Internal distribution code:

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

Datasheet for the decision of 1 December 2020

Case Number: T 1032/17 - 3.3.01

Application Number: 05715625.9

Publication Number: 1725218

IPC: A61K31/501, A61K9/20, A61K9/14, A61K47/12, A61K47/26, A61K47/32, A61K47/38, A61K47/46

Language of the proceedings: EN

Title of invention:
PHARMACEUTICAL COMPOSITION COMPRISING PIMOBENDAN

Patent Proprietor:
Boehringer Ingelheim Vetmedica GmbH

Opponent:
VIRBAC

Headword:
Pimobendan composition / BOEHRINGER

Relevant legal provisions:
EPC Art. 100(c), 100(b), 100(a), 56
RPBA Art. 13(1)

Keyword:

Main request - amendments - added subject-matter (no)
Main request - sufficiency of disclosure - reproducibility (yes)
Main request - inventive step - non-obvious modification
Late-filed evidence - justification for late filing (yes)

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1032/17 - 3.3.01

D E C I S I O N
of Technical Board of Appeal 3.3.01
of 1 December 2020

Appellant: (Patent Proprietor)	Boehringer Ingelheim Vetmedica GmbH Binger Strasse 173 55216 Ingelheim am Rhein (DE)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Appellant: (Opponent)	VIRBAC 1ère Avenue, 2065m, L.I.D. 06516 Carros (FR)
Representative:	Gevers & Orès Immeuble le Palatin 2 3 Cours du Triangle CS 80165 92939 Paris La Défense Cedex (FR)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 3 March 2017 concerning maintenance of the European Patent No. 1725218 in amended form**

Composition of the Board:

Chairwoman	M. Pregetter
Members:	S. Albrecht
	M. Blasi

Summary of Facts and Submissions

I. European patent No. 1 725 218 ("the patent") is based on European patent application No. 05 715 625.9 ("application as filed"). The patent was granted on the basis of a set of 20 claims containing four independent claims 1, 17, 19 and 20. Independent claims 1 and 17 read as follows:

"1. A solid formulation comprising a homogenous dispersion of pimobendan or a pharmaceutically acceptable salt thereof in citric acid or its anhydride and a flavor acceptable to small animals, wherein the solid formulation is obtainable by a fluid-bed granulation process comprising the steps:

a) an aqueous solution of pimobendan and a binder is sprayed onto a solid support comprising one or several excipients, flavor and citric acid anhydrous; and
b) the mixture of a) is dried; and
c) the mixture of b) is sieved and de-agglomerated; and
d) a flow regulator is added to the mixture of c); and
e) a lubricant is added to the mixture of d); and
f) the mixture of e) is blended for uniformity of granules to obtain final granules; and/or
g) the final granules of f) are compressed to tablets."

"17. Fluid-bed granulation process comprising the steps:

a) an aqueous solution of pimobendan and a binder is sprayed onto a solid support comprising one or several carriers and/or excipients, flavor and citric acid anhydrous; and
b) the mixture of a) is dried; and

c) the mixture of b) is sieved and de-agglomerated; and
d) a flow regulator is added to the mixture of c); and
e) a lubricant is added to the mixture of d); and
f) the mixture of e) is blended for uniformity of granules to obtain final granules; and/or
g) the final granules of f) are compressed to tablets."

II. Opposition proceedings were based on the grounds for opposition under Article 100(a) EPC for lack of novelty and lack of inventive step, and under Article 100(b) and (c) EPC.

III. The documents filed during the opposition proceedings included:

D1B: CA 2 034 569
D6: WO 95/31963 A1
D9: M. Hemati et al., "Fluidized bed coating and granulation: influence of process-related variables and physicochemical properties on the growth kinetics", Powder Technology 130, 2003, 18-34
D10: W. J. Thiel et al., "Content uniformity of microdose tablets (dosage 1 µg-10 mg) produced by fluid bed granulation of interactive mixtures", J. Pharm. Pharmacol. 38, 1986, 335-343
D11: WO 2004/000317
D12: WO 00/69414 A2
D13: Experimental report "LPT Report No. 27935 BI Vetmedica Study No. 2011277", dated 24 February 2012 (nine pages in total)
D14: Experimental report "LPT Report No. 27936 BI Vetmedica Study No. 2011278", dated 24 February 2012 (nine pages in total)

IV. The opposition division decided that the patent in amended form in the version of auxiliary request 60 and

the invention to which it related met the requirements of the EPC. The decision was based on a main request and on sets of claims of nine auxiliary requests. The main request was the patent as granted. In respect of this request, the opposition division concluded, *inter alia*, that:

(a) claim 1 did not comprise added subject-matter (Article 100(c) EPC)

(b) the claimed invention was sufficiently disclosed (Article 100(b) EPC)

(c) the subject-matter of claim 1 did not involve an inventive step (Article 100(a) and Article 56 EPC)

V. The patent proprietor ("appellant-patent proprietor") and the opponent ("appellant-opponent") lodged an appeal against the opposition division's decision.

VI. With its statement setting out the grounds of appeal, the appellant-patent proprietor requested as a main request that the decision under appeal be set aside and that the patent be maintained as granted, implying that the opposition be rejected. The appellant-patent proprietor also submitted:

(a) 14 sets of claims of auxiliary requests 1, 2, 3, 3a, 3b, 4, 4a, 5, 6, 7, 8, 9 and 10 respectively

(b) a single claim of auxiliary request 11

(c) the following evidence:

D19: Experimental report by Boehringer Ingelheim Vetmedica GmbH with the title "Comparison of different formulations", dated 30 June 2017 (ten pages in total)

VII. With its statement setting out the grounds of appeal, the appellant-opponent requested that the decision under appeal be set aside and that the patent be revoked in its entirety. The appellant-opponent also submitted the following evidence:

D18: Two experimental reports by Virbac, i.e.

(a) "Final Study Report", dated 6 July 2017 (ten pages in total)

(b) "Study Report", dated 3 July 2017 (14 pages in total)

VIII. With a letter dated 20 August 2018, the appellant-patent proprietor filed two further sets of claims of auxiliary requests 7 and 12 respectively and submitted the following evidence:

D21: Second experimental report by Boehringer Ingelheim Vetmedica GmbH with the title "Aqueous granulation process for Sample C according to report biv-p3-0005-00-01-pd-30 dated 30 June 2017", dated 7 August 2018 (seven pages in total)

IX. The board issued a summons to oral proceedings in accordance with a corresponding request of the appellant-patent proprietor.

X. In a letter dated 30 September 2020, the appellant-opponent informed the board that it would not be attending the oral proceedings.

XI. In a communication pursuant to Article 15(1) RPBA 2020 issued on 12 October 2020, the board drew the parties' attention to the points to be discussed during the oral proceedings.

XII. On 1 December 2020, oral proceedings took place in the presence of the appellant-patent proprietor. The board decided to admit document D21 into the proceedings. Documents D13 and D14, the admission of which had been contested by the appellant-opponent, were also admitted but are not relevant for the outcome of the present decision. At the end of the oral proceedings, the chairwoman announced the board's decision.

XIII. The appellant-opponent's written submissions, in so far as they are relevant to the present decision, may be summarised as follows.

Admission of the experimental data of D21 relating to sample C obtained by means of an aqueous granulation process into the appeal proceedings

These data were late-filed and should not be admitted.

Main request - claim 1 - Added subject-matter

The opposition division erred in considering that the claimed feature "a homogenous dispersion of pimobendan" had the same meaning as the term "pimobendan ..., which is homogenously dispersed in a polyvalent acid selected from the group of citric acid, ..." disclosed on page 5, line 28, to page 6, line 2, of the application as filed. A homogenous dispersion of pimobendan in citric acid or its anhydride was solely disclosed in the application as filed in the context of the

granulation/mixing steps a) to f) of the process of claim 1. Depending on the time span between steps a) to f) on one hand and the compression step g) on the other hand, dephasing and demixing phenomena could occur in the dispersion of pimobendan resulting in a loss of the dispersion's homogenous character. Accordingly, the application as filed did not provide a direct and unambiguous disclosure for solid formulations in accordance with claim 1 as granted in the form of tablets.

Main request - Sufficiency of disclosure

The disclosure of the patent was insufficient for the skilled person to have reproduced a solid formulation as claimed comprising a homogenous dispersion of pimobendan in citric acid or its anhydride and a flavour acceptable to small animals. The patent neither provided a definition of the term "homogenous dispersion" nor mentioned means to determine the presence of this feature in the finished product. The tests disclosed in examples 8 and 9 of the patent were not helpful in this respect since they only permitted evaluating the dispersion of pimobendan in the entire solid formulation.

For the person skilled in the art to have been able to carry out the claimed invention, the patent would have needed to disclose a manufacturing process that inevitably resulted in a solid formulation comprising the aforementioned homogenous dispersion. Nevertheless, no such process was disclosed in the patent, the fluid-bed granulation process of example 4 of the patent not being detailed enough to have led the skilled person necessarily and directly towards a solid formulation containing pimobendan in the form of a

homogenous dispersion as required by claim 1. In particular, no information was provided on the operating equipment used. Also, a number of process variables known for instance from document D9 to have an influence on the degree of homogeneity of each constituent within the structure of the final granule were not specified in the patent. Accordingly, depending on the parameters selected for carrying out the process of example 4 of the patent, the skilled person could possibly but not would have necessarily obtained solid formulations containing pimobendan in the form required by claim 1, as evidenced by the final study report of D18. Further corroborating evidence in this regard was provided by the appellant-patent proprietor itself in point 6.1 of document D19, reporting on an unsuccessful attempt to prepare a solid pimobendan formulation in accordance with claim 1 by a fluid-bed granulation process as defined in the patent.

It followed from the above that the patent did not describe in detail at least one way of carrying out the invention, contrary to the requirements of Rule 42(1)(e) EPC. As the skilled person would not have received any guidance on how to select the appropriate process parameters required to obtain the claimed solid formulations of pimobendan, they would have been compelled to perform an entire research programme when trying to reproduce the claimed invention. As a consequence, the claimed invention was not sufficiently disclosed in the patent.

Main request - Inventive step

The claimed invention lacked inventive step for several reasons.

(a) First, it was known from document D1B that a ratio by weight of citric acid to pimobendan of at least 5:1 was essential for ensuring a satisfactory solubility and resorption of pimobendan in vivo. This limitation was not in claim 1. Its subject-matter covered embodiments which did not solve the technical problem of providing a therapeutic effect in small animals suffering from cardiovascular disorders.

(b) Second, claim 1 could not be implemented over its entire scope, as evidenced by the appellant-patent proprietor's report of an unsuccessful attempt to prepare sample C in document D19 using water as the granulation liquid.

(c) Finally, the subject-matter of claim 1 was obvious based on document D1B as the closest prior art. The solid formulation of this claim differed from the compositions disclosed in D1B solely in that it comprised a flavour acceptable to small animals dispersed within the formulation. No particular technical effect could be attributed to this distinguishing feature apart from the well-known advantage of improved palatability. The objective technical problem was thus to be formulated as the provision of an alternative veterinary medicament comprising pimobendan for the treatment of cardiovascular disorders in dogs, cats and rodents. The solution proposed in claim 1 would have been obvious in light of the common general knowledge or document D6.

Likewise, the process of claim 17 did not involve an inventive step in light of the closest prior art

document D1B in combination with any of the documents D9 to D12.

XIV. The appellant-patent proprietor's written and oral submissions, in so far as they are relevant to the present decision, may be summarised as follows.

Main request - claim 1 - Added subject-matter

The claimed product was defined as being obtainable by a fluid-bed granulation process. This process was disclosed in a one-to-one manner on page 9, lines 1 to 13, of the application as filed. Accordingly, the product defined in claim 1 and the end product of the preparation process disclosed in the application as filed were identical with respect to their inner structure. The opposition division was therefore correct in not seeing any difference in the meaning of the terms "homogenous dispersion" and "homogenously dispersed".

In addition, contrary to the appellant-opponent's view, no demixing or dephasing occurred in the final granules of step f) of the process recited in claim 1. Such phenomena concerned powder mixtures. By contrast, the granulate particulates obtained by the process of claim 1 each represented discrete solid dispersions. Due to the use of a binder ensuring the particulates' integrity, a dephasing or unmixing could practically be excluded.

Main request - Sufficiency of disclosure

Contrary to the appellant-opponent's contention, the patent defined the term "homogenous" in paragraph [0016] as the result of the preparation process of the

invention. This definition even formed part of claim 1 since the preparation process was included in it by way of a product-by-process feature. As this process was characterised by spraying a liquid comprising pimobendan and a binder onto a solid support comprising, *inter alia*, citric acid and a flavour, the skilled person would have readily recognised that the degree of dispersion in the finished product, i.e. its inner structure, was determined by this process. Accordingly, they would have understood the term "homogenous" to describe the inner structure of the claimed formulation as a dispersion obtainable by the fluid-bed granulation process defined in claim 1.

Moreover, based on the information provided in the patent together with the common general knowledge, the skilled person would not have had any difficulties in reproducing this process and preparing formulations according to the claimed invention. The appellant-opponent's experimental data in document D18 did not change this finding. On the contrary, these data demonstrated a certain robustness of the manufacturing process recited in claim 1 by showing that granulates suitable for compression could be prepared by this process despite several process parameters having been adjusted differently. Furthermore, the parameter selected in D18, i.e. the relative standard deviation ("RSD") observed for the pimobendan content of the tested formulations, was not suitable for deciding whether a homogenous dispersion in terms of the patent was obtained.

The data reported for sample C under point 6.1 of document D19 did not support a lack of reproducibility of the process defined in claim 1 either. As evidenced by the additional data of document D21, successfully

reworking sample C with water as the granulation liquid only required adapting the amount of water and the related process parameters. These kinds of adjustments were a matter of routine and would have been part of the skilled person's daily practice. Consequently, the single failure reported in point 6.1 of D19 did not impair the reproducibility of the process defined in claim 1.

Main request - Inventive step

(a) The appellant-opponent's argument that the subject-matter of claim 1 encompassed embodiments which did not solve the technical problem of providing a therapeutic effect in small animals suffering from cardiovascular disorders was without merit. The therapeutic effect of the claimed pharmaceutical compositions hinged on the presence of pimobendan, the efficacy of which was well known in the treatment of cardiovascular diseases in animals. Contrary to the appellant-opponent's view, there was no need to limit the subject-matter of claim 1 to formulations having the citric acid/pimobendan weight ratio specified in document D1B. The patent at issue related to a different invention, and the threshold of at least 5:1 was not relevant any longer for the formulations according to the claimed invention.

(b) The appellant-opponent was also wrong to conclude that the claimed subject-matter would have been obvious based on document D1B as the closest prior art. The solid formulation of claim 1 was different from the tablet disclosed in example 5 of D1B by the presence of a flavour in its matrix, its inner structure and the nature of the residual

granulation liquid contained in the formulation. These differences gave rise to several improvements including an improved palatability. Accordingly, the objective technical problem to be solved was the provision of an improved veterinary drug for administering pimobendan. The solution proposed, i.e. a formulation in accordance with claim 1, would not have been rendered obvious by the prior art documents relied on by the appellant-opponent. Undisputedly, adding a flavour to a formulation to improve its palatability was part of the common general knowledge. However, neither document D1B nor any of the other prior art documents cited by the appellant-opponent in this context suggested incorporating a flavour into granulate particles by an aqueous fluid-bed granulation process in which the active agent was part of the spray liquid. The only document describing a process in which the active agent formed part of the spray liquid was D11. However, this document was silent on mixing the active ingredient with an acidic component or a flavour. Furthermore, the purpose underlying the use of the process described in D11 deviated from the one of the claimed invention in that the pharmaceutical compositions described in D11 were intended for human use. These formulations did not require the incorporation of a flavour. Consequently, no mention was made of any flavouring substance among the list of potential excipients provided in the first paragraph of page 6 of D11.

XV. The parties' final requests, in so far as they are relevant to the present decision, were as follows.

(a) The appellant-patent proprietor requested, as a main request, that the decision under appeal be set

aside and that the patent be maintained as granted, implying that the opposition be rejected. As an auxiliary measure, the appellant-patent proprietor requested that the patent be maintained in amended form on the basis of one of the 17 auxiliary requests filed with its statement setting out the grounds of appeal and its letter dated 20 August 2018 respectively (see points VI. and VIII. above).

(b) The appellant-opponent requested in writing that the decision under appeal be set aside and that the patent be revoked in its entirety. The appellant-opponent also requested that the experimental data of D21 relating to sample C obtained by means of an aqueous granulation process not be admitted into the proceedings.

Reasons for the Decision

1. The appeals are admissible. They comply, *inter alia*, with the requirements pursuant to Article 108 and Rule 99 EPC.

2. Absence of the appellant-opponent from the oral proceedings

2.1 The appellant-opponent had been duly summoned but had chosen not to attend the oral proceedings, as announced in its letter of 30 September 2020.

2.2 In accordance with Rule 115(2) EPC and Article 15(3) RPBA 2020, the board decided to continue the proceedings in the appellant-opponent's absence and to treat the appellant-opponent as relying on its written case. By absenting itself from the oral

proceedings, the appellant-opponent has given up the opportunity to make any further submissions on the relevant issues of the case. Hence the board was in a position to announce a decision at the conclusion of the oral proceedings, as provided for in Article 15(6) RPBA 2020.

3. Admission of the experimental data of D21 relating to sample C obtained by means of an aqueous granulation process ("data of D21")

3.1 The appellant-opponent objected to these data as being late filed and requested that these should not be admitted into the appeal proceedings. No other arguments were provided.

3.2 The board notes that the appellant-patent proprietor had submitted the data of D21 with its letter dated 20 August 2018, i.e. after having filed its reply to the appellant-opponent's statement setting out the grounds of appeal. Hence, the filing of these data constitutes an amendment to the appellant-patent proprietor's case within the meaning of Article 13(1) RPBA 2007.

3.3 Under this article, the board is given discretion in admitting and considering such an amendment.

3.3.1 In the case at hand, the appellant-patent proprietor had filed the data of D21 to counter the appellant-opponent's objection of insufficient disclosure based on the data in point 6.1 of D19 (see point XIII. above). This objection had been raised for the first time in the appellant-opponent's reply to the appellant-patent proprietor's statement setting out the grounds of appeal. Accordingly, the filing of the data

of D21 can be seen as a timely and appropriate response from the appellant-patent proprietor to the aforementioned objection of the appellant-opponent.

3.3.2 The board therefore decided to admit the experimental data of D21 relating to sample C obtained by means of an aqueous granulation process into the appeal proceedings in accordance with Article 13(1) RPBA 2007.

Main request (patent as granted)

4. The subject-matter of claim 1

4.1 Claim 1 as granted is directed to a solid formulation characterised by the following technical features:

(a) It comprises a homogenous dispersion of pimobendan or a pharmaceutically acceptable salt of it in citric acid or its anhydride and a flavour acceptable to small animals ("feature (a)").

(b) It is obtainable by a fluid-bed granulation process comprising steps a) to f) or steps a) to g) as defined in claim 1 ("feature (b)").

4.2 As set out in point 2.2.1 of the board's communication, feature (b) is a "product-by-process" feature. Such a feature is to be construed as relating to the technical properties conferred on the product by the process by which it is defined as being obtainable.

4.3 Hence, claim 1 covers two alternative compositions as follows:

(a) a solid formulation in granular form comprising feature (a), with this formulation being obtainable

by a fluid-bed granulation process comprising steps a) to f)

(b) a solid formulation in tablet form comprising feature (a), with this formulation being obtainable by a fluid-bed granulation process comprising steps a) to g) (i.e. the "tablet" alternative)

5. Amendments - Article 100(c) EPC

5.1 In its statement setting out the grounds of appeal, the appellant-opponent challenged the opposition division's finding expressed in point 1.1. of its decision on the ground that the subject-matter of claim 1 directed to the "tablet" alternative did not find a direct and unambiguous basis on page 5, line 28, to page 6, line 2, taken in combination with page 9, lines 1 to 16, of the application as filed (see point XIII. above).

5.2 The board does not agree.

5.2.1 The passage on page 5, line 28, to page 6, line 2, of the application as filed describes a solid formulation comprising pimobendan or a pharmaceutically acceptable salt of it ("pimobendan") with pimobendan being "homogenously dispersed in a polyvalent acid selected from the group of citric acid, ..., and a flavor acceptable to small animals". In other words, pimobendan takes up this particular physical state in the solid formulation as such. Accordingly, the opposition division was correct in finding that the terms "pimobendan homogenously dispersed in (citric acid)" and "homogenous dispersion of pimobendan in citric acid" had the same meaning in the given context.

5.2.2 Basis for the product-by-process feature (b) of the claimed formulation may be found on page 9, lines 1 to 16, of the application as filed.

5.2.3 In view of the foregoing, the board concludes that the subject-matter of claim 1 directed to the "tablet" alternative is directly and unambiguously derivable from the application as filed. It follows that the appellant-opponent's argument based on a different interpretation of the expression "a homogenous dispersion of pimobendan" compared to the term "pimobendan ..., which is homogenously dispersed in a polyvalent acid selected from the group of citric acid, ..." disclosed on page 5, lines 28, to page 6, line 2, (see point XIII. above) must fail.

5.2.4 For the sake of completeness, it is additionally noted that no evidence has been provided by the appellant-opponent in support of the occurrence of the alleged time-dependent demixing and dephasing phenomena in the final granules referred to in step f) of the process recited in claim 1.

6. Sufficiency of disclosure - Article 100(b) EPC

6.1 To meet the requirements of sufficient disclosure, an invention has to be disclosed in a manner sufficiently clear and complete for it to be carried out by the skilled person, without undue burden, on the basis of the information provided in the patent, if needed in combination with the skilled person's common general knowledge. This means in this case that the skilled person should be able to prepare a solid formulation according to claim 1 comprising a homogenous dispersion of pimobendan in citric acid or its anhydride and a flavour acceptable to small animals.

6.2 In its statement setting out the grounds of appeal, the appellant-opponent argued, *inter alia*, that the patent did not sufficiently disclose the claimed invention because it did not provide any definition of the term "homogenous" (see point XIII. above).

6.3 The appellant-patent proprietor refuted the appellant-opponent's allegation and cited the following sentence of paragraph [0016] of the patent in support of its argument:

"With the process according to the invention, it was possible to formulate a voluntarily accepted, long-term stable, large scale producable, homogenously dispersed, fast-releasing solid formulation."

6.4 In the board's judgment, this sentence teaches an explicit link between the process for preparing the solid formulation according to the patent (i.e. the process recited in claim 1) and the solid formulation's attribute of being homogenously dispersed. In other words, the term "homogenously dispersed" is a descriptive term for the structure imparted to the solid formulation by this process.

6.5 In point 1.2 of the decision under appeal, the opposition division defined this structure as follows:

(a) a core comprising one or several excipients, a flavour and citric acid

(b) a surrounding layer comprising pimobendan and a binder

6.6 The board, noting in particular that the process recited in claim 1 requires pimobendan and a binder to be sprayed onto a solid support comprising one or several excipients, flavour and citric acid anhydrous, finds the opposition division's considerations in point 1.2 of its decision to be technically sound. The board is not aware of any substantive arguments refuting these considerations. The appellant-opponent merely remarked that the appellant-patent proprietor had failed to show that the process recited in claim 1 added a clearly defined characteristic to the solid formulation of claim 1 (see point II of its reply to the statement setting out the grounds of appeal of the appellant-patent proprietor) but did not further elaborate on this aspect.

6.7 The board therefore concludes that the skilled person would have understood the term "homogenous dispersion" according to claim 1 in the context of the patent's disclosure as meaning the structure imparted to the solid formulation by the fluid-bed granulation process recited in claim 1, this structure being as indicated in point 6.5 above.

6.8 The issue of sufficiency of disclosure in the case at hand thus hinges on whether the patent read in light of the common general knowledge would have contained sufficient information for the person skilled in the art to have put into practice the preparation process of claim 1 and thus obtained the intended solid formulation of pimobendan without undue burden.

6.9 In this regard, both parties centred their respective arguments on example 4 of the patent. This example illustrates the manufacture of a tablet formulation by a fluid-bed granulation process in accordance with

claim 1. It is uncontested that this example is silent on the operating equipment used. Nevertheless, as correctly observed by the opposition division in point 1.2. of its decision, an example device for putting this process into practice is described in figure 1 of the patent and on page 3, lines 20 to 26, of the application as filed (i.e. page 3, lines 9 to 12, of the patent). Against this background and contrary to the appellant-opponent's view, the board cannot identify any disclosure gap in the patent in respect of the operation equipment.

6.10 The appellant-opponent is however correct in arguing that the patent does not provide any guidance on the relevant fluid-bed granulation process variables. Nevertheless, as correctly observed by the appellant-patent proprietor, fluid-bed granulation was already a standard procedure in preparing solid pharmaceutical compositions before the effective date of the patent. Accordingly, the board cannot see any reason why the skilled person would not have been able to fill the informational gap in respect of the process parameters by using their common general knowledge and thus reproduce the process of example 4 without undue burden.

6.11 As a matter of fact, the appellant-opponent itself expressly stated in the second paragraph of page 12 of its statement setting out the grounds of appeal that only routine experimentation would have been required to put into practice a fluid-bed granulation process with the excipients of example 4. In the appellant-opponent's view, a skilled person carrying out this process would nevertheless not have necessarily arrived at a solid formulation comprising a homogenous dispersion of pimobendan as required by

claim 1. To corroborate its contention, the appellant-opponent referred to its final study report of D18 and, more particularly, to the experimental data disclosed on page 8 of this report. In its view, these data showed that pimobendan was not homogenously dispersed within the final granulate designated as prototype 2 in spite of the fact that the latter had been manufactured by a fluid-bed granulation process in accordance with claim 1.

6.12 The board notes that the appellant-opponent's conclusion of lack of homogeneity of the pimobendan dispersion in the prototype 2 formulation is based on a RSD of more than 3.9% observed for the pimobendan content in ten batches of this prototype (see chapter 8 on page 8 of the final study report of D18). By contrast, a solid formulation comprising a homogenous dispersion of pimobendan within the context of the patent is a composition having the structural properties as defined in point 6.7 above.
The appellant-opponent did not provide any explanation as to why the chosen parameter (i.e. the above mentioned RSD) was suitable for deciding whether a homogenous dispersion in terms of the patent was obtained, although this point had been brought forward by the appellant-patent proprietor in its reply to the statement setting out the grounds of appeal of the appellant-opponent (see page 13, penultimate paragraph). In the absence of any such explanation, the board finds that the experimental data of D18 relied on by the appellant-opponent is not a suitable piece of evidence to substantiate the appellant-opponent's argument of lack of sufficiency of disclosure due to the unreliability of the process described in example 4 of the patent.

6.13 As regards the appellant-patent proprietor's report in point 6.1. of D19 of an unsuccessful attempt to prepare a solid pimobendan formulation in accordance with claim 1 by a fluid-bed granulation process according to the patent, the following is noted.

D19 is an experimental report concerning three different formulations referred to as samples A, B and C respectively. All three samples were manufactured by an aqueous fluid-bed granulation process in accordance with claim 1. However, only the preparation of samples A and B turned out to be successful, whereas granulation with water as the solvent was not possible for sample C (see chapter 6.1 on page 9 of D19). Confronted with the appellant-opponent's allegation of a lack of reproducibility of the process recited in claim 1 on the basis of this failure, the appellant-patent proprietor successfully reworked sample C with a lower amount of water as the granulation liquid (see chapter 5 of D21). Hence, in the current case, the single failure reported in D19 in sample C is counterbalanced by three examples of a successful implementation of the process recited in claim 1. Also, as evidenced in D21, it only required adapting the amount of water used as the granulation liquid and the related process parameters to transform failure into success. The board concurs with the appellant-patent proprietor that such adjustments would have been a matter of routine for the skilled person working in the field of pharmaceutical technology which would not have necessitated any inventive skill. The single failure reported in D21 does not therefore bring into question the reproducibility of the process recited in claim 1.

6.14 To summarise, the board finds that the alleged lack of sufficiency of disclosure of the process recited in claim 1 has not been conclusively proven by any of the evidence relied on brought forward by the appellant-opponent.

6.15 The board therefore concludes that the appellant-opponent's objection of insufficiency of disclosure pursuant to Article 100(b) EPC does not prejudice the maintenance of the patent as granted.

7. Inventive step - Article 100(a) EPC in conjunction with Article 56 EPC

Closest prior art

7.1 In its communication issued on 12 October 2020, the board identified example 5 of D1B as the closest prior art. In the oral proceedings, the appellant-patent proprietor took the same approach, whereas the appellant-opponent started its assessment of inventive step from page 2, lines 31 to 36, page 3, lines 3 to 6, and claims 1 to 3 and 6 of D1B.

7.2 Example 5 of D1B describes a specific, film-coated tablet comprising pimobendan, anhydrous citric acid and several excipients, this tablet having been prepared in accordance with the granulation process described in example 2 b) of D1B. By contrast, the passages referred to by the appellant-opponent as the starting point are of a more general nature and do not provide any details on the preparation of the compositions described in D1B. The board therefore agrees with the appellant-patent proprietor that example 5 is the embodiment of D1B coming closest to the subject-matter of claim 1.

The features distinguishing the subject-matter of claim 1 from the closest prior art

7.3 The solid formulation of claim 1 differs from the tablet of example 5 of D1B in that it comprises a flavour acceptable to small animals and that this flavour forms part of the final granules of the formulation. This has not been disputed by the appellant-opponent (see point VI.2. of its statement setting out the grounds of appeal).

7.4 However, contrary to the appellant-opponent's view and in agreement with the appellant-patent proprietor, the board considers that the formulation of claim 1 further distinguishes itself from the closest prior art in terms of its inner structure, the reasons being as follows.

7.4.1 As outlined in point 6.6 above, step a) of the process recited in claim 1 is mainly responsible for the structural characteristics of the claimed solid formulation. In this step, pimobendan is included in the binder-containing granulation liquid that is sprayed onto a solid support comprising, *inter alia*, citric acid anhydrous.

7.4.2 By contrast, in the process for preparing the tablet of example 5 of D1B, pimobendan forms part of a powder mixture subjected to granulation with a solution consisting of a binder and ethanol.

7.4.3 In view of these differences, the board is satisfied that the tablet of example 5 does not exhibit the same inner structure as the formulation of claim 1 and that the appellant-patent proprietor has discharged its

burden of proof in the context of product-by-process claims.

7.5 To summarise, the solid formulation of claim 1 differs from the closest prior art by two technical features, that is, its inner structure and the presence of a flavour.

Objective technical problem and solution

7.6 In the oral proceedings, the appellant-patent proprietor alleged that the features distinguishing the claimed subject-matter from the tablet of example 5 of D1B gave rise to several improvements (see point 2.2.4 of the board's communication dated 12 October 2020 for details) and defined the objective technical problem accordingly.

7.7 The board does not endorse the appellant-patent proprietor's view. It rather agrees with the appellant-opponent that the sole technical effect to be taken into account for formulating the objective technical problem is an improved palatability provided by the flavour in the formulation.

7.8 Consequently, the objective technical problem to be solved by the claimed invention with respect to the closest prior art is to be worded as the provision of a solid formulation of pimobendan suitable for the prevention and/or treatment of congestive heart failure, wherein this formulation is more palatable to small animals.

7.9 The board is satisfied that this problem has been successfully solved by the proposed solution, i.e. a solid formulation according to claim 1.

7.10 In the appellant-opponent's view, the subject-matter of claim 1 included formulations which did not provide for the desired therapeutic activity (see point XIII. (a) above). To support its contention, the appellant-opponent referred to the teaching of page 2, lines 21 to 34, in conjunction with page 5, lines 14 to 19, of D1B, according to which a ratio by weight of citric acid to pimobendan of at least 5:1 was essential for ensuring a satisfactory solubility and resorption of pimobendan in vivo. As claim 1 is not limited to this ratio, the appellant-opponent argued that it included formulations of pimobendan which did not solve the technical problem of providing the required therapeutic activity.

7.11 This argument is not found persuasive. As convincingly argued by the appellant-patent proprietor, the therapeutic effect of the pharmaceutical compositions of the claimed invention hinges on the presence of pimobendan. The board does not deny that the scope of claim 1 may include formulations exhibiting a lower therapeutic activity than the tablet of example 5 of D1B. However, in the absence of any evidence to the contrary, it cannot be concluded from this that compositions in accordance with claim 1 with a ratio by weight of citric acid to pimobendan of less than 5:1 fail to provide any therapeutic effect at all.

7.12 To further support that claim 1 could not be implemented over its entire scope, the appellant-opponent referred to the appellant-patent proprietor's report in point 6.1 of D19 of an unsuccessful attempt to prepare sample C using water as the granulation liquid.

7.13 However, in the board's judgment, the substance of this objection does not question the inventive merit of the claimed compositions but whether these can be successfully prepared over the whole scope claimed. The appellant-opponent's objection thus relates to sufficiency of disclosure rather than to inventive step. However, for the reasons provided in point 6.13 above, this objection is not found convincing.

Obviousness

7.14 The claimed solution is not obvious.

7.15 The appellant-opponent, relying, *inter alia,* on document D6, argued that it was well known in the art that the palatability of a formulation could be improved by adding a flavour to it. Also, fluid-bed granulation was a well-known and commonly used procedure for preparing sold pharmaceutical compositions before the effective date of the patent, as evidenced by prior art documents D9 to D12. Accordingly, it would have been obvious for the skilled person to apply this technology to the ingredients of the tablet of example 5 of D1B that additionally comprised a flavour.

7.16 The appellant-opponent's line of argument is not found convincing. Undoubtedly, adding a flavour acceptable to small animals to a composition to improve its palatability is a standard procedure in the field of animal health (see the considerations relating to document D6 in point 1.4.1. of the appealed decision). However, as explained in points 7.4.1 to 7.4.3 above, the claimed formulation differs from the tablet of example 5 of D1B also in terms of its structural properties, conferred to it by the process recited in

claim 1 (see point 6.5 above). In the board's judgement, the skilled person would not have arrived at such a formulation by combining the teaching of the closest prior art with the teaching of any of the prior art documents relied on by the appellant-opponent, the reasons being as follows.

7.16.1 In its statement setting out the grounds of appeal, the appellant-opponent cites the introductory chapter of D9 and the abstract of D10 in support of its obviousness argument. These passages describe fluid-bed granulation processes in general terms. However, as noted by the appellant-patent proprietor, no mention is made in these passages of a process step in which the active ingredient is sprayed together with the binder onto a solid support comprising one or several excipients. Accordingly, in applying the processes described in D9 and D10 to the ingredients of the tablet of example 5 of D1B, the skilled person would not have arrived at a product exhibiting the structural properties of the claimed formulation (see points 7.4.1 and 6.6 above). As a consequence, the teachings of D9 and D10 cannot prejudice inventive step of the claimed subject-matter.

7.16.2 The same holds true for documents D11 and D12. In contrast to D9 and D10, these documents describe a granulation method comprising the step of applying an active agent in liquid form onto a solid support (see example 1 of D11 and page 1, lines 20 to 25, of D12). However, D11 and D12 have a different objective than the claimed invention. The purpose of D11 is to provide a stable formulation containing the amorphous form of donepezil hydrochloride (see page 3, third paragraph). This formulation is intended for human use, and no mention is made of any flavouring substance in D11. Likewise, D12 aims to improve the stability and

homogeneity of formulations comprising plant substances (see page 1, lines 20 to 25) and does not disclose any flavouring agent. Accordingly, the person skilled in the art would not have consulted these two documents when trying to solve the technical problem defined in point 7.8 above. Consequently, documents D11 and D12 do not render the subject-matter of claim 1 obvious either.

Further independent claims 17, 19 and 20

7.17 Claim 17 is directed to a fluid-bed granulation process characterised by the exact same technical features as the process recited in claim 1. Claim 19 pertains to a further medical use of the solid formulation of claim 1 and claim 20 concerns a kit comprising this formulation. Hence, the reasoning provided above in respect of the subject-matter of claim 1 applies analogously to these further independent claims.

7.18 It follows that the appellant-opponent's objection of lack of inventive step pursuant to Article 100(a) EPC in conjunction with Article 56 EPC does not prejudice maintenance of the patent as granted.

Overall conclusion

8. The board finds that none of the grounds for opposition invoked by the appellant-opponent prejudice maintenance of the patent as granted. Accordingly, there is no need for the board to consider the appellant-patent proprietor's auxiliary requests and the appellant-opponent's objections raised against these including its objection of lack of clarity pursuant to Article 84 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The opposition is rejected.

The Registrar: The Chairwoman:

M. Schalow M. Pregetter

Decision electronically authenticated