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Datasheet for the decision of 9 February 2021

Case Number: T 0626/17 - 3.3.01

Application Number: 03748553.9

Publication Number: 1542670

IPC: A61K31/202, A61P25/28, A23L1/30

Language of the proceedings: EN

Title of invention:
COMPOSITION CONTAINING ARACHIDONIC ACID ALONE OR IN COMBINATION WITH DOCOSAHEXAENOIC ACID FOR ENHANCING COGNITIVE ABILITIES IN ADULTS

Patent Proprietor:
Suntory Holdings Limited

Opponent:
N.V. Nutricia

Headword:
Arachidonic acid for enhancing cognitive abilities / SUNTORY

Relevant legal provisions:
EPC Art. 123(2), 100(b), 87, 54, 56
RPBA Art. 12(4)

Keyword:

Main request - amendments - added subject-matter (no)
Main request - sufficiency of disclosure (yes)
Main request - novelty of use - second (or further) non-medical use (yes)
Main request - inventive step (yes)
Late-filed objection under Article 100(b) EPC - admitted (no)
Late-filed documents - admitted (yes)

Decisions cited:

T 2607/16

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Beschwerdekammern

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Case Number: T 0626/17 - 3.3.01

D E C I S I O N
of Technical Board of Appeal 3.3.01
of 9 February 2021

Appellant: (Opponent)	N.V. Nutricia Eerste Stationsstraat 186 2712 HM Zoetermeer (NL)
Representative:	Nederlandsch Octrooibureau P.O. Box 29720 2502 LS The Hague (NL)
Respondent: (Patent Proprietor)	Suntory Holdings Limited 1-40, Dojimahama 2-chome, Kita-ku, Osaka-shi, Osaka 530-8203 (JP)
Representative:	Mewburn Ellis LLP Aurora Building Counterslip Bristol BS1 6BX (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 12 January 2017 concerning maintenance of the European Patent No. 1542670 in amended form.**

Composition of the Board:

Chairman	A. Lindner
Members:	S. Albrecht
	R. Romandini

Summary of Facts and Submissions

I. European patent No. 1 542 670 ("the patent") is based on European patent application No. 03748553.9 ("application as filed"). The patent was granted on the basis of a set of 25 claims.

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:

D1: EP 1 419 768 A1
D2: WO 01/24645 A1
D3: Japanese patent office machine translation of published Japanese patent application JP 06-251679 (A) into English
D4: WO 96/40106 A2
D5: WO 02/02105 A1
D6: WO 98/08501 A1
D7: WO 01/84961 A2
D8: WO 00/21524 A1
D11: English abstract of published Japanese patent application JPH10101568 (A)
D11a: Japanese patent office machine translation of Japanese patent application JPH10101568 (A) into English
D12: M. Beukers et al., Pharmaceutisch Weekblad Scientific edition 13(1), 1991, 7-12
D14: WO 97/26804 A1
D15: US 5,198,468

D17: A.C. Bach et al., The American Journal of Clinical Nutrition 36, 1982, 950-62
D22: P. Willatts et al., THE LANCET 352, 1998, 688-91
D25: J. Polich, Psychophysiology 33, 1996, 334-53
P1: JP 2002-277305
P2: Japanese patent office machine translation of published Japanese patent application JP 2003-048831 into English

IV. The opposition division decided that the patent in amended form in the version of auxiliary request 2 and the invention to which it related met the requirements of the EPC. In respect of this request, the opposition division concluded, *inter alia*, that:

(a) claim 1 did not comprise added subject-matter

(b) the claimed invention was sufficiently disclosed

(c) claim 1 was novel over documents D1 to D8 and D11

(d) claim 1 involved an inventive step based on document D22 as the closest prior art

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

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

D29: T. Lømo, Phil. Trans. R. Soc. Lond. B 358, 2003, 617-20
D30: T.V.P. Bliss et al., J. Physiol. 232, 1973, 357-74

D31: T.V.P. Bliss et al., J. Physiol. 232, 1973, 331-56

VII. In its reply to the statement setting out the grounds of appeal, the patent proprietor ("respondent") requested as its main request that the patent be maintained in the form upheld by the opposition division or, alternatively, on the basis of one of the sets of claims of auxiliary requests 1 and 2, filed as auxiliary requests 2A and 3A respectively by letter of 15 September 2016.

Claim 1 of the main request reads as follows:

"1. Use of a composition containing arachidonic acid and/or a compound in which arachidonic acid is a constituent fatty acid, for the treatment of a healthy adult human to improve or enhance normal responses of cognitive abilities."

Claim 1 of auxiliary request 1 differs from claim 1 of the main request by adding the following passage at the end of the claim:

"so as to shorten P300 latency or augment P300 amplitude of the event related potentials of the brain (P300) as a response index of cognitive ability."

VIII. The parties were summoned to oral proceedings to be held on 15 May 2020 at the premises of the boards.

IX. In a communication pursuant to Article 15(1) RPBA 2020 issued on 16 March 2020 ("communication"), the board drew the parties' attention to the points to be discussed during the oral proceedings.

X. In a communication dated 4 May 2020, the registry of the board informed the parties that due to precautionary measures against the spread of the coronavirus (COVID-19), the oral proceedings scheduled for 15 May 2020 could not take place and had been rescheduled to 9 February 2021.

XI. In a letter dated 15 September 2020, the appellant withdrew its request for oral proceedings and informed the board that it would not attend the oral proceedings.

XII. By letter dated 18 January 2021, the respondent informed the board that it would not be able to attend the oral proceedings at the premises of the boards because of the COVID-19 pandemic.

XIII. Consequently, the oral proceedings were converted into videoconference-based oral proceedings.

XIV. In a letter dated 3 February 2021, the appellant informed the board that it would not attend the videoconference-based oral proceedings and reiterated its request for revocation of the patent in its entirety.

XV. Oral proceedings were held by videoconference on 9 February 2021 in the presence of the respondent. In the course of these proceedings, the respondent withdrew its main request and maintained auxiliary request 1 as the main and sole request ("main request").

XVI. At the end of the oral proceedings, the chairman announced the board's decision.

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

Amendments (Article 123(2) EPC) - claim 1

Claim 1 comprised added subject-matter for two reasons.

First, the application as filed did not provide any basis for replacing the term "healthy person" in claim 1 as filed with the term "healthy adult human". Adult subjects were described in the application as filed solely in the context of a specific daily intake of arachidonic acid, as evidenced by claim 20 as filed, page 19, lines 14 to 20, and page 20, lines 16 to 26, of the application as filed. Contrary to the opposition division's finding, examples 4 and 5 of the application as filed did not provide a basis for generalising the term "adult human" on page 19, lines 14 to 20, and on page 20, lines 16 to 26, of the application as filed to all healthy adult humans.

Second, the claimed feature "Use of a composition or compound containing arachidonic acid and/or a compound in which arachidonic acid is a constituent fatty acid, for the treatment of" constituted added subject-matter since the application as filed only disclosed compositions with "effects of …". The term "having an effect of" merely defined a characteristic of a product, whereas "treating something" implied an action taken on a subject, typically in the form of an administration.

Sufficiency of disclosure

The claimed invention could not be carried out by the skilled person over the entire scope of claim 1. It was not plausible that the effects on P300 responses to auditory cues shown in the examples of the patent extended to the other cues described in paragraph [0011] of the patent, i.e. visual, gustatory, olfactory and somatosensory stimuli. This was because different pathways were involved and different parts of the brain were involved in processing.

Priority

The patent did not enjoy the claimed right of priority because the claimed subject-matter had already been disclosed in the earlier national patent application JP 2001-235519.

Novelty

The term "normal responses of cognitive abilities" recited in claim 1 would have been understood by the skilled person to mean the general human brain functions encompassing all cognitive abilities. Based on this interpretation, the subject-matter of claim 1 lacked novelty over the disclosures of documents D1 to D8 and D11. The additional feature "so as to shorten P300 latency or augment P300 amplitude of the event related potentials of the brain (P300) as a response index of cognitive ability" in claim 1 did not change this finding on novelty. This feature was a mere mechanism of action for the effect of arachidonic acid on enhancing cognitive abilities which had long been described by the prior art, as evidenced for instance by documents D1 to D4, D6, D8, D11a, D12 and D22. This

discovery of the mechanism of action behind a known use did not constitute a new technical teaching on the basis of which novelty could be acknowledged.

Inventive step

Document D12 could serve as the closest prior art. This document disclosed (on page 9, paragraph bridging the left and right column) the ability of arachidonic acid to induce long-term potentiation ("LTP"). LTP was synonymous with the claimed use, as evidenced by documents D29 to D31. In addition, document D12 provided on page 11, left column, a clear suggestion to use arachidonic acid in nootropic drugs. Such drugs were clearly intended for humans. Accordingly, the claimed sub-group of human adults constituted the sole difference vis-à-vis document D12. Since no particular technical effect could be attributed to this target group, the objective technical problem was to be worded as the provision of an alternative subject group for the improvement of normal responses of cognitive ability. The proposed solution, i.e. healthy human adults, would have been obvious in light of the closest prior art taken in combination with documents D11 or D15. Furthermore, neither could the fatty acids defined in claim 10 provide a basis for an inventive step in light of document D12 as the closest prior art taken in combination with document D17.

Alternatively, if document D22 were taken as the closest prior art, the sole difference between the claimed subject-matter and this disclosure would be the claimed target group, i.e. healthy human adults instead of healthy human infants. The objective technical problem was to be defined as the provision of an alternative target group for the improvement of normal

responses of cognitive ability. The proposed solution, i.e. healthy human adults, would have been obvious in light of the closest prior art taken in combination with document D11 or document D14.

XVIII. The respondent's written and oral submissions, in so far as they are relevant to the present decision, may be summarised as follows.

Amendments (Article 123(2) EPC) - claim 1

Contrary to the appellant’s view, the daily amount of arachidonic acid specified in claim 20 as filed as well as on page 19, lines 14 to 20, and on page 20, lines 16 to 26, of the application as filed was not an essential feature in relation to the use with adults. The skilled reader would have understood that the active component was necessarily administered to someone - either a child or an adult - prior to the discussion of daily amounts of arachidonic acid in the application as filed. The use with adults was also confirmed by the disclosures in examples 4 and 5 of the application as filed. The reference to “consenting individuals” in these examples and the mentioning that the individuals’ consent was based on an explanation of the test involved made it clear that these individuals were adults.

Basis for the feature "Use of a composition ... for the treatment of ..." was found in the claims as filed as well as on page 9 (line 32), page 20 (lines 14, 15 and 22), and in examples 4 and 5 of the application as filed.

Sufficiency of disclosure

P300 was known to be relevant for reactions to stimuli of various kinds, not only auditory, as evidenced for instance by document D25, page 335, right-hand column, first full paragraph. Therefore, the level of generality of the claims was *prima facie* reasonable from a technical point of view. By contrast, the appellant's objections were vague arguments without any specific technical substantiation of difficulties or impossibilities for the skilled person. It gave no reason why the skilled person would not have been able to put the invention into effect across its scope.

Priority

The application from which the patent claimed priority was the first application disclosing the claimed use. Accordingly, the claims were entitled to the claimed priority date.

Novelty

The passages of documents D1 to D8 and D11 cited by the appellant in support of its novelty objection did not directly and unambiguously disclose the improvement or enhancement of normal responses of cognitive abilities within the meaning of the claims.

Inventive step

Document D12 was not a relevant starting point in the state of the art because it had no relation to cognitive responses of the claimed type and so could not possibly have been the basis of an obvious route to the claimed invention. The same applied with respect to

document D22. First, this document was specifically about infant development. It described the use of long-chain polyunsaturated fatty acids (LCPUFA) to improve problem-solving ability in infants. LCPUFA deficiency was known to be an issue with brain development in babies but did not really have a counterpart in adult life. Second, the tests described in document D22 were completely different and did not imply improvements in cognitive response within the meaning of the patent.

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

The appellant requested in writing that the decision under appeal be set aside and that the patent be revoked in its entirety.

The respondent requested that the decision under appeal be set aside and that the patent be maintained on the basis of the set of claims of the main request filed as auxiliary request 2A with the letter of 15 September 2016.

Reasons for the Decision

1. The appeal is admissible. It complies, *inter alia*, with the requirements pursuant to Article 108 and Rule 99 EPC.

2. Absence of the appellant from the oral proceedings

2.1 The appellant had been duly summoned but had chosen not to attend the oral proceedings, as announced in its letter of 3 February 2021.

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's absence and to treat the appellant as relying on its written case. By absenting itself from the oral proceedings, the appellant has given up the opportunity to make any further submissions. 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. Admittance of the appellant's objection of lack of sufficiency of disclosure mentioned in the paragraph bridging pages 5 and 6 of the statement setting out the grounds of appeal

3.1 In point 2.3 of its communication, the board indicated its intent not to admit this objection into the proceedings since it appeared to be a newly raised line of attack of the appellant that could have been presented in the opposition proceedings (Article 12(4), first half-sentence RPBA 2007).

3.2 Following this communication, the appellant did not submit any further arguments on this issue.

3.3 As a consequence, the board sees no reason to deviate from its preliminary opinion. Therefore, it decided not to admit this objection into the proceedings (Article 12(4), first half-sentence RPBA 2007).

4. Admittance of documents D29 to D31

4.1 The appellant filed these documents with its statement setting out the grounds of appeal.

4.2 Thus, according to Article 12(1) RPBA 2020, these documents form part of the basis of the appeal proceedings unless the board exercises its discretion under Article 12(4), first half-sentence RPBA 2007 (see Article 25(2) RPBA 2020), not to admit them into the proceedings.

4.3 As outlined in point 1. ff of its communication, the board considers the filing of documents D29 to D31 to constitute a timely, legitimate reaction to the appealed decision. As a consequence, the board does not see any reason to exercise its discretion to hold these documents inadmissible pursuant to Article 12(4), first half-sentence RPBA 2007.

Main request

5. The claimed subject-matter

5.1 Claim 1 is drafted in the form of a second or further non-medical use claim. It relates to the use of:

(a) a composition containing arachidonic acid and/or a compound in which arachidonic acid is a constituent fatty acid;

(b) for the purpose of:

(i) treating a healthy adult human;

(ii) to improve or enhance normal responses of cognitive abilities;

(iii) so as to shorten P300 latency or augment P300 amplitude of the event-related

potentials of the brain (P300) as a response index of cognitive ability.

5.2 In so far as the claimed feature "normal responses of cognitive abilities" is concerned, the board agrees with the appellant that the term "cognitive abilities" is commonly understood to mean brain-based functions such as attention, memory, perception, language, calculation and processing speed. This definition is also in line with the description of the patent (see paragraphs [0002], [0019] and [0049]).

5.3 However, the board notes that claim 1 does not pertain to the enhancement or improvement of such cognitive abilities in a healthy adult human as such. Rather, it stipulates that the composition or compound referred to in point 5.1(a) above improves or enhances normal **responses** (emphasis by the board) of cognitive abilities of a healthy adult human. As submitted by the respondent, the term "responses" is to be understood in the current context as reactions of the cognitive abilities of a healthy adult human to stimuli or events.

5.4 These events or stimuli, in turn, must be of the kind that elicit the P300 component of the event-related potentials of the brain of the subject to be treated in accordance with claim 1 (see point 5.1(b)(iii) above).

5.5 Hence, a subject with "normal responses of cognitive abilities" in the context of the subject-matter of claim 1 is a healthy adult human exhibiting a normal cognitive reaction to a stimulus or event, this reaction being characterised by the activation of the P300 component in the subject's brain as a direct

result of this stimulus or event (see also paragraph [0004] of the patent).

6. Amendments - Article 123(2) EPC

6.1 In this context, the points under dispute were whether the application as filed directly and unambiguously discloses the following features of claim 1:

(a) the claimed subject group, i.e. a healthy adult human ("feature (a)")

(b) the use of a composition or compound in accordance with claim 1 for the treatment of [a healthy adult human] ("feature (b)")

6.2 In the board's judgment, both features find basis in the application as filed within the meaning of Article 123(2) EPC. The reasons are as follows.

Feature (a)

6.2.1 Claim 1 as filed describes a composition containing arachidonic acid and/or a compound in which arachidonic acid is a constituent fatty acid having effects of decline prevention, improvement or enhancement of normal responses of cognitive abilities of a healthy person. The limitation to healthy human subjects is disclosed on page 9, lines 27 to 37, of the application as filed.

6.2.2 As concerns the further restriction to human adults, the board holds that on a natural reading of claim 1 as filed, the skilled person would have understood the term "healthy person" to include adults. To verify this meaning, the skilled person would have consulted the

description of the application as filed and found confirmation for their interpretation on page 19, lines 14 to 20, and in examples 4 and 5, as explained in more detail in the following paragraphs.

Page 19, lines 14 to 20, of the application as filed

6.2.3 This passage reads:

"Thus, the daily intake of arachidonic acid or a compound with arachidonic acid as a constituent fatty acid according to the invention for an adult (60 kg body weight, for example) is 0.001-20 g, preferably 0.01-10 g, more preferably 0.05-5 g and most preferably 0.1-2 g, in terms of arachidonic acid."

Hence, this passage discloses a specific daily intake of arachidonic acid in connection with an adult having a body weight of 60 kg.

6.2.4 This interpretation is corroborated by the sentence disclosed on page 20, lines 16 to 26, of the application as filed which states that "[t]he doses of the composition of the invention will differ depending on the age, body weight and symptoms of the patient and the number of times administered, and **for example**, the arachidonic acid and/or compound with arachidonic acid as a constituent fatty acid according to the invention **may usually** be administered at about 0.001-20 g, preferably about 0.01-10 g, more preferably about 0.05-5 g and most preferably about 0.1-2 g in terms of arachidonic acid per day **for an adult (approximately 60 kg)**, in divided doses of 1 to 3 times a day". (Emphasis by the board.)

6.2.5 In light of this disclosure, the skilled person would have immediately recognised that the dosages of 0.001-20 g of arachidonic acid per day reported on page 19, lines 14 to 20, of the application as filed represented preferred embodiments of the invention defined in claim 1 as filed in which the "healthy person" in accordance with claim 1 was an adult having a body weight of 60 kg. This subject group being very specific, the skilled person would have understood by implication that arachidonic acid may also cause the effects recited in claim 1 as filed (see point 6.2.1 above) in adults with body weights other than 60 kg. Accordingly, they would have considered the passage on page 19, lines 14 to 20, of the application as confirmation for their interpretation of the term "healthy person" in claim 1 to include healthy adult persons.

Examples 4 and 5 of the application as filed

6.2.6 These examples describe studies aiming to determine the effects of an arachidonic-acid containing composition on cognitive responses in healthy consenting individuals. The individuals' age is not specified in these examples. However, it is clear to the board that the test subjects are adults for the reasons put forward by the respondent (see point XVIII. above in relation to Article 123(2) EPC).

6.2.7 The appellant argued in writing that examples 4 and 5 were specific disclosures that could not provide a basis within the meaning of Article 123(2) EPC for the subject-matter of claim 1 in the claimed generality.

6.2.8 This is correct. However, as explained in point 6.2.2 above, examples 4 and 5 would merely have served to

confirm the skilled person's understanding of the term "healthy person" in claim 1 as filed to include adults.

6.2.9 In light of the preceding considerations, the board concludes that feature (a) finds basis in the application as filed within the meaning of Article 123(2) EPC.

Feature (b)

6.2.10 In its reply to the statement setting out the grounds of appeal, the respondent submitted that the effects of improvement or enhancement of cognitive abilities of a healthy person recited in the claims as filed implicitly disclosed a situation of administering or treating this person with the composition referred to in these claims. In addition, the application as filed disclosed on page 9 (line 32), page 20 (lines 14, 15 and 22), and in examples 4 and 5, the administration of the claimed composition to (healthy) persons to achieve the desired improvements or enhancements. Accordingly, the feature "Use of a composition ... for the treatment of ..." did not constitute added subject-matter within the meaning of Article 123(2) EPC (see points (2)(b)(iv) and (v) of the respondent's reply to the statement setting out the grounds of appeal).

6.2.11 In point 3.3 of its communication, the board stated that it provisionally agreed with the respondent's view.

6.2.12 The appellant did not submit any facts or substantive arguments in reaction to the board's communication. It limited itself to withdrawing its request for oral proceedings, reiterating its request for revocation of the patent as a whole and announcing that it would not

attend the oral proceedings (see points XI. and XIV. above).

6.2.13 Given these circumstances, the board sees no reason to change its preliminary opinion.

Overall conclusion on Article 123(2) EPC

6.2.14 It follows that the appellant's objections under Article 123(2) EPC against claim 1 of the main request do not prejudice the maintenance of the patent based on the main request. For the sake of completeness, the board observes that the feature "so as to shorten P300 latency or augment P300 amplitude of the event related potentials of the brain (P300) as a response index of cognitive ability" has a basis in claims 17 and 18 as filed.

7. Sufficiency of disclosure (Article 100(b) EPC)

7.1 In this regard, the point of dispute was whether the effects on P300 responses to auditory cues demonstrated in examples 4 and 5 of the patent can be recognised as being achievable over the entire scope of the claims (see point XVII. above in relation to sufficiency of disclosure).

7.2 In accordance with the established case law of the boards, a successful objection of lack of sufficiency of disclosure presupposes that the opponent presents serious doubts, substantiated by verifiable facts (T 2607/16, point 2.12 with further references).

7.3 In the case at hand, it is a known fact that P300 responses may be generated by various events including auditory, visual and somatosensory stimuli, as

evidenced by document D25 (see page 335, right-hand column, first full paragraph) and examples 4 and 5 of the patent. The latter undisputedly show the claimed P300 response effects in healthy human adults subjected to auditory stimuli.

7.4 In view of the above, the board finds that the appellant has not alleged verifiable facts, supported by evidence, which could substantiate the objection that the claimed P300 response effects are not achievable over the entire scope of the claims. In the absence thereof the board holds that the claimed invention is sufficiently disclosed.

8. Entitlement to priority (Article 87 EPC)

8.1 The patent claims priority from the national patent application JP 2002-277305 filed on 24 September 2002 (i.e. document P1).

8.2 The appellant disputed in writing the validity of this priority claim on the ground that the claimed invention had already been disclosed in the previous national patent application JP 2001-235519 filed on 2 August 2001, published as JP 2003-048831. In support of its argument, the appellant referred to document P2, an English machine translation of JP 2003-048831 (see third paragraph of appellant's letter dated 16 November 2017 in conjunction with page 6 of its statement setting out the grounds of appeal).

8.3 The appellant's objection was subsequently addressed in point 4.3.3 of board's communication. The board indicated that it was not convinced by the appellant's argument.

8.4 The appellant did not submit any substantive arguments in reaction to this communication. As a consequence, the board sees no reason to change its preliminary opinion and therefore dismisses the appellant's objection for lack of validity of the priority claim.

8.5 It follows that document D1 forms part of the prior art as defined in Article 54(3) EPC and Article 54(4) EPC 1973.

9. Novelty (Article 54 EPC)

9.1 Preliminary remark with regard to document D11

Document D11 is the English abstract of the published Japanese patent application JPH10101568 (A). When referring to document D11 in their submissions, both parties effectively relied on passages of the English translation of this patent application, which is document D11a in this procedure. In this decision, the board will therefore also refer to document D11a.

9.2 The appellant raised an objection of lack of novelty of claim 1 over documents D1 to D8 and D11a. This objection cannot succeed for the following reasons.

Documents D5 and D7

9.2.1 As noted in point 4.4.2 of the board's communication, the appellant's general reference to submissions made during opposition proceedings does not meet the requirement under Article 12(3) RPBA 2020, requiring a party to "specify expressly all the requests, facts, objections, arguments and evidence relied on”. Hence, these unspecified submissions are disregarded in accordance with Article 12(4) RPBA 2007.

Documents D1 to D4, D6, D8 and D11a

9.2.2 The board agrees with the respondent that the disclosures of documents D1 to D4, D6, D8 and D11a relied on by the appellant in support of its novelty objection do not directly and unambiguously disclose the claimed improvement or enhancement in a healthy adult human (see point (5) of the reply to the statement setting out the grounds of appeal).

9.2.3 The appellant's arguments in this regard (see point XVII. above in relation to novelty) are not found persuasive. As explained in point 5.2 ff above, the skilled person would have interpreted the term "normal responses of cognitive abilities" in the technical context of the claimed subject-matter as meaning normal cognitive reactions to stimuli or events, with these reactions being characterised by the activation of the P300 component in the subject's brain as a direct result of these stimuli or events. In other words, the feature "so as to shorten P300 latency or augment P300 amplitude of the event related potentials of the brain (P300) as a response index of cognitive ability" recited in claim 1 is not a mere mechanism of action behind the effect of improving or enhancing normal responses of cognitive abilities to any type of stimulus or event. Rather, this feature limits the claimed non-medical use to the improvement or enhancement of normal responses of cognitive abilities of a healthy adult human, characterised in that:

(a) the responses are elicited by stimuli or events causing the activation of the P300 component in the healthy adult human's brain

(b) the improvement or enhancement is reflected in a shortening of the P300 latency or an increase of the P300 amplitude

9.3 It follows that the appellant's objection of lack of novelty does not prejudice the maintenance of the patent based on the set of claims of the main request.

10. Inventive step (Article 56 EPC)

Closest prior art

10.1 In accordance with the established case law of the boards, the closest prior art for assessing inventive step is a prior art conceived for the same purpose or aiming at the same objective as the claimed invention and having the most relevant technical features in common, i.e. requiring the minimum of structural and functional modifications.

10.2 In the decision under appeal, the opposition division identified document D22 as the closest prior art.

10.3 In the statement setting out the grounds of appeal, the appellant developed two lines of argument, one based on document D22 and the other on document D12 as the closest prior art.

Document D22

10.4 Document D22 describes a study assessing the cognitive behaviour of two groups of ten-month-old term infants by a means-end problem-solving test (see abstract). One group was fed an LCPUFA-supplemented formula comprising arachidonic acid from birth to age four months (see

abstract and table 1). The other group received a formula not supplemented with LCPUFA during the same time period. This study found that LCPUFA-treated infants have improved problem-solving ability compared to the no-LCPUFA formula fed group (see abstract).

10.5 To the appellant's advantage, the board will assume that this improvement constitutes an improvement of normal responses of cognitive abilities within the meaning of the current claims. Accordingly, the claimed subject-matter differs from document D22 solely in terms of the target group, i.e. healthy human adults instead of healthy human infants.

Document D12

10.6 The appellant submitted that the claimed sub-group of human adults constitutes the sole difference vis-à-vis document D12 (see point XVII. above in relation to inventive step).

10.7 The board does not concur with the appellant's position.

10.7.1 As explained in point (6)(c) of the respondent's reply to the statement setting out the grounds of appeal, the improvement of LTP disclosed in document D12 is not the same as improving or enhancing normal responses of cognitive abilities within the meaning of the claims. LTP is a small-scale phenomenon occurring at the level of the exchange of information in the neural cells. By contrast, event-related potentials such as P300 are measured as wave signals from the whole brain.

10.7.2 The board also agrees with the respondent that the passage on page 11 of document D12 relied on by the

appellant does not disclose the actual treatment of humans, let alone the treatment of this subject group to improve or enhance normal responses of cognitive abilities within the meaning of the claims. It merely states that further research needs to be done to establish whether such an approach (i.e. induction of LTP by arachidonic acid or one of the lipoxygenase metabolites) may lead to the development of nootropic drugs (see page 11, left-hand column, fourth full paragraph).

10.8 It follows that document D12 is more remote from the claimed invention than document D22. Document D22 thus represents the closest prior art. As set out in point 10.5 above, the claimed subject-matter differs from document D22 in terms of the target group, i.e. healthy human adults instead of healthy human infants.

Objective technical problem and solution

10.9 In view of the experimental results reported in examples 4 and 5 of the patent, the objective technical problem to be solved may be formulated as finding a further subject group in which arachidonic acid improves or enhances normal responses of cognitive abilities so as to shorten P300 latency or augment P300 amplitude of the event-related potentials of the brain (P300) as a response index of cognitive ability.

10.10 As a solution to this problem, the claimed invention proposes healthy adult humans.

Obviousness

10.11 As outlined in point 79 of the impugned decision, an infant's developing brain differs significantly from a

fully developed adult brain in terms of anatomy and cognitive function. With this knowledge in mind, the skilled person would not have expected the arachidonic acid-containing infant formula disclosed in document D22 to cause the same or similar cognitive effects in healthy human adults unless the prior art contained a clear indication to these effects in adults. However, the board is unable to identify any such teaching in the prior art relied on by the appellant in this regard, i.e. document D11a and document D14, page 1, lines 5 to 7, and page 2, lines 5 to 19.

10.12 In more detail, document D14 mentions on page 2, lines 5 to 19, that LCPUFA including arachidonic acid are precursors for eicosanoids and prostaglandins, the latter being known "*to influence blood clotting, inflammatory and anti-inflammatory responses, cholesterol absorption, bronchial function, hypertension, visual acuity and brain development in infants, and gastric secretions, among other effects*". This statement is thus in agreement with the teaching of document D22 in so far as the effects of LCPUFA in infants are concerned. However, none of the other effects reported in the aforementioned passage of document D14 relate to cognitive function or performance. Thus, contrary to the appellant's opinion, document D14 does not disclose that nutritional supplements with an effect on brain development in infants are equally suitable for adult nutrition. Accordingly, document D14 does not contain any pointer towards the claimed solution of the stated technical problem.

10.13 The same holds true for document D11a. This document reports on a study assessing the cognitive performance of 13-month-old rats in a Morris water maze assay (see

paragraphs [0015] to [0017]). The rats were fed different types of food from the age of four weeks. It was found that foods containing arachidonic acid cause reduced reaction latency (i.e. shorter times to swim to a platform in a pool) compared to foods not containing arachidonic acid or docosahexaenoic acid (see table 1, foods "E", "F" and "G" versus foods "A" to "C" and figure 1). As noted by the respondent, the latency referred to in document D11a is typically tens of seconds. By contrast, the latency of the P300 component following a stimulus is less than half a second. The board therefore accepts the respondent's argument that the rats disclosed in document D11a do not exhibit normal responses of cognitive abilities within the meaning of claim 1 (see the respondent's reply to the statement setting out the grounds of appeal, page 6, point(5)(d)). For this reason, the appellant's line of argument against inventive step based on document D22 taken in combination with document D11a cannot succeed either.

10.14 It follows that the appellant's objection of lack of inventive step pursuant to Article 56 EPC does not prejudice maintenance of the patent based on the set of claims of the main request.

Overall conclusion

11. The board finds that none of the grounds for opposition invoked by the appellant prejudice maintenance of the patent on the basis of the claims of the main request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of the following documents:

   - claims 1 to 24 of the main request filed as auxiliary request 2A with the letter of 15 September 2016

   - a description and drawings to be possibly adapted

The Registrar: The Chairman:

M. Schalow A. Lindner

Decision electronically authenticated