at the present invention comes from appellants' specification.

The examiner's addition of Nyéki to the combination of Houghten in view of Lam and Raucher for claims 9 and 17 does not cure the above noted deficiencies.

Accordingly, the rejection of claims 1-8 and 10-16 under 35 U.S.C. ' 103 is reversed.

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OTHER ISSUES

Upon return of this application, the examiner should review the scope and content of claims 8 and 10 to determine if they are separately patentable. In this regard we direct the examiners attention to MPEP ' 706.03(K) (7th ed., rev. 1, February 2000).

REVERSED

SHERMAN D. WINTERS)
Administrative Patent Judge)
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) BOARD OF PATENT
WILLIAM F. SMITH)
Administrative Patent Judge) APPEALS AND
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) INTERFERENCES
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DONALD E. ADAMS)
Administrative Patent Judge)

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