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**Datasheet for the decision
of 8 February 2024**

Case Number: T 2125/21 - 3.3.08

Application Number: 14824390.0

Publication Number: 3083957

IPC: C12N15/10

Language of the proceedings: EN

Title of invention:

Production of encoded chemical libraries

Patent Proprietor:

Philochem AG

Opponent:

Nuevolution A/S

Headword:

encoded chemical libraries/PHILOCHEM

Relevant legal provisions:

EPC Art. 100(b), 108, 111(1)

EPC R. 99(2)

RPBA 2020 Art. 12(2), 12(3), 13(2)

Keyword:

Sufficiency of disclosure (yes)

Primary object of appeal proceedings to review decision

Statement of grounds of appeal - reasons set out clearly and concisely (no)

Amendment to appeal case (yes)

Amendment after summons - taken into account (no)

Decisions cited:

G 0009/91

Catchword:

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Beschwerdekammern

Boards of Appeal

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Case Number: T 2125/21 - 3.3.08

D E C I S I O N
of Technical Board of Appeal 3.3.08
of 8 February 2024

Appellant: Nuevolution A/S
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 27 September
2021 rejecting the opposition filed against
European patent No. 3083957 pursuant to Article
101(2) EPC**

Composition of the Board:

Chairwoman T. Sommerfeld
Members: B. Claes
D. Rogers

Summary of Facts and Submissions

I. The appeal lodged by the opponent (appellant) lies from the decision of the opposition division rejecting the opposition against European patent No. 3 083 957 with the title "*Production of encoded chemical libraries*".

Independent claim 1 of the patent as granted reads:

"1. A method of producing a nucleic acid encoded chemical library comprising:

(i) producing a sub-library according to a method comprising;

(a) providing a population of first nucleic acid strands, each nucleic acid strand being coupled or couplable to a member of a first diverse population of chemical moieties and comprising a non-hybridisable spacer,

(b) contacting the first nucleic acid strands with identifier oligonucleotides comprising a first coding sequence and one or more adaptor oligonucleotides,

such that the one or more adaptor oligonucleotides hybridize to the nucleic acid strands and the identifier oligonucleotides to form a partially double-stranded complex,

wherein each first nucleic acid strand is contacted with an identifier oligonucleotide comprising a first coding sequence that encodes a chemical moiety

that is coupled or couplable to the first nucleic acid strand, and;
wherein each of said one or more adaptor oligonucleotides hybridizes to more than one first nucleic acid strand in the population and more than one different identifier oligonucleotide,

(c) ligating the first nucleic acid strands to the identifier oligonucleotides in the partially double-stranded complexes, such that the identifier oligonucleotides are incorporated into the first nucleic acid strands, thereby producing a sub-library comprising first nucleic acid strands coupled or couplable to a member of a diverse population of chemical moieties, wherein each first nucleic acid strand comprises a first coding sequence that encodes the chemical moiety that is coupled to the first nucleic acid strand and the nonhybridisable spacer;

(ii) hybridizing the first nucleic acid strands to second nucleic acid strands to form double-stranded complexes, wherein the second nucleic acid strands are coupled to a second diverse population of chemical moieties, each second nucleic acid strand comprising a second coding sequence that encodes the chemical moiety that is coupled to it,
the position of the second coding sequence in the second nucleic acid strands corresponding in the double-stranded complex to the position of the spacer in the first nucleic acid strands in the double-stranded complexes, such that the second coding sequences do not preferentially hybridise to the first nucleic acid strands, and

(iii) extending the second nucleic acid strands along the nucleic acid strands to produce a library comprising members having a double strand nucleic acid molecule comprising the first and second nucleic acid strands; the first diverse population of chemical moieties being coupled to the first nucleic acid strands and the second diverse population of chemical moieties being coupled to the second nucleic acid strands, said chemical moieties form pharmacophores in the library members, wherein each second nucleic acid strand comprises first and second coding sequences that encode the chemical moieties from the first and second diverse populations." (emphasis added by the board)

- II. The opposition proceedings were based on the grounds for opposition in Article 100(a) EPC, in relation to novelty (Article 54 EPC) and inventive step (Article 56 EPC), and in Article 100(b) EPC.
- III. With the statement of grounds of appeal the appellant submitted that the decision under appeal was wrong with respect to inventive step and sufficiency of disclosure. In respect of novelty the appellant's submission was limited to the statement: "*The Opponent refers to the arguments in respect of lack of novelty filed with the Statement of Opposition dated February 23, 2019*". The document was annexed to the statement of grounds of appeal.
- IV. In the reply to the appeal, the respondent maintained the patent as granted as the main request and re-submitted five auxiliary requests filed during the opposition proceedings.

V. The parties were summoned to oral proceedings and subsequently the board issued a communication pursuant Article 15(1) RPBA providing the board's preliminary appreciation of substantive and legal matters concerning the appeal.

VI. The submissions and arguments of the parties in appeal in as far as they are relevant for the decision are taken into consideration in the reasons for the decision of the board below.

VII. The following documents are referred to in this decision:

D8: WO 03/076943

D9: WO 2004/039825

VIII. The parties' requests were:

The appellant requested that the decision under appeal be set aside and amended such that the patent be revoked.

The respondent requested that the appeal be dismissed (i.e. patent be maintained as granted; main request), or, alternatively, that the decision under appeal be set aside and the patent be maintained with the set of claims of one of auxiliary requests 1 to 5 filed with the reply to the appeal. The respondent further requested that neither the issue of novelty, nor the issue of inventive step of claim 2 and claim 9, should form part of the appeal proceedings.

Reasons for the Decision

Procedural issue - basis of appeal proceedings

1. The statement of grounds and the reply must contain the appellant's complete case (Article 108 EPC and Article 12(3) RPBA). This is not fulfilled by a passing reference to the facts and evidence put forward in opposition proceedings (see "Case Law of the Boards of Appeal of the EPO", 10th edition 2022, in the following "CLBA", V.A.2.6.3.f) and V.A.2.6.5).
2. The appellant made several statements in the statement of grounds of appeal to the effect that they formally introduced and/or maintained and/or referred to all arguments, facts and evidence put forward in the opposition proceedings (see e.g. points 1.7, 2.1 to 2.4, 4.2 and 6.1). In fact, the appellant seemed to regard all this as being part of their appeal proceedings. This understanding is however not correct.
3. In fact, these statements leave it entirely to the board and the respondent to conjecture in what respect the appellant might consider the decision under appeal to be defective. It is, however, not for the board to identify the issues that may still be a matter of dispute among those raised in each and every submission in the previous proceedings, nor to identify the arguments as to why the impugned decision is incorrect, but for the parties, here the appellant, to bring forward in the statement of grounds and in the reply their line(s) of argument and all the facts and evidence on which they rely in appeal proceedings.

4. Thus, when giving reasons for the decision below the board confines itself to arguments, facts and evidence on which the appellant relied in the appeal proceedings.

Patent as granted (main request)

Sufficiency of disclosure (Article 100(b) EPC)

5. The statement of grounds of appeal, as regards sufficiency of disclosure, was limited to a single argument dealt with in the decision under appeal in the context of inventive step, namely that claim 1 embraced methods in which the adaptor was not required to be displaced from the nucleic acid strand and identifier oligo nucleotide to which the adaptor oligonucleotide was hybridized (see points 43 to 45 of the appealed decision). According to the appellant, since claim 1 did not recite such a displacement step, the ground of opposition under Article 100(b)EPC prejudiced maintaining the patent as granted because it was not possible to form double-stranded complexes while the adaptor oligonucleotides were still hybridized to nucleic acid strands and identifier oligonucleotides.
6. In the decision under appeal, the opposition division dismissed the argument under sufficiency of disclosure by noting that the appellant, by the same token, had submitted (in the context of inventive step) that it constituted common general knowledge of the skilled person that it was required, in order to successfully obtain the envisaged and claimed double stranded complexes, that the adaptor was removed/displaced after ligation step (i) (c) and before hybridization step (ii) in claim 1 (see section I.).

7. The board has not seen arguments from the side of the appellant that this latter fact on which the decision under appeal is based is wrong. Accordingly, the board has no reason to hold that the ground of opposition under Article 100(b) prejudices maintaining the patent as granted.

Novelty (Article 100(a) EPC, Article 54 EPC)

8. Under Article 108 EPC and Article 12(3) RPBA the appellant has to present a complete case in the statement of grounds of appeal that allows the board and the other party to understand why the contested decision should be reversed without having to make any further investigations on their own account (see also point 1.).
9. In appeal, the appellant has neither alleged that the claimed subject-matter lacks novelty nor submitted arguments that the decision under appeal in respect of novelty is wrong, but merely referred to arguments in this respect "*filed with the Statement of Opposition dated February 23, 2019*" (see point III. above).
10. In the light of the above, the board does not take into account the novelty objections filed by the appellant in the opposition proceedings (see point 4. and CLBA, V.A.3.2.2) and, accordingly, sees no reason to disagree with the decision under appeal that the claimed subject-matter is novel.

Inventive step (Article 100(a) EPC, Article 56 EPC)

11. The primary purpose of the appeal procedure (see also point 1. above) is to give the losing party, here the

opponent/appellant, a possibility to challenge the decision under appeal on its merits (see Article 111(1) EPC and decision G 9/91, OJ EPO 1993, 408, Reasons 18). Article 12(2) RPBA codifies that in view of the primary object of the appeal proceedings to review the decision under appeal in a judicial manner, a party's appeal case is to be directed to the requests, facts, objections, arguments and evidence on which the decision under appeal was based. Evidently, the review of the decision under appeal is based on the submissions and requests of the parties and also encompasses the review of the opposition division's reasoning, in particular, here, the assessment of the appellant's objections considered in the decision under appeal. In order to allow the board to review the decision under appeal in a judicial manner Article 12(3) RPBA further requires the statement of grounds of appeal to set out clearly and concisely the reasons why it is requested that the decision under appeal be reversed, amended or upheld, and should specify expressly all the requests, facts, objections, arguments and evidence relied on (see also points 1. and 8.) and the board has a discretion not to admit any submission by an appellant that does not meet these criteria.

12. The decision of the opposition division in this regard can be summarised as follows:
 - 12.1 In point 36 of the decision under appeal, the opposition division agreed with the respondent that the objective technical problem, when starting from the methods for generating the ESAC libraries (ESACHEL) disclosed in document D8 as representing the closest prior art, could be formulated as the provision of an

improved method for the preparation of an ESACHEL type library ("improvement"-problem).

12.2 The opposition division based this formulation on the technical difference that the method of claim 1, as compared to the method in document D8, included the additional step of synthesising a sub-library (corresponding to compounds "A" of Figure 5 in document D8) using an adaptor (or "splint") to line up two oligonucleotide fragments (method step (i)(b) of claim 1; see point 34, first two paragraphs, of the decision under appeal). Document D8, instead appeared to use commercial suppliers for use in the sub-libraries "A" and "B". In respect of the technical effect of this difference, the respondent convinced the opposition division that the provision in the synthesis step that *"each of said one or more adaptor oligonucleotides hybridizes to more than one first nucleic acid strand in the population and more than one different identifier oligonucleotide"* (hereinafter feature "A", underlined in section I.) led to *"the use of a reduced number of oligo's"* (see point 35 of the decision under appeal). Hence, the formulation of the technical problem as an improvement.

12.3 At the same time the opposition division dismissed the opponent's argument that *"the difference(s) do(es) not result in an effect, because the end-library is the same"* and the *"claimed method would therefore provide an alternative"* (the "alternative"-problem; see also point 35 of the decision under appeal).

12.4 Having had due regard of the disclosures in documents D8 and D9, the opposition division then decided that neither document D9 nor any other cited document disclosed a hint *"to prepare a (sub)library of*

nucleic acid acid coded chemical compounds using splint technology, wherein the splint is characterised by [feature "A"]" (see point 42 of the decision under appeal) and thus concluded that, in respect of the "improvement" technical problem adhered to by the opposition division, the subject-matter of independent claim 1 was inventive (see point 48 of the decision under appeal).

12.5 With regard to independent claims 2 and 9 the opposition division held that both these claims comprised a feature comparable in scope to feature "A" (see point 12.1) on the basis of which the inventive step of claim 1 was acknowledged, namely in claim 2 the feature *"wherein all the first nucleic acid strands in the sub-library are contacted with the same adaptor oligonucleotide"*, and in claim 9 the feature *"wherein each nucleic acid spacer hybridizes to more than one first nucleic acid strand in the population and more than one different first identifier nucleotides"*.

12.6 The opposition division thus concluded that the subject-matter of the contested patent was inventive (see point 53 of the decision under appeal).

13. The sole submissions in the statement of grounds of appeal which relate to *the objective technical problem* solved by the claimed subject-matter (see point 12.1) have been made solely in the context of claim 1:

"5.8 The method of claim 1 is illustrated in Figs. 1A and 1B of the Patent. The sub-library produced in the method of claim 1 is at least substantially identical to the sub-library illustrated in Figure 5 of D8.

5.9 *D8 is directed to methods of producing encoded self-assembling chemical (ESAC) libraries, as, e.g., disclosed in Example 3 of D8 with reference to Example 2 and the illustrations in Figures 3 and 5 of D8.*

5.10 *The technical problem to be solved is how to provide an alternative method of producing a nucleic acid encoded chemical library."*

and

"5.68 Even assuming that the objective technical problem to be solved would be merely providing an alternative to well-known nucleic-acid encoded chemical library synthesis methods in the prior art, there can be no inventive step associated with the method of granted claim 1."

14. Thus, in appeal the appellant adhered to the same objective technical problem as they had formulated in the opposition proceedings (i.e. the "alternative"-problem, see point 12.3), but without providing reasons in the grounds of appeal as to why the objective technical problem defined by the opposition division (the "improvement"-problem) was wrong, or why the opposition division was wrong to dismiss the technical problem as proposed by the opponent on opposition.

15. Furthermore, the whole body of arguments submitted by the appellant in the context of inventive step in the statement of grounds of appeal was limited to obviousness of the subject-matter of the independent claims in respect of the less ambitious "alternative"-problem mainly based on the disclosure of document D9.

In fact, arguments dedicated to obviousness of the claimed subject-matter in the context of the "improved"-problem as adhered to by the opposition division in the decision under appeal are absent.

16. Accordingly, in the light of the above considerations the board has no choice but to conclude that it has not seen in the appellant's statement of grounds of appeal arguments why the decision under appeal and the reasons given therein with respect of inventive step of the independent claims are incorrect as required by Article 108, third sentence, EPC and Rule 99(2) EPC.
17. During oral proceedings, the appellant argued, firstly, that it was *implicit* in the submissions in the statement of grounds of appeal that the appellant disagreed with the formulation of the technical problem in the decision under appeal and why they disagreed, and presented, secondly, reasons for not agreeing to the "improvement"-problem as adhered to by the opposition division and reasons in support of the "alternative"-problem.
18. As concerns the first argument, Article 12(3) RPBA requires the statement of grounds of appeal to set out *clearly and concisely* the reasons why it is requested that the decision under appeal be reversed, amended or upheld. Therefore, independently of whether or not the appellant's argument holds true or not in substance, such *implicit* disclosure in the statement of grounds of appeal cannot meet the "clearly and concisely"-requirement of Article 12(3) RPBA.
19. With regard to the second argument, in so far as the the appellant has given explicit reasons against the adoption of the "improvement"-problem and in favour of

the "alternative"-problem, these reasons were submitted for the first time during the oral proceedings, and thus constitute an amendment to the appellant's appeal case within the meaning of Article 13(2) RPBA which, in principle, are not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons. In the case in hand, the appellant has not submitted any reasons for the board to exercise their discretion and admit the amendment under Article 13(2) RPBA.

20. Accordingly, the board decided to not admit the amendment in the appeal proceedings. As such, the board sees no reason to disagree with the decision under appeal that the claimed subject-matter involves an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairwoman:



L. Malécot-Grob

T. Sommerfeld

Decision electronically authenticated