

**Internal distribution code:**

- (A) [ ] Publication in OJ  
(B) [ ] To Chairmen and Members  
(C) [X] To Chairmen  
(D) [ ] No distribution

**Datasheet for the decision  
of 21 May 2012**

**Case Number:** T 2068/10 - 3.3.01

**Application Number:** 04801949.1

**Publication Number:** 1624752

**IPC:** A01N 1/02

**Language of the proceedings:** EN

**Title of invention:**

Delivery of compounds with rehydrated blood cells

**Applicant:**

University of North Carolina at Chapel Hill

**Headword:**

Fixed-dried platelets/UNIVERSITY NORTH CAROLINA

**Relevant legal provisions:**

EPC Art. 84

**Relevant legal provisions (EPC 1973):**

-

**Keyword:**

"Main and sole request: clarity and support by the description  
(yes)"  
"Remittal"

**Decisions cited:**

T 0939/92, T 0821/96

**Catchword:**

-



Case Number: T 2068/10 - 3.3.01

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.01  
of 21 May 2012

**Appellant:** UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL  
(Applicant) 308 Bynum Hall  
Campus Box 4105  
Chapel Hill  
NC 27599-4105 (US)

**Representative:** McPherson, Michael & Gibbs, Richard  
Marks & Clerk LLP  
Aurora  
120 Bothwell Street  
Glasgow G2 7JS (GB)

**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 23 April 2010  
refusing European patent application  
No. 04801949.1 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** P. Ranguis  
**Members:** G. Seufert  
D. S. Rogers

## Summary of Facts and Submissions

- I. The Appellant lodged an appeal against the decision of the Examining Division refusing the European patent application 04801949.1.
- II. In this decision the following numbering will be used to refer to the documents:
- (3) US 2002/0009500
  - (5) WO 93/23997
  - (6) Th. H. Fischer et al., British Journal of Haematology, vol. 111, 2000, pages 167-74
- III. The decision under appeal was based on the main request filed with letter of 23 February 2010 and auxiliary requests 1-3 all filed with letter of 1 February 2012.

The Examining Division held that claim 1 of the main request did not comply with the requirement of Article 84 EPC and that claim 1 of the auxiliary requests 1-3 contravened Article 123(2) EPC. In particular, the Examining Division objected to the term "fixed-dried cells", which in its opinion included also "rehydrated fixed-dried cells". Additionally, it considered the term "active agent" to be very broad not allowing the claimed subject-matter to be distinguished from the subject-matter of the prior art (for example document (6)). The Examining Division also held that in the absence of experimental support as to the viability of the active agent after internalisation the claimed subject-matter lacked technical support.

- IV. With the statement of grounds of appeal the Appellant filed a new main request and first to fourth auxiliary requests.
- V. In a communication accompanying the summons to oral proceedings the Board raised doubts as to the compliance of the Appellant's main and auxiliary requests with Article 123(2) EPC and drew the Appellant's attention to certain issues concerning clarity and consistency of the claims of its newly filed main and auxiliary requests. The Board also indicated that it did not agree with the Examining Division's findings with respect to Article 84 EPC. The Board informed the Appellant of its intention to remit the case to the first instance if it were to come to the conclusion that at least one of the Appellant's claim requests met the requirement of Article 123(2) and 84 EPC.
- VI. In response to the Board's communication, the Appellant filed with letter of 20 April 2012 a new main request and new first to third auxiliary requests replacing the requests previously on file.
- VII. During oral proceedings, which took place as scheduled on 21 May 2012, the Appellant filed a new main request in response to the concerns of the Board with respect to the drafting of claim 1 and withdrew the previously filed auxiliary requests.

The Appellant's new main and sole request consists of 22 claims, independent claims 1, 11, 20 and 22 reading as follows:

"1. Fixed-dried blood cells carrying an active agent, wherein said fixed-dried blood cells are fixed-dried platelets and wherein the active agent has been coupled to or introduced into the cells."

"11. A pharmaceutical composition comprising:  
from 0.01 to 99.99 percent by weight of a pharmaceutically acceptable carrier;  
and  
fixed-dried blood cells carrying an active agent, wherein said fixed-dried blood cells are fixed-dried platelets and wherein the active agent has been coupled to or introduced into the cells."

"20. A method of making fixed-dried blood cells carrying an active agent, comprising:  
providing fixed blood platelets,  
coupling the active agent to the platelets or introducing the active agent into the platelets; and  
drying said fixed blood platelets by lyophilization to produce fixed-dried blood platelets carrying said active agent."

"22. A method of making a pharmaceutically acceptable composition comprising rehydrated fixed-dried blood cells carrying an active agent, the method comprising:  
providing fixed blood platelets,  
coupling the active agent to the platelets or introducing the active agent into the platelets;  
drying said fixed blood platelets by lyophilization to produce fixed-dried blood platelets carrying said active agent; and

rehydrating said fixed-dried blood platelets in a pharmaceutically acceptable carrier."

VIII. The arguments submitted by the Appellant, to the extent that they are relevant for this decision, can be summarised as follows:

The amendments in the main request are supported by the application as originally filed. The restriction to platelets in claim 1 was supported by the original claim 1 where platelets were mentioned as one of three options. Moreover, platelets were mentioned throughout the application as filed and all the examples referred to platelets. The coupling to or introduction of the active compound into the platelets found support *inter alia* on page 3, lines 3-5 of the application as filed and page 2, lines 9-11. Dependent claims 2-10 were based on claims 2-4, 6, 7, 9-12 as originally filed. Independent claim 11 found support on page 2, lines 20-25 of the application as filed. With regard to the restriction to fixed-dried platelets the basis for the amendments was the same as for claim 1. Dependent claims 12-19 were based on claims 18, 19, 22, 23 and 25-28. Support for the amendment in independent claim 20 was found in claim 29 as originally filed and page 2, line 27 - page 3, line 9, which was a coherent disclosure and did not refer to individual statements. Dependent claim 21 found its basis in claim 35 as originally filed. Independent claim 22 is based on claim 30 as originally filed and page 2, line 27 to page 3, line 9.

Contrary to the opinion of the Examining Division, claim 1 was directed to a dry product. Subsequent

rehydration was normally carried out for administration of the platelets, but this did not change the fact that a dried product with the active agent coupled to or introduced into platelets has been produced. As far as the breadth of the term "active agent" was concerned the application as filed provided a substantial listing of possible active agents. With regard to the Examining Division's suggestion that this broad definition would not allow distinction from prior art such as document (6), it was pointed out that document (6) disclosed the attachment of the fluorescent probe to rehydrated platelets. In order to clarify that the active agent carried on the platelets did not refer to active agents which were naturally present on the platelets, the claims were amended to require that the active agent was coupled to or introduced into the platelets. Concerning the lack of support, it was submitted that example 5 taught the skilled person how to internalise ribavirin into the platelets. Further means for such internalisation were provided on page 13, lines 10 to page 14, line 23 of the application. There was thus ample support for processes involving internalisation of an active agent to provide the product of platelets in a lyophilised state according to the invention.

- IX. The Appellant requested that the decision under appeal be set aside and that the case be remitted to the department of first instance for further prosecution on the basis of claims 1-22 of the main request submitted at the oral proceedings before the Board on 21 May 2012.
  
- X. At the end of the oral proceedings, the decision of the Board was announced.

## Reasons for the Decision

1. The appeal is admissible.

### *Main and sole request*

2. Amendments (Article 123(2) EPC)
  - 2.1 Independent claims 1, 20 and 22 are based on claims 1, 29 and 30 of the application as filed, which have been limited by selecting one member of fixed-dried cells, namely platelets, from the list of options provided in the original claims. Furthermore, it has been indicated that the active compound carried by the cells has been coupled to or introduced into the cells. This feature finds support on page 2, lines 9-12 of the application as filed indicating that the active agent in the fixed-dried cells may be associated with the cells by coupling or being contained therein and more particularly in the paragraph bridging pages 2 and 3, which refers to the method of making the fixed-dried blood cells of the invention comprising the step of associating the active agent to the fixed blood cells. Means of association are coupling the active agent to the cells or introducing the active agent into the cells (page 3, lines 3-5 of the application). Drying by lyophilisation in the method claims 20 and 22 is also considered to be supported by the aforementioned paragraph. In addition, lyophilisation as the preferred method for drying is confirmed by all examples. Dependent claims 2-10 and 21 are supported by claims 2-4, 6, 7, 9-12 and 35 as originally filed.



2.2 Independent claim 11 referring to pharmaceutical compositions is based on page 2, lines 20-25 of the application as filed referring to pharmaceutical compositions comprising the fixed-dried blood cells as described in the application. The same amendments as in claim 1 were made. With the product claims being supported by the application as filed, as explained above, introducing the same amendments to the pharmaceutical composition comprising such products does not add new technical information going beyond the application as originally filed. Dependent claims 12-19 are supported by original claims 18, 19, 22, 23, 25-28 and the corresponding original product claims 2, 3, 4, 7, 9-12.

2.3 The requirement of Article 123(2) EPC are thus met.

3. Clarity and support (Article 84 EPC)

3.1 In the decision under appeal the Examining Division objected to the term "fixed-dried cells" in claim 1. Contrary to the Applicant's, now Appellant's, opinion it considered that this term also included "rehydrated fixed dried cells", because in its opinion further treatment of the cells after having been fixed was not excluded. In support of its interpretation the Examining Division pointed to the prior art, without in this context specifying any particular document, wherein the term "fixed-dried" and "rehydrated lyophilised" ("RL") were allegedly used interchangeably and to the application as filed "which states on page 6 that fixed-dried blood cells are cells which have been fixed (which of course is also true for cells which have been rehydrated in a subsequent phase)".

3.2 The Board does not agree with the Examining Division's findings. Claim 1 of the present main request, as was claim 1 of the main request before the Examining Division, is directed to a product, namely fixed-dried platelets. When reading claim 1, the term "fixed-dried" suggests to a skilled person a product in a dry or water-free state. The meaning of this term therefore is clear per se. Furthermore, this meaning is confirmed in the description of the application. On page 6, lines 3-7 fixed-dried blood cells are described as blood cells "which have been fixed, and additionally have had water removed therefrom ....". In contrast, fixed-dried blood cells which have been contacted with water so that the water is taken up into the intracellular cells, are defined as "rehydrated fixed-dried blood cells" (page 6, lines 8-11). The prior art as cited in the supplementary European search report and the International search report makes the same distinction between dried or lyophilised cells and rehydrated dried or lyophilised cells. An interchangeable use of the term "fixed-dried" and "rehydrated-lyophilised" as argued by the Examining Division is not apparent to the Board. In this context, the Board also notes that the term "fixed-dried" refers to dried cells which were treated with a fixation agent, while "rehydrated-lyophilised" merely refers to a freeze-dried product, which was rehydrated, but was not necessarily fixed (see for example document (3)). Thus, the terms cannot be considered equivalent or interchangeable.

The Board acknowledges that ultimately the fixed-dried cells will have to be rehydrated before being administered to a patient and that rehydration is

therefore also described in the application. However, this does not justify the conclusion that rehydrated platelets form part of claim 1 contrary to its wording.

- 3.3 An additional objection of the Examining Division under Article 84 EPC was directed to the breadth of the claims. However, according to the jurisprudence of the Boards of Appeal, the clarity of a claim is not necessarily diminished by the mere breadth of a term. In the present case the Examining Division has understood the term "active agent" as encompassing any compound with any kind of activity or function. The Board agrees with this admittedly very broad definition, which is also in line with the definition in the description of the application (see page 11, 16-17). The specific activity or function is not essential for the invention. According to the application (see page 11, line 1 - page 13, line 7), active agents may encompass a wide variety of different compounds, for example RNA, DNA, proteins or peptides such as enzymes or antibodies, viruses, bacteria, small organic compounds, polymers, nanoparticles, having a wide variety of activity like antimicrobial, antibacterial or antiviral, blood coagulation or anti-coagulation activity, reporter or detectable activity, like radiolabels or fluorescent probes. Compounds with a different activity, for example stabilisers (trehalose, albumin) are, however, also included.

Whether or not this broad definition allows the claimed subject-matter to be distinguished from the prior art, is a matter that should be dealt with by the Examining Division in the examination of novelty, taking into

account the fact that claim 1 is not directed to a rehydrated product.

- 3.4 The Board also does not agree with the Examining Division's finding of "lack of technical support" in the sense of Article 84 EPC". With lack of technical support, the Examining Division refers to the absence of experimental results for example 5 directed to the internalisation of Ribavirin into platelets.
- 3.4.1 Concerning the question of support under Article 84 EPC, the Board observes that according to the jurisprudence of the Boards of Appeal the expression "support by the description" means that the technical features stated in the description as being essential for the invention must be the same as those used to define the invention in the claims (see decision T 939/92, OJ EPO 1996, 309, point 2.2.2 of the Reasons, T 821/96, point 3.2.1 of the Reasons). The Examining Division did not argue that features which are mentioned as essential in the description are missing in claim 1. Nor can the Board find any such features. Instead the Examining Division referred to the existence of an alleged prejudice in the prior art, namely that the active agent may not be viable when platelets were subjected to fixation and that in the absence of experimental results showing that ribavirin, the active agent of example 5, is still viable this prejudice was not considered to be overcome. In other words, concerning the embodiment of internalisation, the Examining Divisions doubted that the technical problem of delivering the active agent as stated on page 2 of the application was solved.

3.4.2 However, the question whether or not this problem is indeed solved by the claimed subject-matter may be dealt with when assessing inventive step or examining sufficiency of disclosure. Moreover, the Board notes that the Examining Division considered that support existed for embodiments where the active agent is carried on the surface of the platelets. According to the invention the internalisation of the active agent into the platelets is an alternative embodiment of the invention. There is no reason apparent to the Board why there should be any doubt as to the viability of the active agent, if it is internalised, where it is even less exposed to any fixing or cross-linking agent, instead of being carried on the surface of the platelet, and the decision under appeal fails to give any explanation in this respect. In this context, the Board also notes that according to the prior art cross-linking in platelets occurs on the surface of the platelets, i.e. cross-linking of surface proteins and lipids (document (6), page 167, left column, first paragraph last four lines). Moreover, fixation in platelets is carried out under particularly mild conditions (room temperature, low concentration of formaldehyde, short reaction time) in order not to lose viability of the platelets (see reference to US 5,651,966 in example 2 of the application, which corresponds to document (5) of the European search report in the present case). There is no plausible reason apparent to the Board why the skilled person would have concerns that under these conditions the viability of the active agent will be in jeopardy, while the viability of the platelets remains largely intact, i.e. many of the surface membrane functions despite a certain degree of cross-linking of surface

proteins and lipids are retained. Thus, an objection of lack of support by the description cannot, in the Board's judgement, be validly raised in the present case.

4. Remittal

The Board observes that the Examining Division had already raised objections concerning novelty and inventive step. However, in view of the fact that it based its objection regarding novelty on an incorrect assumption, namely that rehydrated products formed part of the claimed subject-matter, and in view of the fact that it was not apparent from the file what final conclusion concerning inventive step the Examining Division would reach taking into account the Appellant's arguments and new evidence provided with its letters of 1 February 2010 and 23 February 2010, the Board pursuant to its discretion under Article 111(1) EPC considers it appropriate to remit the case to the department of first instance for further prosecution on the basis of the present main request.

**Order**

**For these reasons it is decided that:**

1. The decision is set aside.
  
2. The case is remitted to the department of first instance for further prosecution upon the basis of claims 1-22 of the main request submitted at oral proceedings before the Board on 21 May 2012.

The Registrar:

The Chairman:

M. Schalow

P. Ranguis