

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 21

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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

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Ex parte WILHELMUS H.J. BOESTEN,  
QUIRINUS BROXTERMAN, and  
MARCUS PLAUM

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Appeal No. 2003-0897  
Application No. 09/640,796

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ON BRIEF

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WINTERS, MILLS, and GRIMES, Administrative Patent Judges.

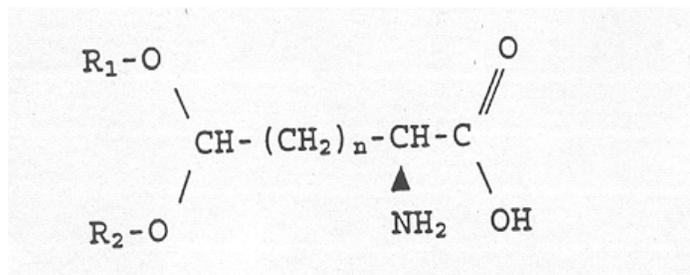
WINTERS, Administrative Patent Judge.

DECISION ON APPEAL

This appeal was taken from the examiner's decision rejecting claims 1 through 5 and 20, which are all of the claims remaining in the application.

The Invention

Applicants' invention relates to a multi-step process for preparing (S)-2-amino- $\omega$ -oxoalkanoic acid derivatives having formula (1)



wherein variables  $n$ ,  $R_1$  and  $R_2$  are defined in the specification, page 1, lines 16 through 20.

Claim 1, which is illustrative of the subject matter on appeal, reads as follows:

1. (Amended) A process for preparing an (S)-2-amino- $\omega$ -oxoalkanoic acid [derivative] represented by formula 1,

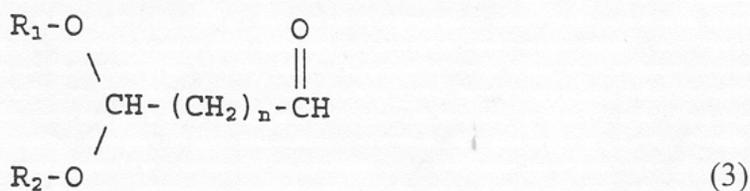
$$\begin{array}{c} R_1-O \\ \diagdown \\ CH-(CH_2)_n-CH-C \\ \diagup \\ R_2-O \end{array} \begin{array}{c} O \\ \parallel \\ NH_2 \quad OH \end{array} \quad (1)$$

wherein  $n$  equals 0, 1, 2, 3 or 4 and  $R_1$  and  $R_2$  each independently represent an alkyl group with 1-10 carbon atoms or form a ring with 3 or 4 carbon atoms together with the oxygen atoms to which they are bound and the carbon atom to which the oxygen atoms are bound, comprising

[converting the corresponding aldehyde represented by formula 2

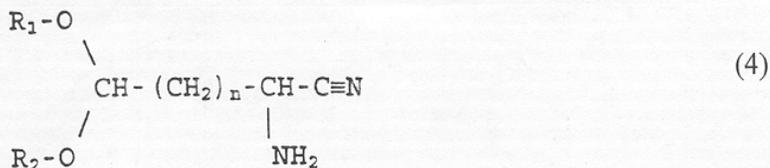


with n as described above into the corresponding acetal-protected aldehyde represented by formula 3]



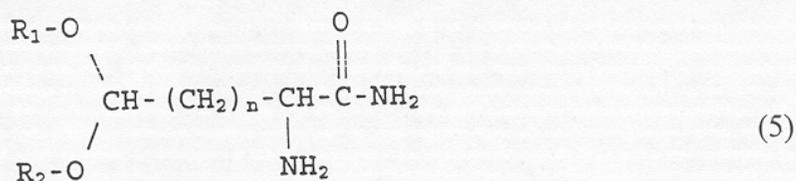
[with n, R<sub>1</sub> and R<sub>2</sub> as described above,]

converting [the] an acetal-protected aldehyde of formula 3 into the corresponding aminonitrile represented by formula 4



with n, R<sub>1</sub> and R<sub>2</sub> as described above[,] in the presence of ammonia with the aid of a cyanide compound.

converting the aminonitrile into the corresponding amino acid amide represented by formula 5



with n, R<sub>1</sub>, R<sub>2</sub>, as described above[,] in the presence of a base and a ketone or aldehyde,

subjecting the amino acid amide to an enzymatic, enantioselective hydrolysis in which the (R)-enantiomer of the amino acid amide remains and the (S)-enantiomer is converted into the (S)-amino acid, and

isolating the (S) amino acid.

### The Rejection

In rejecting the appealed claims, the examiner does not rely on any prior art references. Claims 1 through 5 and 20 stand rejected under 35 U.S.C. § 112, first paragraph, as based on a specification, as filed, which does not provide adequate, written descriptive support for the invention now claimed.

### Deliberations

Our deliberations in this matter have included evaluation and review of the following materials: (1) the instant specification, including Figures 1, 2, and 3, and all of the claims on appeal; (2) applicants' Appeal Brief (Paper No. 17); and (3) the Examiner's Answer (Paper No. 18).

On consideration of the record, including the above-listed materials, we reverse the examiner's rejection under 35 U.S.C. § 112, first paragraph.

#### Discussion

Initially, we note that claim 1 before us was introduced in the record by way of preliminary amendment received August 18, 2000, which is the filing date of the instant application. As best we can judge, however, applicants have not submitted a supplemental oath or declaration referring to both the application and the preliminary amendment. Nor has the examiner determined whether applicants' preliminary amendment is considered part of the specification as filed. See MPEP § 608.04(b). On these facts, we have proceeded as though the preliminary amendment received August 18, 2000, is not part of the specification as filed.

The question here is whether applicants run afoul of the written description requirement of 35 U.S.C. § 112, first paragraph, by omitting from their claims the step of converting a dialdehyde having formula (2) into its corresponding acetal-protected aldehyde having formula (3). We answer that question in the negative.

In their specification, as filed, applicants describe the step of converting acetal-protected aldehyde having formula (3) into its corresponding aminonitrile having formula (4); converting the aminonitrile into its corresponding amino acid amide having formula (5); subjecting the amino acid amide to enzymatic, enantioselective hydrolysis; and isolating the (S)-amino acid having formula (1). In fact, it is not disputed that applicants, in their original specification, literally describe each step of the multi-step

process recited in appealed claims 1 through 5 and 20.

Additionally, applicants describe the initial step of converting a dialdehyde having formula (2) into its corresponding acetal-protected aldehyde having formula (3) (specification, page 3, lines 3 through 18). According to applicants,

It has been discovered that, in spite of the fact that the selectivity in the first step of the process can be relatively low, an economically attractive process can nevertheless be obtained. [Specification, page 4, lines 12-14]

This means to say that any person skilled in the art would have recognized a downside in converting a dialdehyde having formula (2) into its corresponding acetal-protected aldehyde having formula (3) viz., relatively low selectivity. If that initial step is used, however, "an economically attractive process can nevertheless be obtained."

But it is not necessary or critical to the overall success of applicants' multi-step process that the initial step begin with a dialdehyde having formula (2). On the contrary, any person skilled in the art would have recognized that applicants' multi-step process could begin with an acetal-protected aldehyde having formula (3), thereby skirting the use of dialdehyde (2) entirely. As pointed out by applicants, and not disputed by the examiner, an acetal-protected aldehyde representative of compounds having formula (3) "was known and available at the time the invention was made."

(Paper No. 17, page 12, first paragraph). See Appendix E attached to applicants' Appeal Brief.<sup>1</sup>

On these facts, we find that omitting the step of converting a dialdehyde having formula (2) into its corresponding acetal-protected aldehyde having formula (3) does not run afoul of the written description requirement of 35 U.S.C. § 112, first paragraph. Accordingly, the examiner's rejection of claims 1 through 5 and 20 under 35 U.S.C. § 112, first paragraph, is reversed.

REVERSED

	)	
Sherman D. Winters	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
Demetra J. Mills	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
Eric Grimes	)	
Administrative Patent Judge	)	

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<sup>1</sup> As stated by the examiner, "[i]t is acknowledged that products of formula 3 are known" (Paper No. 18, page 13, line 1).

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