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

Datasheet for the decision of 13 October 2015

Case Number: T 0677/12 - 3.3.07

Application Number: 01979074.0

Publication Number: 1318821

IPC: A61K33/14, A61P13/12

Language of the proceedings: EN

Title of invention:
FLUID FOR HAEMOFILTRATION

Patent Proprietor:
Dieze Delta B.V.

Opponents:
Gambro Lundia AB
Fresenius Medical Care Deutschland GmbH
B. Braun Melsungen AG

Relevant legal provisions:
EPC Art. 56
RPBA Art. 12(4), 13(1), 13(3)

Keyword:
Requests submitted with grounds of appeal - admitted (yes)
Late-filed auxiliary requests - admitted (yes)
Late-filed evidence - admitted (no)
Inventive step - main request and auxiliary requests (no)

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern
Boards of Appeal
Chambres de recours

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 0677/12 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 13 October 2015

Appellant: (Patent Proprietor)	Dieze Delta B.V. Onderwijsboulevard 219 5223 DE 's-Hertogenbosch (NL)
Representative:	Nederlandsch Octrooibureau P.O. Box 29720 2502 LS The Hague (NL)
Respondent: (Opponent 1)	Gambro Lundia AB P.O.Box 10101 220 10 Lund (SE)
Representative:	Simons, Amanda Louise J A Kemp 14 South Square Gray's Inn London WC1R 5JJ (GB)
Respondent: (Opponent 2)	Fresenius Medical Care Deutschland GmbH Else-Kröner-Strasse 1 61352 Bad Homburg (DE)
Representative:	Nordmeyer, Philipp Werner df-mp Dörries Frank-Molnia & Pohlman Patentanwälte Rechtsanwälte PartG mbB Theatinerstraße 16 80333 München (DE)
Respondent: (Opponent 3)	B. Braun Melsungen AG Carl-Braun-Str.1 34212 Melsungen (DE)
Representative:	Arth, Hans-Lothar ABK Patent & Trademark Attorneys Jasminweg 9 14052 Berlin (DE)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 27 January 2012 revoking European patent No. 1318821 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman J. Riolo
Members: A. Usuelli
P. Schmitz

Summary of Facts and Submissions

I. European patent No. 1 318 821 was granted on the basis of European patent application No. 01979074.0.

II. Three oppositions were filed against the patent on the grounds of Article 100(a) EPC for lack of novelty and inventive step. The following documents were among those cited during the first instance-proceedings:

O2: Intensivmedizin und Notfallmedizin, 32(3), 1995, 194-198
O3: The New England Journal of Medicine, 336(18), 1997, 1303-1309
O11: Physiologische Chemie, 4. Auflage, 1988, 540-568
O15: Seminars in Dialysis, 9(2), 1996, 107-111
O37: European Pharmacopoeia 1997, 921-927
O42: The Journal of Laboratory and Clinical Medicine, 40(3), 1952, 436-444
O43: DE 3586844

III. By decision posted on 27 January 2012 the opposition division revoked the patent. The decision was based on a main request and two auxiliary requests. The main request and auxiliary request 2 were filed during the oral proceedings held on 15 December 2011. Auxiliary request 1 was filed on 14 October 2011.

Claim 1 of the main request and claim 1 of auxiliary request 2, which are still relevant in the context of the present appeal, read as follows:

Main request:

"1. Haemofiltration fluid suitable for use in continuous veno-venous haemofiltration (CVVH), that

comprises an aqueous solution of physiologically acceptable salts containing at least the Na^+, Cl^-, Mg^{2+}, K^+ and Ca^{2+} ions and glucose, all in a physiologically acceptable concentration, wherein the haemofiltration fluid contains the ions K^+ in a concentration between 3.5 mmol/l and lower than 5.5 mmol/l and Ca^{2+} in a concentration of 0.8 to 1.3 mmol/l, and wherein the glucose concentration is between 2 and 15 mmol/l."

Auxiliary request 2:

"1. Haemofiltration fluid suitable for use in continuous veno-venous haemofiltration (CVVH), that comprises an aqueous solution of physiologically acceptable salts containing at least the Na^+, Cl^-, Mg^{2+}, K^+ and Ca^{2+} ions and glucose, all in a physiologically acceptable concentration, wherein the haemofiltration fluid contains the ions K^+ in a concentration higher than 3 mmol/l and lower than 5.5 mmol/l and Ca^{2+} in a concentration of 0.8 to 1.3 mmol/l, wherein the fluid comprises the following components in the indicated physiologically acceptable range:

Na^+	135-145 mmol/l
Mg^{2+}	0.6-1.0 mmol/l
Cl^-	95-120 mmol/l
Glucose	3.5-8 mmol/l
K^+	3.5-5 mmol/l
Ca^{2+}	0.8-1.3 mmol/l"

IV. In its decision the opposition division held that the subject-matter of claim 1 of the main request and of auxiliary request 1 was not novel in view of documents O42 and O43.

As to claim 1 according to auxiliary request 2, a suitable starting point for the assessment of inventive step was document O37, which disclosed in table 861-1 a solution for haemofiltration. The ranges of concentrations defined in claim 1 of auxiliary request 2 were included in or overlapped with the corresponding ranges disclosed in O37. The skilled person knew that suitable fluids for haemofiltration could have been prepared working inside of the ranges of concentration disclosed in O37. The subject-matter of this request was therefore obvious.

V. The patent proprietor (appellant) lodged an appeal against that decision. With the statement setting out the grounds of appeal filed with letter of 5 June 2012, he submitted a main request and 14 sets of claims as auxiliary requests 1 to 8 and auxiliary requests 3A to 8A.

Claim 1 of the main request and claim 1 of auxiliary request 2 were identical to the corresponding claims of the main request and of auxiliary request 2 forming the basis of the decision under appeal (see III above).

Claim 1 of auxiliary request 1 differed from claim 1 of the main request in that it indicated that the fluid had a physiological pH between 7.2 and 7.6.

Claim 1 of auxiliary request 3 read as follows:

"1. Fluid that comprises an aqueous solution of physiologically acceptable salts containing at least the Na^+, Cl^-, Mg^{2+}, K^+ and Ca^{2+} ions and glucose, all in a physiologically acceptable concentration, wherein the haemofiltration fluid contains the ions K^+ in a concentration between 3.5 mmol/l and lower than 5.5

mmol/l and Ca^{2+} in a concentration of 0.8 to 1.3 mmol/l, and wherein the glucose concentration is between 2 and 15 mmol/l for use in haemofiltration."

Claim 1 of auxiliary request 4 differed from claim 1 of auxiliary request 3 in that it indicated that the fluid had a physiological pH between 7.2 and 7.6

Claim 1 of auxiliary request 5 was essentially based on claim 1 of auxiliary request 3 but it differed therefrom in that the concentrations of the Na^{+}, Cl^{-}, Mg^{2+}, K^{+} and Ca^{2+} ions and glucose were defined as in claim 1 of auxiliary request 2.

Claim 1 of auxiliary requests 6, 7 and 8 was based respectively on claim 1 of auxiliary requests 3, 4 and 5, but differed therefrom in that the feature "Fluid" at the beginning of the claim was replaced by "Haemofiltration fluid" and the feature "for use in haemofiltration" was replaced by "for use in continuous veno-venous haemofiltration (CVVH)".

Claim 1 of auxiliary request 3A read as follows:

"1. Use of a composition comprising an aqueous solution of physiologically acceptable salts containing at least the Na^{+}, Cl^{-}, Mg^{2+}, K^{+} and Ca^{2+} ions and glucose, all in a physiologically acceptable concentration, for the manufacture of a fluid containing the ions K^{+} in a concentration between 3.5 mmol/l and lower than 5.5 mmol/l and Ca^{2+} in a concentration of 0.8 to 1.3 mmol/l, and wherein the glucose concentration is between 2 and 15 mmol/l, for haemofiltration".

Claim 1 of auxiliary request 4A differed from claim 1 of auxiliary request 3A in that it indicated that the fluid had a physiological pH between 7.2 and 7.6.

Claim 1 of auxiliary request 5A was essentially based on claim 1 of auxiliary request 3A, but it differed therefrom in that the concentrations of the Na^+, Cl^-, Mg^{2+}, K^+ and Ca^{2+} ions and glucose were defined as in claim 1 of auxiliary request 2.

Claim 1 of auxiliary requests 6A, 7A and 8A were based respectively on claim 1 of auxiliary requests 3A, 4A and 5A, but differed therefrom in that the feature "for the manufacture of a fluid" was replaced by the feature "for the manufacture of a haemofiltration fluid" and the feature "for haemofiltration" was replaced by the feature "for continuous veno-venous haemofiltration (CVVH)".

VI. In a communication pursuant to Rule 15(1) RPBA issued on 20 July 2015, the Board observed *inter alia* that certain amendments introduced in the main request and in some auxiliary requests were not occasioned by any ground of opposition as required by Rule 80 EPC. Concerning the requirement of inventive step, the Board considered that the closest prior art was represented by document O37 and that the technical problem was to to be formulated as the provision of a further solution for haemofiltration.

VII. By letter dated 28 September 2015, the appellant submitted three new sets of claims headed "amended main request", "amended first auxiliary request" and "amended second auxiliary request", which differed respectively from the main request, from auxiliary request 1 and from auxiliary request 2 filed on

5 June 2012 only in view of amendments introduced in dependent claims.

With the same letter the appellant also filed a declaration of Dr Hollander concerning the results of a clinical trial conducted with a commercial haemofiltration fluid.

VIII. In his written submissions, the appellant considered various documents as the possible closest prior art. During the oral proceedings before the Board, he eventually submitted his arguments on inventive step of the main request, selecting O37 as the closest prior art. He observed that this document defined the solutions for haemofiltration as preparations containing electrolytes with a concentration close to the electrolytic composition of plasma. The technical problem was to be seen in the provision of an alternative solution for haemofiltration. According to Table 861-1 of O37, the K^+ ion could be absent from the solutions. Also other documents, such as O3, disclosed solutions for haemofiltration which did not contain the K^+ ion. The available prior art did not suggest a concentration for this ion of between 3.5 mmol/l and 5.5 mmol/l as required by claim 1 of the main request. Similar considerations could be made in respect of the concentrations of the Ca^{2+} ion and glucose. For instance, table 2 of O15 disclosed a composition which contained too high amounts of calcium and did not contain glucose. In many compositions available on the market, the concentration of electrolytes was not close to the electrolytic composition of plasma. Also, the ranges defined in the table of O37 included values of concentrations which did not correspond to physiological levels. The haemofiltration fluid defined in the claims of the main request was more

physiological compared to the products known from the prior art. In the appellant's opinion, monitoring the plasma parameters of patients submitted to treatments of haemofiltration, in order to observe possible deviations of the concentration of electrolytes from the physiological level and adjust their amounts in the haemofiltration fluid, was not an easy task.

Concerning the assessment of inventive step of the auxiliary requests, the appellant relied upon the submissions made in respect of the main request.

IX. The respondents (opponent 1, opponent 2 and opponent 3) requested not to admit auxiliary requests 3 to 8A into the appeal proceedings. Respondent 1 also remarked that the declaration of Dr Hollander and the clinical data attached thereto had been filed only a few weeks before the oral proceedings. These submissions were therefore not to be admitted.

As to the requirements of inventive step, the respondents essentially argued along the lines of the decision under appeal. They underlined that O37 suggested to fine-tune the concentrations of electrolytes disclosed in table 861-1 by considering the electrolytic composition of plasma, which was known for instance from O11. They furthermore observed that it would have been obvious for a skilled person to monitor the concentrations of the electrolytes in the plasma of a subject undergoing a treatment of haemofiltration and to modify the composition of the fluid in order to maintain an electrolytic composition close to the physiologic levels.

X. The appellant requested that the decision under appeal be set aside and that the patent be maintained

according to the main request or to auxiliary requests 1 to 8 or auxiliary requests 3A to 8A all filed on 5 June 2012, or that the patent be maintained according to the "amended main request" or "amended first auxiliary request" or "amended second auxiliary request" filed on 28 September 2015.

XI. The respondents requested that the appeal be dismiss, and that auxiliary requests 3 to 8 and 3A to 8A not be admitted into the proceedings. Respondent 1 additionally requested that the declaration and the clinical data filed on 28 September 2015 not be admitted into the proceedings.

Reasons for the Decision

1. *Admittance of auxiliary requests into the appeal proceedings*

1.1 Auxiliary requests 3 to 8A

Auxiliary requests 3 to 8A were submitted by the appellant with the statement setting out the grounds of appeal. According to Article 12(1) RPBA, these requests form the basis of the appeal proceedings. The Board sees no reasons for not admitting them under Article 12(4) RPBA.

In the grounds of appeal the appellant explains that auxiliary requests 3 to 8 are formulated as purpose-limited product claims, while auxiliary requests 3A to 8A are in the Swiss-type format. Claim 1 of each of these requests explicitly recites the use of the

fluid for haemofiltration or for continuous veno-venous haemofiltration (CVVH). In the appellant's opinion, only prior art documents dealing with these specific applications should be regarded as relevant prior art for the assessment of inventive step. In the same letter, the appellant affirms that the opposition division did not appreciate the distinction between fluids used for haemofiltration or for CVVH and fluids used for haemodialysis.

In the light of these explanations, the Board understands that the purpose of auxiliary requests 3 to 8A was to emphasize in the claims the specific application of the fluids. Hence, the filing of these requests can be considered as a reaction by the appellant to the decision of the opposition division.

1.2 Amended main request, amended first auxiliary request and amended second auxiliary request

These requests were filed by the appellant on 28 September 2015. The amendments introduced therein are confined to some dependent claims and are meant to address the concerns raised by the Board in its communication of 20 July 2015 in relation to the requirements of Rule 80 EPC.

Thus, the filing of the new requests does not increase the complexity of the case and represents a response to the communication of the Board.

In the exercise of its discretion under Article 13(1) and 13(3) RPBA, the Board admits these requests into the proceedings.

2. Admittance of the declaration of Dr Hollander and of the clinical data attached thereto

As stated in the appellant's letter of 28 September 2015, the purpose of the declaration of Dr Hollander and of the clinical data to which the declaration refers, is to confirm the findings reported in the opposed patent with regard to the appearance of some metabolic disorders, such as hypercalcemia, when known fluids are used in the treatment of haemofiltration.

Hence, the declaration of Dr Hollander merely supports considerations already included in the patent and which have never been contested, either by the respondents or by the Board. The very late filing of this submission finds therefore no justification in developments occurring during the appeal proceedings. Besides this, it is unclear how the admittance of this declaration could have any impact on the assessment of inventive step.

Under these circumstances, the Board considers it appropriate not to admit into the appeal proceedings the declaration of Dr Hollander and the clinical data attached thereto (Article 13(1) and (3) RPBA).

3. *Main request - Inventive step*

3.1 The patent in suit addresses the problem of providing compositions suitable for use in haemofiltration, in particular for use in continuous veno-venous haemofiltration ([0001]).

3.2 Closest prior art

3.2.1 Document O37 discloses in Table 861-1 the typical ranges of concentration of the components of a solution for haemofiltration. In agreement with the decision under appeal, the Board considers this document to represent the closest prior art.

3.2.2 The ranges of concentration given in Table 861-1 for the ions K^+ and Ca^{2+} and for glucose are 0-4.5 mmol/l, 1.0-2.5 mmol/l and 0-25 mmol/l respectively. By comparing these values of concentration with the corresponding values recited in claim 1 of the main request (see V and III above) it can be observed that there is an overlap between the ranges defining the amount of K^+ and Ca^{2+}, while the range of concentration of glucose of the main request is included in the corresponding ranges of Table 861-1.

Document O37 fails, however, to provide a direct and unambiguous disclosure of the combination of the specific ranges defining the amounts of K^+, Ca^{2+} and glucose. Hence, this combination of ranges represents the distinguishing feature of claim 1 over the disclosure of O37.

3.3 Technical problem

3.3.1 The technical problem underlying the invention with respect to O37 can be defined as the provision of an alternative fluid for haemofiltration.

The patent does not contain any experimental data relating to tests carried out using the compositions of the patent in suit. The Board sees no reason, however, for questioning that these compositions can be used as

haemofiltration fluids. Nor have the respondents raised any doubts in this respect.

Accordingly, the Board considers that the technical problem defined above has been solved by the provision of the composition defined in claim 1.

3.4 Obviousness

3.4.1 Document O37 teaches the skilled person which components should be included in a solution for haemofiltration and which are the suitable minimum and maximum amounts. In the Board's opinion, the relatively broad ranges of concentration disclosed in Table 861-1 serve the purpose of meeting the needs that different patients may have depending on their clinical conditions. For instance, as stated in O2 (page 195, right column), for patients suffering from hyperkalemia (i.e. an elevated concentration of K^+ in the blood), the haemofiltration fluid should not contain K^+, while for patients having normal levels of K^+, the content of this electrolyte in the haemofiltration fluid should be between 2 and 4 mmol/l. Indeed, O37 discloses a range of concentration for K^+ (0-4.5 mmol/l) which covers the different requirements of the patients.

3.4.2 Document O37 also provides a general criterion on how the general ranges disclosed in Table 861-1 can be fine-tuned. This criterion is to provide a concentration of electrolytes which is close to the electrolytic composition of plasma (see paragraph "Definition"). The same teaching can be derived from documents O2 (page 195, right column), O3 (page 1303, sentence linking right- and left-hand columns) and O15 (page 107, first sentence of right-hand column).

The physiological concentrations of the most relevant electrolytes in blood are disclosed in Table 20.6 of document O11. The concentration of K+ is between 3.5 and 5.5 mmol/l. Calcium is present in an amount comprised between 2.2 and 2.6 mmol/l. It is however stated in the same table that only 46% of the calcium present in the blood is in ionised form. Hence, the physiological concentration of the ion Ca^{2+} is approximately between 1.0 and 1.2 mmol/l. Document O11 furthermore reports that the normal amount of glucose in 100 ml of blood is 90 mg, which corresponds to a concentration of approximately 5 mmol/l.

3.4.3 From the above considerations it can be concluded that the concentrations of K^+, Ca^{2+} and glucose recited in claim 1 of the main request are in line with the teaching of O37. These concentrations are completely (glucose) or partially (K^+ and Ca^{2+}) included in the ranges of O37 and tend to the physiological levels of plasma, as suggested by document O37 itself and by other prior art documents (see above).

These observations apply in particular to the ions K^+ and Ca^{2+}. The patent underlines the risks associated with a shortage of K^+ or to high concentrations of Ca^{2+} (see [0013] and [0014]). Furthermore, the appellant has remarked that compositions with relatively high concentrations of K^+ and relatively low concentrations of Ca^{2+} as claimed in the patent in suit are not taught in the prior art. However, the physiological plasma concentration of K+ as reported in O11 (3.5-5.5 mmol/l) corresponds exactly to the range defined in claim 1. The plasma concentration of Ca^{2+} which can be calculated from the table of O11 (1,0-1,2 mmol/l) is entirely included in the corresponding range of claim 1 of the main request.

3.4.4 In addition to the above, the Board concurs with the respondents' observation that the skilled person, by monitoring the serum composition, would immediately observe any relevant deviation from physiological levels of the concentrations of electrolytes or of any other substance. He would therefore remedy a deficiency or an excess of a substance by adjusting the amount of this substance in the haemofiltration fluid.

The appellant remarks that this activity of monitoring the plasma parameters of patients submitted to haemofiltration and providing the opportune adjustments to the composition of the fluid is not an easy task. This is not disputed by the Board. However, the skilled person faced with the problem of providing a new haemofiltration fluid would necessarily need to assess the efficacy and safety of its product. This is confirmed in O15 (page 107, right column), wherein it is is stated that the serum electrolytes must be monitored frequently and the fluid modified as necessary. In the Board's opinion, this statement also implies that the skilled person would be able to perform this activity.

3.4.5 On that basis, claim 1 of the main request does not meet the requirements of Article 56 EPC.

4. *Auxiliary request 1 - Inventive step*

4.1 Compared with claim 1 of the main request, claim 1 of auxiliary request 1 differs in the additional requirement that the haemofiltration fluid has a pH between 7.2 and 7.6.

4.2 The appellant did not submit any arguments in relation to the relevance of this feature for the assessment of inventive step.

The Board notes that haemofiltration fluids with a pH of 7.3 or 7.4 are disclosed, for instance, in Figures 2 and 3 of O2. Furthermore, as stated in the description of the patent (see for instance [0030]), a pH range between 7.2 and 7.6 corresponds to physiological values.

4.3 From the above, the Board concludes that the introduction into claim 1 of a feature defining the pH of the composition does not render inventive the subject-matter of claim 1.

Hence, auxiliary request 1 does not meet the requirements of Article 56 EPC.

5. *Auxiliary request 2 - Inventive step*

5.1 Claim 1 of this request differs from claim 1 of the main request in that it specifies the concentrations of the ions Na^+, Mg^{2+} and Cl^- and in that the ranges defining the amounts of K^+ and glucose have been narrowed.

5.2 Concerning the assessment of inventive step of this request, the appellant relied on the same arguments as presented with regard to the main request.

The Board observes that, as for the main request, the ranges of concentrations defined in claim 1 of auxiliary request 2 are included in the corresponding ranges disclosed in Table 861-1 of O37, or overlap with

them. Furthermore, these ranges of concentration approximate the physiological values disclosed in O11.

Hence, the considerations made for the main request also apply to the subject-matter of auxiliary request 2 so that this request does not comply with the requirements of Article 56 EPC either.

6. *Auxiliary requests 3 to 5 - Inventive step*

6.1 Claim 1 of each of these requests is a purpose-limited product claim concerning a fluid for use in haemofiltration. The fluids defined in claim 1 of auxiliary requests 3, 4 and 5 are identical to the fluids defined in claim 1 of the main request and in claim 1 of auxiliary requests 1 and 2 respectively (see point V above).

6.2 In the circumstances of the present case, the transition from product claims to purpose-limited product claims has no substantial effect on the assessment of inventive step. This was not disputed by the appellant.

Accordingly, the observations made in respect of the previous requests also apply here, with the consequence that auxiliary requests 3 to 5 do not meet the requirements of Article 56 EPC either.

7. *Auxiliary requests 6 to 8 - Inventive step*

7.1 Claim 1 of these requests essentially differs from claim 1 of auxiliary requests 3 to 5 in that the feature "for use in hameofiltration" has been replaced by "for use in continuous veno-venous hameofiltration (CVVH)".

7.2 As explained in paragraph [0035] of the patent, CVVH is a kind of haemofiltration in which a vein of the patient is punctured and the extracorporeal circulation with filtration takes place under the influence of a pump.

There is no indication neither in the patent nor in the prior art documents that CVVH may require the use of different haemofiltration fluids as compared to other types of haemofiltrations. Thus, the considerations made in point 6 above also apply in respect of these requests. Indeed, the appellant did not submit any particular argument in relation to the use for CVVH, but simply referred to the arguments brought forward in relation to the previous requests.

It follows from the above that auxiliary requests 6 to 8 do not fulfil the requirements of Article 56 EPC either.

8. *Auxiliary requests 3A to 8A - Inventive step*

8.1 The claims of these requests differ from the claims of auxiliary requests 3 to 8 only in that the purpose-limited product claim format has been replaced by the "Swiss-type" format.

As acknowledged by the appellant, this modification has no bearing on the assessment of inventive step.

Thus, auxiliary requests 3A to 8A are not inventive.

9. *Amended main request, amended first auxiliary request and amended second auxiliary request*

9.1 Claim 1 of these requests is the same as claim 1 of the main request, auxiliary request 1 and auxiliary request 2 respectively.

It follows that the amended main request, amended first auxiliary request and amended second auxiliary request do not comply with Article 56 EPC either.

Order

For these reasons it is decided that:

1. The appeal is dismissed.

The Registrar: The Chairman:

S. Fabiani J. Riolo

Decision electronically authenticated