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Datasheet for the decision of 20 June 2023

Case Number:	T 0873/21 - 3.3.07
Application Number:	15774881.5
Publication Number:	3197429
IPC:	A61K9/00, A61K31/4045, A61K31/428, A61K31/48, A61K31/506, A61K31/70, A61K31/7034, A61K31/7042, A61K31/7048, A61K31/7056, A61P3/10, A61P9/12, A61P1/14, A61P1/16, A61P43/00
Language of the proceedings:	EN

Title of invention:

COMBINATION TREATMENT OF SGLT2 INHIBITORS AND DOPAMINE AGONISTS FOR PREVENTING METABOLIC DISORDERS IN EQUINE ANIMALS

Applicant:

Boehringer Ingelheim Vetmedica GmbH

Headword:

Combination treatment in equine animals / BOEHRINGER INGELHEIM VETMEDICA

Relevant legal provisions:

EPC Art. 56

Keyword:
Inventive step - (yes)

Decisions cited:
G 0002/21

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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 0873/21 - 3.3.07

D E C I S I O N
of Technical Board of Appeal 3.3.07
of 20 June 2023

Appellant: (Applicant)	Boehringer Ingelheim Vetmedica GmbH Binger Strasse 173 55216 Ingelheim am Rhein (DE)
Representative:	Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 4 February 2021 refusing European patent application No. 15774881.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairwoman	Y. Podbielski
Members:	J. Lécaillon
	M. Steendijk

Summary of Facts and Submissions

I. The appeal was filed by the applicant (appellant) against the decision of the examining division to refuse European patent application No. 15 774 881.5 (hereinafter "the application").

II. The decision was based on a main request filed on 11 April 2019 and two auxiliary requests filed on 26 November 2020.

III. The following documents were cited in the decision of the examining division or introduced by the applicant during the examination proceedings:

D4: US2007/0259821 A1
D14: WO2007/129053 A1
D15: Catherine McGowan: "Diagnosis and treatment of equine Cushings syndrome". The Veterinarian, Clinical Review, 26 January 2005 (2005-01-26), cited in the application, XP055765089, retrieved from the Internet: URL:http//citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.631.9821 &rep=rep1 &type=pdf
D16: Supplemental experimental data "Example 4" submitted on 11 April 2019

IV. The examining division decided that the subject-matter of the claims of the main request as well as of auxiliary requests 1 to 2 did not meet the requirements of Article 56 EPC.

V. With the statement setting out the grounds of appeal the appellant defended its case on the basis of the main request filed on 11 April 2019 or, alternatively, based on one of the auxiliary requests 1 to 2 filed on

26 November 2020. These requests corresponded to the requests on which the decision was based.

VI. In preparation of the oral proceedings, the Board issued a communication according to Article 15(1) RPBA 2020 dated 3 April 2023. In this communication the Board provided its preliminary opinion. In particular, the Board indicated that the main request did not appear to meet the requirements of Article 56 EPC, while the subject-matter of the claims of auxiliary request 1 appeared to involve an inventive step.

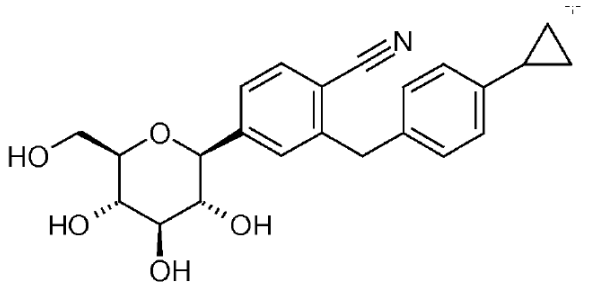
VII. With the letter dated 19 May 2023, the appellant withdrew its main request. The former auxiliary requests 1 and 2 became the new main request (hereinafter "the main request") and the new auxiliary request 1, respectively.

VIII. The content of the claims upon which the present decision is based can be illustrated as follows:

The independent claim of the main request read as follows:

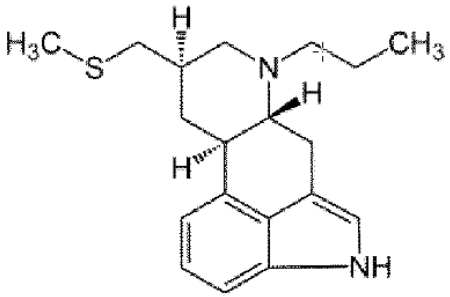
"1. One or more SGLT2 inhibitors or pharmaceutically acceptable forms and/or salts thereof in combination with one or more dopamine receptor agonists or pharmaceutically acceptable forms and/or salts thereof for use in the treatment and/or prevention of a metabolic disorder of an equine animal, wherein the metabolic disorder is one or more disorders selected from Equine Metabolic Syndrome (EMS), Equine Pituitary Pars Intermedia Dysfunction (PPID), and laminitis, wherein the one or more SGLT2 inhibitor is

1-cyano-2-(4-cyclopropyl-benzyl)-4-(β-D-glucopyranos-1-yl)-benzene, represented by formula (2):



or a pharmaceutically acceptable salt and/or form thereof, wherein preferably the pharmaceutically acceptable form is a crystalline complex between the SGLT2 inhibitor and one or more amino acids, preferably wherein the one or more amino acids is proline, more preferably L-proline, and wherein the one or more dopamine receptor agonist is

(8β)-8-[(methylthio)methyl]-6-propylergoline (pergolide), represented by formula (20):



"

The remaining claims 2 to 9 were dependent claims.

IX. On 26 May 2023, the Board informed the appellant that the oral proceedings were cancelled.

X. The appellant requested that the decision under appeal be set aside and a patent be granted based on the main request filed as auxiliary request 1 on 26 November 2020.

XI. The arguments of the appellant, as far as relevant for the present decision, can be summarised as follows:

D14 represented the closest prior art because it related to a combination therapy containing one of the presently claimed compounds for the treatment of metabolic disorders. The claimed subject-matter differed from the one of D14 in the nature of the second agent. It had been shown in the supplemental experimental data (D16) that the claimed agents used in combination led to improved insulin sensitivity with a synergistic effect. This effect was plausible at the priority date in view of the known effects of each agent individually and the mention in the original description of an improved insulin sensitivity when the agents were used in combination (see page 4, third paragraph). The objective technical problem resided therefore in the provision of an improved combination treatment of EMS, PPID and/or laminitis in horses based on pergolide, wherein the improvement resided in a synergistic therapeutic effect. None of the prior art documents suggested the present combination for treating EMS, PPID and/or laminitis in horses, let alone with the expectation of achieving a synergistic effect, which was fundamentally unpredictable. The subject-matter of the claims of the main request therefore involved an inventive step.

Reasons for the Decision

Main request

1. Amendments

1.1 The examining division did not raise any objection of lack of compliance with the requirements of Article 123(2) EPC. As stated by the appellant (see submission of 26 November 2020 item 1.1), claim 1 of the present main request is based on original claims 1, 2, 4 and 5 and claims 2 to 9 correspond to original claims 6 to 13.

1.2 The Board is satisfied that the requirements of Article 123(2) EPC are met.

2. Sufficiency of disclosure and novelty

The examining division did not raise any objection of lack of sufficiency or novelty for the present main request (corresponding to auxiliary request 1 underlying the decision of the examining division). The Board agrees that the subject-matter of the main request fulfills the requirements of Articles 83 and 54 EPC.

3. Inventive step

3.1 Closest prior art

3.1.1 The present application relates to compound (A) (corresponding to Formula (2), also referred to as velagliflozin) and compound (B) (corresponding to Formula (20), referred to as pergolide) for use in the

treatment and/or prevention of Equine Metabolic Syndrome (EMS), Equine Pituitary Pars Intermedia Dysfunction (PPID or equine Cushing's syndrome) and/or laminitis in an equine animal.

3.1.2 The examining division considered D15 to represent the closest prior art while the applicant argued that D14 represented a better starting point.

3.1.3 D14 concerns the use of compound (B) in combination with other active ingredients (different from SGLT2 inhibitors) for use in the treatment of EMS, in particular PPID and associated laminitis (see *e.g.* page 1 first paragraph and example H on page 87ff). D15 also discloses compound (B) for use in the treatment of PPID (see e.g. page 4, under "dopamine agonists"). However, as argued by the appellant, since D14 further concerns a combination therapy as in the present application, the subject-matter disclosed in D14 is closer to the presently claimed one than D15.

3.1.4 D14 is therefore considered to represent the closest prior art.

3.2 Distinguishing feature

3.2.1 The subject-matter of claim 1 of the main request differs from the one disclosed in D14 in the nature of the second active agent used (serotonine and melatonine agonist in D14 *versus* specific SGLT2 inhibitor, compound (A) in the present main request).

3.3 Technical effect

3.3.1 According to the appellant, the technical effect resulting from this distinguishing feature is an

improved insulin sensitivity, in particular a synergistic interaction of compound (A) and compound (B) as demonstrated by the supplemental experimental data provided on 11 April 2019 (see D16).

3.3.2 As argued by the appellant, a therapeutic effect of the claimed combination on metabolic disorders would have been expected at the priority date because both compounds were each known at the priority date as useful for the treatment of metabolic disorders (compound (A), see D4) and in the treatment of PPID in horses (compound(B), see D14). Furthermore, an improved effect in terms of insulin sensitivity when monotherapy with one or more dopamine receptor agonist is insufficient was generally described in the original application on page 4 lines 9 to 11. Hence, the Board agrees with the appellant that the therapeutic synergistic effect substantiated in D16 was derivable from the original application, and that the data of D16 only provided a quantification of the obtained improvement in insulin sensitivity described in the original application.

3.3.3 Accordingly, the Board considers that the synergistic effect relied upon by the appellant was encompassed by the technical teaching of the original application in light of the common general knowledge regarding the therapeutic effects of compound (A) and compound (B) and was embodied by the present combination since it was clearly the preferred combination in the original application (see page 22 line 25, claim 5 and all the examples). In line with G 2/21, the technical effect demonstrated by the post-published experimental data provided in D16 is thus to be taken into account when assessing the inventiveness of the claimed subject-matter.

3.3.4 In this context, the Board observes that the experimental data provided in D16 showed that the combination treatment (pre-treatment with compound (B)and then treatment with compound (A) for 25 days followed by a period of 17 days without any treatment) led to better results in terms of insuline serum concentration, insuline resistance and plasma leptin concentration in horses suffering from EMS and PPID and acute laminitis than treatments with compound (A) alone or compound (B) alone. Nevertheless no experimental data on the symptoms of Equine Metabolic Syndrome (EMS), PPID and laminitis were reported. The biological mechanisms involved in EMS, in particular PPID and associated laminitis, are complex. However, hyperinsulinemia and insuline resistance have been identified as being involved (see D14 pages 48-50 and D15 page 2 column 3 2nd paragraph). It is therefore credible that the synergistic effect observed in D16, in particular on insuline concentrations will be advantageous in the treatment of EMS, PPID and laminitis in an equine animal.

3.4 Objective technical problem

Hence, the objective technical problem underlying the main request resides the provision of a further combination of active agents containing compound (B) for use in the treatment of EMS, equine PPID and/or laminitis in an equine animal which provides a synergistic effect on insulin resistance.

3.5 Obviousness of the solution

The combination of compounds (A) and (B) for use in the treatment of the present disorders *per se* might have

appeared obvious when combining the teachings of D14 (disclosing compound (B) for said use) and of D4 (disclosing compound (A) for use in the treatment of metabolic disorders which are known to appear in PPID). However none of the cited prior art documents suggests a synergistic effect on insuline concentrations for the combination of compound (A) and compound (B). It follows that the skilled person would not have found in the prior art any suggestion towards the present solution to the above defined objective technical problem.

3.6 As a result the main request fulfills the requirements of Article 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division with the order to grant a patent on the basis of the set of claims of the main request filed as auxiliary request 1 on 26 November 2020 and a description to be adapted thereto.

The Registrar: The Chairwoman:

K. Boelicke Y. Podbielski

Decision electronically authenticated