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**Datasheet for the decision
of 22 March 2018**

Case Number: T 0005/14 - 3.3.08

Application Number: 01927056.0

Publication Number: 1272669

IPC: C12N15/10, C12N15/63,
C12N15/67, C12N15/80, C12Q1/02,
C12Q1/25, C12Q1/68, C12N1/15

Language of the proceedings: EN

Title of invention:
HIGH-THROUGHPUT SCREENING OF EXPRESSED DNA LIBRARIES IN
FILAMENTOUS FUNGI

Patent Proprietor:
Dyadic International (USA), Inc.

Opponent:
NOVOZYMES A/S

Headword:
Screening filamentous fungi/DYADIC INTERNATIONAL

Relevant legal provisions:
EPC Art. 113(1), 123(2)
RPBA Art. 13(1), 13(3)

Keyword:

Request upheld by opposition division - added subject-matter
(yes)

Auxiliary requests - admitted into the appeal proceedings (no)

Right to be heard - opportunity to comment (yes)

Revocation of the patent (yes)

Decisions cited:

T 0607/93, T 0190/99, T 1067/02, T 1408/04, T 0305/07,

T 1582/08, T 2487/12

Catchword:



Beschwerdekammern

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Case Number: T 0005/14 - 3.3.08

D E C I S I O N
of Technical Board of Appeal 3.3.08
of 22 March 2018

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
16 October 2013 concerning maintenance of the
European Patent No. 1272669 in amended form.**

Composition of the Board:

Chairman B. Stolz
Members: P. Julià
D. Rogers

Summary of Facts and Submissions

- I. European patent no. 1 272 669 is based on European patent application no. 01 927 056.0, filed under the Patent Cooperation Treaty and published as WO 01/79558 (hereinafter "the patent application"). The patent was opposed on the grounds as set forth in Articles 100(a), (b) and (c) EPC. The opposition division considered the main request (claims as granted) to contravene Article 100(c) EPC and, in an interlocutory decision (Articles 101(3)(a) and 106(2) EPC), decided to maintain the patent on the basis of a first auxiliary request filed at the oral proceedings before the opposition division.
- II. An appeal was lodged by the opponent (appellant). With the statement setting out the grounds of appeal, the appellant filed new documentary evidence and maintained the objections raised under Articles 123(2), 84, 83, 54 and 56 EPC at first instance against the claim request upheld by the opposition division.
- III. The patent proprietor (respondent) replied to the statement of grounds of appeal and filed new documentary evidence.
- IV. Both parties requested oral proceedings as an auxiliary measure.
- V. The parties were summoned to oral proceedings. In a communication pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), they were informed of the board's provisional, non-binding opinion on the issues of the case. In particular, the parties were informed that claim 1 of the claim request

upheld by the opposition division was considered to contravene Article 123(2) EPC.

VI. In reply thereto, the respondent, without making any substantive submission, withdrew its request for oral proceedings and informed the board of its intention not to attend the oral proceedings.

VII. Oral proceedings were held on 22 March 2018 in the absence of the respondent.

VIII. Claim 1 of the patent application reads as follows :

"1. A method of expressing a plurality of proteins encoded by a library of DNA vectors, wherein the library of vectors comprises a plurality of different vectors, each different vector comprising a different protein-encoding nucleic acid sequence, said nucleic acid sequence being operably linked to an expression-regulating region and optionally a secretion signal encoding sequence, the method comprising the steps of:

(a) providing a filamentous fungus having a phenotype characterized by growth in suspension and characterized by the production of transferable reproductive elements in suspension;

(b) stably transforming said filamentous fungus with said library of DNA vectors so as to introduce into each of a plurality of the individual fungi at least one heterologous protein-encoding nucleic acid sequence;

(c) culturing the transformed mutant filamentous fungi under conditions conducive to formation of transferable reproductive elements in suspension;

(d) separating from one another a plurality of transferable reproductive elements; and

(e) culturing into monoclonal cultures or monoclonal colonies the individual transferable reproductive elements, under conditions conducive to expression of the heterologous proteins encoded by the heterologous protein-encoding nucleic acid sequences." (emphasis by the board).

IX. Claim 1 of the patent as granted and of the claim request upheld by the opposition division are identical and read as claim 1 of the patent application, except for the following amendments introduced into steps (a), (b), (c) and (e):

"1. ... [as claim 1 of the patent application] ...

(a) providing a plurality of individual filamentous fungi, said fungi having a phenotype characterized by growth in suspension and characterized by the production of transferable reproductive elements which are monoclonal and readily separated from one another in suspension;

(b) stably transforming said filamentous fungi with said library of DNA vectors so as to introduce into each of a plurality of the individual fungi at least one homologous or heterologous protein-encoding nucleic acid sequence;

(c) culturing the transformed filamentous fungi in suspension under conditions conducive to formation of transferable reproductive elements;

...

(e) culturing into monoclonal cultures or monoclonal colonies the individual transferable reproductive elements, under conditions conducive to expression of the proteins encoded by the homologous or heterologous protein-encoding nucleic acid sequences." (emphasis by the board)

- X. The submissions made by the appellant, insofar as relevant to the present decision, may be summarised as follows:

Article 123(2) EPC

According to the case law of the Boards of Appeal, there was no need to limit the interpretation of a claim in the light of the description, if the claim was technically meaningful and not contradictory in itself. The feature "a plurality of individual filamentous fungi" in step (a) of claim 1 was neither defined in the description nor present in step (a) of claim 1 of the patent application. Its presence in step (a) of claim 1 allowed two reasonable and technically logical interpretations, namely the provision of a mixture of (at least) two or more individual filamentous fungi, and the provision of a clonal plurality of individual filamentous fungi. However, there was no basis in the patent application for the first interpretation and therefore, claim 1 comprised subject-matter that went beyond the subject-matter disclosed in the patent application.

Contrary to the assertion made by the opposition division in the decision under appeal, the first interpretation was not illogical and made technical

sense. The provision of a mixture of several (a plurality of) individual filamentous fungi with the properties disclosed in the patent application could well be used for screening a plurality of proteins encoded by a library of DNA vectors and, simultaneously, screening the properties of the different individual filamentous fungi as host cells for expression of said library of DNA vectors. There was no technical hurdle to overcome and it did not pose any challenge for a person skilled in the art to provide a library of DNA vectors, culture conditions and transformation methods for a mixture (plurality) of highly related individual filamentous fungi, such as for instance (at least) two strains of highly related *Aspergillus sojae*.

Admission of the auxiliary claim requests filed during opposition procedure

According to Article 12(2) RPBA, the reply to the statement of grounds of appeal has to contain a respondent's complete case. In its reply to the statement of grounds of appeal, the respondent did not file any auxiliary request but referred only to the possibility of submitting auxiliary requests in a general manner and only if necessity arose. It was only in reply to the board's communication, four years after filing the reply to the statement of grounds of appeal and a little more than one month before the scheduled oral proceedings, that the respondent referred to the auxiliary claim requests filed during opposition proceedings. This was an amendment of the respondent's case in the sense of Article 13(1) RPBA and, accordingly, it had to be admitted at the board's discretion. The amendment was late filed and the respondent did not provide reasons to explain why it

had been made at a late stage of the proceedings and what objections these new auxiliary claim requests intended to address.

- XI. The submissions of the respondent, as made in writing and insofar as relevant to the present decision, may be summarised as follows:

Article 123(2) EPC

The feature "a plurality of individual filamentous fungi" in step (a) of claim 1 merely brought the language of this step in line with that used in the rest of claim 1 as originally filed, in particular, with the language used in step (b) of original claim 1. Indeed, support for introducing this feature into step (a) of claim 1 was clearly found in the original language of claim 1 of the patent application. The claim had not to be read with a mind desirous of misunderstanding the original disclosure; what a skilled person understood to be technically meaningful teaching, was what claim 1 expressed, and there was no contradiction with the disclosure of the patent application.

Admission of the auxiliary claim requests filed during opposition procedure

In its reply to the board's communication, the respondent, without further explanation, stated that it maintained the auxiliary claim requests filed during opposition proceedings.

- XII. The appellant (opponent) requested to set aside the decision under appeal and to revoke the patent.

XIII. The respondent (patent proprietor) requested, in writing, to dismiss the appeal or, in the alternative, "... we maintain the auxiliary claim requests filed during opposition proceedings. If the Board is minded to maintain the patent based upon one of these claim requests, we ask for the case to be remitted to the OD to give us the opportunity to provide a corresponding amended description".

Reasons for the Decision

Article 113(1) EPC

1. In the communication pursuant to Article 15(1) RPBA, the board expressed its provisional, non-binding opinion on the objections raised by the appellant under, *inter alia*, Article 123(2) EPC and concluded that the request upheld by the opposition division contravened this article. The respondent did not make any substantive submission in reply to said communication and merely stated that "[w]e maintain the auxiliary claim requests filed during opposition procedure". Nor did the respondent attend the oral proceedings before the board held on 22 March 2018.
2. By neither replying to the board's communication in substance nor attending the oral proceedings before the board, the respondent has not availed itself of the opportunity to address, comment or put forward further arguments on the issues dealt with in the present decision, in particular on the objections raised under Article 123(2) EPC and on the admission into the appeal proceedings of the "auxiliary claim requests filed during the opposition proceedings" (Article 113(1) EPC).

The claim request upheld by the opposition division
Article 123(2) EPC

3. In the decision under appeal, the opposition division examined and decided on the objections raised under Article 123(2) EPC by the appellant against the main request (claims as granted) and the first auxiliary request then on file (cf. pages 10 and 11, point C.1 of the decision under appeal). The objections raised under this article at first instance were maintained by the appellant in the statement setting out its grounds of appeal, and addressed by the board in its communication pursuant to Article 15(1) RPBA (cf. point V *supra*).
4. Three features present in claim 1 of the request upheld by the opposition division were objected under Article 123(2) EPC, namely the features "a plurality of individual filamentous fungi" and "the production of transferable reproductive elements which are monoclonal and readily separated from one another in suspension" in step (a), and the feature "homologous protein encoding nucleic acid sequence" in steps (b) and (e) (cf. point IX *supra*).
5. In its communication, the board stated its provisional, non-binding opinion that the request upheld by the opposition division contravened Article 123(2) EPC.
6. Since the respondent has not provided substantive arguments in reply to the board's communication, the board sees no reason to deviate from its provisional, non-binding opinion as expressed in its communication pursuant to Article 15(1) RPBA.

The feature "a plurality of individual filamentous fungi" in step (a) of claim 1

7. According to the appellant, the feature "a plurality of individual filamentous fungi" in step (a) of claim 1 can be interpreted in two ways. According to the first, this feature defines the presence of several (a plurality of) individual filamentous fungi, wherein all of them are from the same species, subspecies, etc. According to the second interpretation, this feature defines the presence of different (a plurality of) individual filamentous fungi, wherein the individual filamentous fungi are from (at least two) different species, subspecies, etc. Whilst according to the first interpretation the term "plurality" merely has a numerical character (presence of a certain number of fungi of the same individual filamentous fungus (strain)), this is not the case for the second interpretation according to which the term "plurality" concerns the actual nature of the individual filamentous fungus itself (presence of a mixture of at least two distinct strains of fungi).

8. In the board's view, both interpretations of the term "plurality" are technically possible and there is nothing in claim 1 that excludes one or the other interpretation. Moreover, since the term "plurality" is clear in itself, there is no reason to use the description or the whole content of the patent application for interpreting this term and thereby reading limitations which are not present into claim 1 itself (cf. "Case Law of the Boards of Appeal of the EPO", 8th edition, II.A.3.1, 270, and II.A.6.3.4, 292, for clarity of the claims and reading of additional limitations into them; see also, *inter alia*, the decisions T 607/93 of 14 February 1996, point 2.2 of

the Reasons; T 1582/08 of 7 May 2013, point 14 of the Reasons; and T 2487/12 of 27 October 2015, point 1.13 of the Reasons).

9. In its reply to the statement of grounds of appeal, the respondent referred to the decision of the opposition division wherein it was stated that the appellant's second interpretation relied on "a misconstruction of the original disclosure, with a mind desirous of misunderstanding", in other words, the second embodiment was alleged to be illogical and not to make technical sense (cf. T 190/99 of 6 March 2001, point 2.4 of the Reasons).

10. The board agrees that a skilled person, when considering a claim, should rule out interpretations which are illogical or which do not make technical sense (cf. "Case Law", *supra*, II.A.6.1, 287). However, the case law also states that a "mind willing to understand" does not require that a broad term be interpreted more narrowly than necessary, but instead that it be interpreted taking into consideration all technically sensible meanings (cf. *inter alia*, T 1408/04 of 17 November 2006, point 1 of the Reasons; and T 1582/08, *supra*, point 16 of the Reasons).

11. In the present case, the board considers that the provision of a mixture of different strains, as required by the second interpretation of the term "plurality", is not illogical and makes technical sense (cf. point 11.2 of the board's communication pursuant to Article 15(1) RPBA). As argued by the appellant, a mixture of highly related filamentous fungi might well be contemplated for several purposes such as, for instance, the simultaneous screening of "a plurality of proteins encoded by a library of DNA vectors" and the

most suitable (individual filamentous fungi) hosts for the expression of these proteins. In the board's view, the provision of suitable (suspension) culture and transformation conditions, an appropriate library of DNA vectors and culture conditions conducive to the expression of a plurality of proteins encoded by different protein-encoding nucleic acid sequences, does not involve any technical problems or difficulties, particularly, when using a plurality of highly related individual filamentous fungi. Indeed, the use of broad fungal host range vectors with appropriate broad fungal host range promoters, markers, etc. is well-known and widely used in the technical field of filamentous fungi as host cells for expression of protein-encoded nucleic acid sequences (cf. page 57, Example K of the patent application).

12. Therefore, the board considers the method of claim 1 to cover indeed two different embodiments, the first based on the use of a plurality of fungi, all from the same strain, the second based on the use of a mixture of different strains of filamentous fungi.

13. It is established case law of the Boards of Appeal that, for the purpose of Article 123(2) EPC, when a claim embraces several embodiments, all of them must be directly and unambiguously derivable from the application as filed (cf. "Case Law", *supra*, II.E.1.9.7, 447; see also, *inter alia*, the decisions T 1067/02 of 30 November 2004, point 3 of the Reasons; and T 305/07 of 20 May 2011, point 14 of the Reasons). It has not been contested, and the board sees no reason to take a different view, that the first embodiment covered by claim 1 is directly and unambiguously derivable from the whole content of the patent application. It is, however, the second embodiment

which is argued by the appellant not to have a basis in the patent application.

14. The respondent has referred to the feature "each of a plurality of the individual fungi" present in step (b) of claim 1 of the patent application as a basis for the second embodiment. According to the respondent, the replacement of the feature "a filamentous fungus" in step (a) of claim 1 of the patent application by the feature "a plurality of individual filamentous fungi" merely brought in line the wording of step (a) with that of step (b) and with the whole content of the patent application. The amendment did not add subject matter which extended beyond the content of the patent application.

15. The board, however, does not follow the respondent's argument. In the board's view, the presence of the feature "a filamentous fungus" (emphasis by the board) - in singular - in step (a) of claim 1 of the patent application clearly excludes the use of a mixture of different strains of filamentous fungi, even when read in combination with the feature "each of a plurality of the individual fungi" (emphasis by the board) in step (b). It is only by the introduction of the contested feature into step (a) of claim 1 that both interpretations become possible. Thus, the feature of step (b) of claim 1 of the patent application cannot be seen as a direct and unambiguous disclosure of the contested feature. Apart from step (b) of claim 1 of the patent application, the respondent has not indicated any other basis in the patent application for the contested feature. Nor could the board find any on its own.

Conclusion on Article 123(2) EPC

16. The board concludes that claim 1 of the request upheld by the opposition division comprises subject matter that was not directly and unambiguously disclosed in the patent application and therefore contravenes Article 123(2) EPC.

Admission of the auxiliary claim requests filed during opposition procedure

17. In its reply to the communication of the board, the respondent, without providing any substantive arguments, stated that "we maintain the auxiliary claim requests filed during opposition proceedings".
18. The board observes that, in its reply to the statement of grounds of appeal, the respondent's sole request, apart from the auxiliary request for oral proceedings, was to reject the appeal (cf. page 1 under the heading "Requests", and page 14, last full paragraph of the respondent's reply to the statement of grounds of appeal). It did not refer to any of "the auxiliary claim requests filed during opposition proceedings" but merely stated that "[w]e will, should the necessity arise, submit Auxiliary Requests which remove any obstacles that we may have overlooked" (cf. paragraph bridging pages 14 and 15 of the respondent's reply to the statement of grounds of appeal).
19. The respondent's attempt to introduce "the auxiliary claim requests filed during opposition proceedings" into the appeal proceedings with its reply to the board's communication represents a change of the respondent's case and thus, the board has a discretion

as to whether to admit these requests into the appeal proceedings (Articles 13(1) and 13(3) RPBA).

20. In its reply to the communication of the board, the respondent has not provided any reason why these auxiliary claim requests have been filed at this advanced stage of the proceedings and why they could not have been filed earlier.

21. Moreover, the respondent has introduced these "auxiliary claim requests filed during opposition" into the appeal proceedings but has not indicated which of the objections raised by the appellant, or addressed by the board in its communication, are dealt with in these requests. The respondent has not stated the factual reasons why these requests overcome these objections and, if so, in which manner. The respondent has failed to provide any substantiation of its case. This situation is similar to that in which an appellant, in its statement of grounds of appeal, refers generally to earlier submissions (cf. "Case Law", *supra*, IV.E.2.6.4.a), 1102) or in which it does not provide adequate substantiation *vis-à-vis* the reasons given in the decision under appeal (cf. "Case Law", *supra*, IV.E.2.6.3.b), 1098). In these cases, submissions of this kind have not been accepted or admitted by the Boards. The board sees no reason for departing from this practice in the present case.

22. Therefore, the board, exercising its discretion under Article 13(1) RPBA, decides not to admit the respondent's "auxiliary claim requests filed during opposition procedure" into the appeal proceedings.

Conclusion

23. Since the request upheld by the opposition division contravenes Article 123(2) EPC and does not fulfil the requirements of the EPC, and the "auxiliary claim requests filed during opposition proceedings" have not been admitted into the present appeal proceedings, there are no claim requests on file on the basis of which the board could consider the maintenance of the patent. Therefore, the decision under appeal must be set aside and the patent revoked.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



L. Malécot-Grob

B. Stolz

Decision electronically authenticated