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

Case Number: T 1103/15 - 3.3.03

Application Number: 02784000.8

Publication Number: 1458805

IPC: C08L1/02, C08B1/00, C08B16/00

Language of the proceedings: EN

Title of invention:
DISSOLUTION AND PROCESSING OF CELLULOSE USING IONIC LIQUIDS

Patent Proprietor:
The University of Alabama

Opponent:
Eder, Michael

Relevant legal provisions:
EPC Art. 87(1), 54, 123(2)

Keyword:
Priority - transfer of priority right
Novelty - Main request, Auxiliary requests I-VII (no)
Amendments - Auxiliary request VIII - allowable (no)

Decisions cited:

T 0205/14, T 0517/14, T 0577/11, T 1201/14, T 0074/00,
J 0019/87, G 0009/92, G 0004/93



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Case Number: T 1103/15 - 3.3.03

D E C I S I O N
of Technical Board of Appeal 3.3.03
of 22 February 2018

Appellant: The University of Alabama
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
13 March 2015 concerning maintenance of the
European Patent No. 1458805 in amended form.**

Composition of the Board:

Chairman D. Semino
Members: D. Marquis
R. Cramer

Summary of Facts and Submissions

- I. The appeal lies against the decision of the opposition division posted on 13 March 2015 concerning the maintenance of European patent No. 1 458 805, granted on European application 02 784 000.8 claiming the priority of US 326704 P from 3 October 2001, in amended form.

- II. The application as originally filed contained 62 claims, claim 1 reading as follows:

"1. A method for dissolving cellulose that comprises admixing cellulose with a molten ionic liquid in the substantial absence of water or a nitrogen-containing base to form an admixture, wherein said ionic liquid is comprised of cations and anions, and agitating the admixture until dissolution is complete."

- III. The European patent was granted on the basis of 32 claims, claim 1 reading as follows:

"1. A method for dissolving cellulose that comprises admixing cellulose with a molten ionic liquid that is molten at a temperature of less than 150°C and having less than 5 weight percent of a nitrogen-containing base to form an admixture, wherein said ionic liquid is comprised of cations and anions, and agitating the admixture until dissolution is complete."

- IV. A notice of opposition was filed in which revocation of the patent in its entirety was requested.

- V. During opposition proceedings, the following documents *inter alia* were cited:

D3: Swatloski, R.P., Spear, S.K., Holbrey, J.D., Rogers, R.D. (2002) Dissolution of Cellulose with Ionic Liquids, Journal of the American Chemical Society, Vol. 124, pages 4974-4975, published on the Web on 17 April 2002

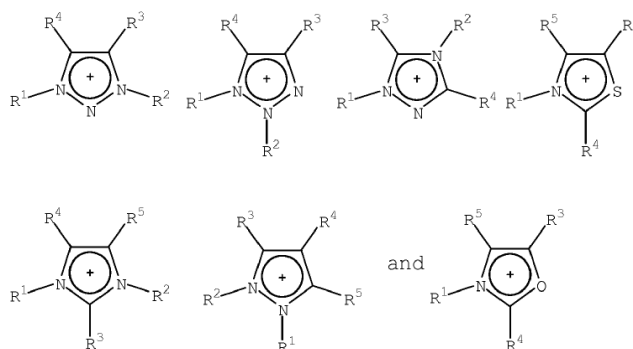
D16: Extract from UK Court Decision "Idenix Pharmaceuticals, Inc. vs Gilead Sciences, Inc." (2014) EWHC3916

- VI. The decision of the opposition division was announced at the oral proceedings on 18 February 2015. The decision was based on a main request (claims 1-32 as granted), on auxiliary requests I to V filed on 19 March 2013 (renumbered as auxiliary request I, II and IV to VI), on auxiliary requests III and VII filed on 17 December 2014 and on auxiliary request VIII filed during oral proceedings.
- VII. According to the decision under appeal claims 1 and 15 of the patent as granted were not novel over document D3. Document D3 was found to be state of the art. It was an article published before the filing date of the application underlying the patent in suit but after the date of the application from which priority was claimed. However, the claim to priority was not valid in view of the fact that the application underlying the patent in suit was not filed by the same person as the one who filed the earlier application or by his successor in title (Article 87(1) EPC). The same conclusion on novelty in view of D3 also applied to auxiliary requests I, II, IV, V and VI. As to auxiliary requests III and VII, they contained amendments which did not fulfill the requirements of Article 123(2) EPC. The patent was maintained on the basis of auxiliary

VIII as that request was found to satisfy the requirements of the EPC.

VIII. The patent proprietor (appellant) lodged an appeal against that decision. The request for oral proceedings filed with the statement of grounds of appeal was later withdrawn on 2 October 2017. With the statement of grounds of appeal auxiliary requests I to IX were filed:

Claim 1 of auxiliary request I differs from claim 1 as granted (main request) in that the "cations have a structure that corresponds to a formula selected from the group consisting of



wherein R¹ and R² are independently a C₁-C₆ alkyl group or a C₁-C₆ alkoxyalkyl group, and R³, R⁴, R⁵ (R³-R⁵) are independently a hydrido, a C₁-C₆ alkyl group, a C₁-C₆ alkoxyalkyl group or a C₁-C₆ alkoxy group."

Claim 1 of auxiliary request II differs from claim 1 as granted (main request) in that the "cation is a 1,3-di-C₁-C₆-alkyl imidazolium ion".

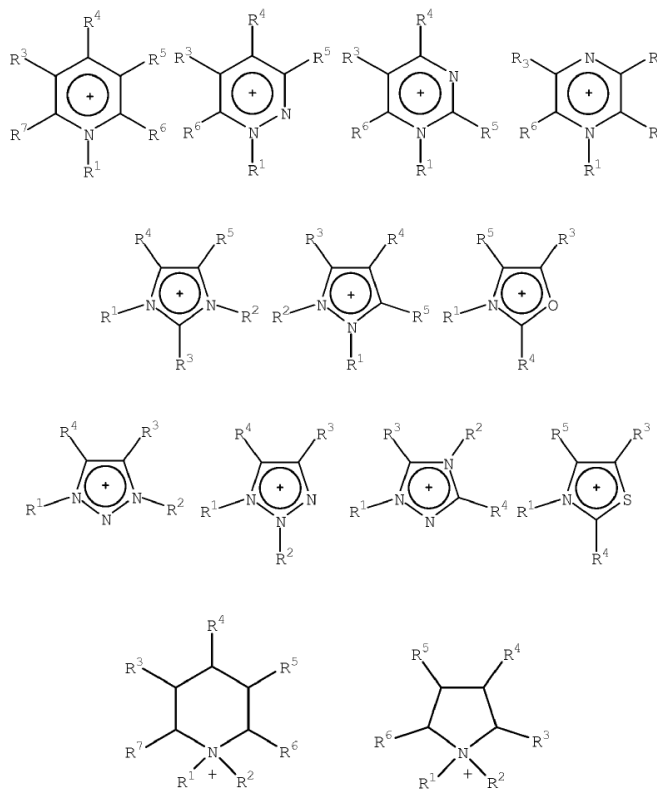
Claim 1 of auxiliary request III differs from claim 1 as granted (main request) in that the "cation is a 1,3-

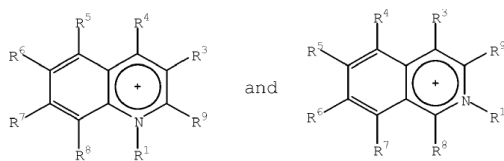
di-C₁-C₆-alkyl imidazolium ion, and wherein one of said 1,3-di-C₁-C₆-alkyl groups is methyl".

Claim 1 of auxiliary requests IV, V, VI and VII correspond to claim 1 of the main request and claim 1 of auxiliary requests I, II and III respectively in which the maximum amount of nitrogen-containing base used to form the admixture of cellulose with a molten ionic liquid is further limited to "less than 1 weight percent".

Claim 1 of auxiliary request VIII is based on claim 1 of the main request "wherein the anions of said ionic liquid are C₁-C₆ carboxylate".

Claim 1 of auxiliary request IX is based on claim 1 of the main request "wherein the cations of said ionic liquid are selected from the group consisting of





wherein R¹ and R² are independently a C₁-C₆ alkyl group or a C₁-C₆ alkoxyalkyl group, and R³, R⁴, R⁵, R⁶, R⁷, R⁸ and R⁹ (R³-R⁹), when present, are independently a hydrido, a C₁-C₆ alkyl, a C₁-C₆ alkoxyalkyl group or a C₁-C₆ alkoxy group, and the anions of the ionic liquid are C₁-C₆ carboxylate."

- IX. On 9 August 2017, the opponent (respondent) informed the Board that he would not attend the oral proceedings scheduled on 22 February 2018.
- X. In a communication sent in preparation of oral proceedings the Board summarised the points to be dealt with and provided a preliminary view on the disputed issues.
- XI. Oral proceedings were held on 22 February 2018 in the absence of both parties.
- XII. The arguments provided by the appellant, as far as relevant to the present decision, can be summarised as follows:

Main request

Priority claim

The question of entitlement to priority should be assessed in accordance with the appropriate national law which in this case is US law.

There has been no express transfer of the right to claim priority from the applicants of the earlier application to the first-named applicant of the subsequent application.

The applicants of the earlier application were the inventors, as was required by US law applicable at the time of its filing. They were however also employees of the first-named applicant of the subsequent application - The University of Alabama - and they had the obligation to comply with university policies. Those policies obliged the inventors/employees to assign their rights relating to inventions to the university. This obligation meant that the university had an equitable right to acquire legal title. This equitable right involved the right to claim priority. As was held in decision J 19/87, an equitable owner is deemed to be a successor in title within the meaning of Article 87(1) EPC.

The claim to priority of the patent in suit was therefore valid. If there still was any uncertainty because of the complexity of the issues in this case, the benefit of the doubt be accorded in favour of the proprietor.

As a result, D3 was not prior art under Article 54(2) EPC.

Auxiliary requests I to IX

Claim 1 of the auxiliary requests I to IV was novel over D3 for the same reasons as claim 1 of the main request. No comments were needed for the requests V-VII which were based on a combination of earlier requests. As to claim 1 of auxiliary request VIII, it resulted

from a combination of claims 1 and 3. Novelty of that request was established by the limitation to carboxylates. As the opposition division considered that the claims of auxiliary request IX satisfied the EPC, these claims could not be considered in appeal.

XIII. The appellant requested in writing that the decision under appeal be set aside and the patent be maintained as granted (main request), or alternatively be maintained in amended form according to one of auxiliary requests I to IX, all filed with the statement of grounds of appeal, whereby auxiliary request IX corresponded to the patent in the version as maintained by the opposition division.

XIV. The respondent did not submit any arguments or requests.

Reasons for the Decision

Main request

1. Priority claim

1.1 In its contested decision, the opposition division arrived at the conclusion that the priority US 326704 P of 3 October 2001 was not valid. D3, a document published on 17 April 2002, before the filing date of the patent in suit (3 October 2002), was therefore a document according to Article 54(2) EPC for the claimed subject matter and its content anticipated claims 1 and 15 of the main request (point 2.2.2.4 on page 15 of the decision).

1.2 In the statement of grounds of appeal the appellant did not contest that the main request lacked novelty over

D3. The question that the Board had to answer was rather whether the right of priority had been validly claimed to determine whether D3 was a document according to Article 54(2) EPC or not.

- 1.3 According to board of appeal case law, a person who claims he is a successor in title within the meaning of Article 87(1) EPC and is therefore entitled to claim priority has to prove his entitlement where the validity of the claimed priority is at stake (T 205/14, Reasons Nr. 3.5; T 517/14, Reasons Nr. 2.6; T 577/11, Reasons Nr. 6.1; T 1201/14, Reasons Nr. 3.2.2.2). The Board can therefore not follow the appellant's argument that if there is uncertainty about the validity of a priority claim, the patent proprietor should enjoy the benefit of the doubt.
- 1.4 According to the appellant, the question whether the right to claim priority has been validly acquired by the applicant of the subsequent application is a matter of national law. This is also the position taken in several board of appeal decisions (T 205/14, Reasons Nr. 3.6.3; T 517/14, Reasons Nr. 2.7.3; T 1201/14, Reasons Nr. 3.1.2). The Board agrees with the appellant that the applicable national law would then be US law, but notes that the appellant does not seem to be sure whether it is a question of federal law or state law.
- 1.5 If a party makes statements about conclusions to be drawn on the basis of the applicable national law, it has to file suitable evidence, for example by filing as documents adequate copies of such laws and/or as appropriate by filing as expert evidence the opinions of a suitably qualified lawyer in the relevant jurisdiction (T 74/00, Reasons Nr. 4).

- 1.6 However, the main evidence the appellant has submitted to support its view is an extract of a judgement from a UK court in which the court found that under English law a priority was validly claimed in the UK, having regard to US federal law and the law of the State of Georgia (D16, Nr. 389), whereby the principles of US law had been agreed upon by the parties (D16, Nr. 354). One of the principles the parties had agreed upon was that Georgia law recognises the concept of equitable rights (D16, Nr. 385).
- 1.7 In the view of the Board, D16 does not qualify as suitable evidence to prove the relevant provisions or recognised operations of US law, be it federal or state law. If US state law were applicable, the board assumes it would be the law of Alabama. Therefore there is no convincing evidence on file to prove the appellant's assertion that The University of Alabama is successor in title to the applicants of the earlier application.
- 1.8 Under these circumstances, the claim to priority of US 326704 P of 3 October 2001 is not valid and it results from this conclusion that document D3 is a document according to Article 54(2) EPC.
- 1.9 Since the reasoning of the appealed decision underlying the lack of novelty of claims 1 and 15 of the main request was not contested by the appellant, the Board sees no reason to deviate from the conclusion reached by the opposition division. Claims 1 and 15 of the main request therefore lack novelty in view of D3.

Auxiliary requests I-VII

2. Novelty

2.1 Since auxiliary requests I, III, IV and VII submitted with the statement of grounds of appeal correspond to auxiliary requests II, IV, V and VI that were found to lack novelty over D3 in the contested decision and that conclusion was not disputed in appeal, the Board sees no reason to deviate therefrom with the consequence that auxiliary requests I, III, IV and VII too lack novelty in view of D3.

2.2 Claim 1 of auxiliary request II differs from claim 1 of the main request in that the cation of the ionic liquid is "a 1,3-di-C₁-C₆-alkyl imidazolium ion". That modification of claim 1 does not constitute a distinguishing feature over D3 since that document discloses the use of 1-butyl-3-methyl imidazolium (fourth paragraph on page 4974 and abbreviated as [C₄mim] in Table 1) which is a cation according to claim 1 of auxiliary request II. Claim 1 of auxiliary request II therefore lacks novelty over D3.

2.3 Claim 1 of auxiliary requests V and VI corresponds to claim 1 of auxiliary requests I and II with the further limitation of the upper limit of the amount in nitrogen-containing base to less than 1 weight percent. Since nitrogen-containing bases are not at all disclosed in the molten ionic liquid of D3, the amendment made in claim 1 of auxiliary requests V and VI does not create a difference with the disclosure of D3. Claim 1 of auxiliary requests V and VI therefore shares the same fate as claim 1 of auxiliary requests I and II, namely they lack novelty over D3.

Auxiliary request VIII

3. Amendments

3.1 No basis in the application as originally filed was provided for the amendments contained in auxiliary requests VIII that was first filed with the statement of grounds of appeal.

3.2 As far as auxiliary request VIII is concerned, the method of claim 1 recites that the anions of the ionic liquid are C₁-C₆ carboxylate. Mention of those anions can be found on page 6 of the application as originally filed. There is however no clear and unambiguous disclosure of the subject matter of claim 1 relating to C₁-C₆ carboxylate as anions in combination with the features of the dependent claims 2, 4, 6, 7 and 10-12 relating to the radiation, specific cations, a specific cellulose or molten temperature range in the application as originally filed. The application as filed does for instance not disclose clearly and unambiguously the use of C₁-C₆ carboxylate anions in combination with 1,3-di-C₁-C₆ alkyl imidazolium as cations as now covered by claims 10 or 11. That subject matter results from selections from two lists for which there is no pointer in the whole application as originally filed. That also applies to the subject matter of claims 13 and 19 and to their combinations with the dependent claims 14-18 and 20-26. Auxiliary request VIII does therefore not fulfill the requirements of Article 123(2) EPC.

Auxiliary request IX

4. Auxiliary request IX corresponds to auxiliary request VIII underlying the decision under appeal. That request

was allowed by the opposition division in its interlocutory decision. Since the opponent has not filed an appeal against the decision of the opposition division, the patent proprietor is the sole appellant. Accordingly, by virtue of the prohibition of *reformatio in peius* to be applied in the present case (see decisions G 9/92 and G 4/93, OJ EPO 1994, 875), neither the Board nor the non-appealing opponent may challenge the maintenance of the patent as amended according to this request.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



B. ter Heijden

D. Semino

Decision electronically authenticated