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Datasheet for the decision of 6 July 2018

Case Number: T 2335/12 - 3.3.08

Application Number: 04782286.1

Publication Number: 1664292

IPC: C12N9/64, C12N1/20, C12P21/02

Language of the proceedings: EN

Title of invention:
Animal product free media and processes for obtaining a botulinum toxin

Patent Proprietor:
Allergan, Inc.

Opponent:
Hörnchen, Ulrich, Dr.

Headword:
Hydrolysed soy-based medium for producing botulinum toxin/ ALLERGAN

Relevant legal provisions:
EPC Art. 56, 114(2), 123(2)
RPBA Art. 13(1)

Keyword:
Admissibility of late-filed experimental evidence - (no)
Inventive step: main request and auxiliary request 1 - (no)
Amendments: auxiliary requests 2 and 3 allowable - (no)

Decisions cited:

Catchword:

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Beschwerdekammern

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Case Number: T 2335/12 - 3.3.08

D E C I S I O N
of Technical Board of Appeal 3.3.08
of 6 July 2018

Appellant: (Patent Proprietor)	Allergan, Inc. 2525 Dupont Drive Irvine, CA 92612 (US)
Representative:	Garberg, Morten Hoffmann Eitle Patent- und Rechtsanwälte PartmbB Arabellastraße 30 81925 München (DE)
Respondent: (Opponent)	Hörnchen, Ulrich, Dr. Steinenkreuz 28 53773 Hennef (DE)
Representative:	von Uexküll, Alexa Weße, Michaela Vossius & Partner Patentanwälte Rechtsanwälte mbB Siebertstrasse 3 81675 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 5 September 2012 revoking European patent No. 1664292 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman B. Stolz
Members: M. Montrone
J. Geschwind

Summary of Facts and Submissions

I. An appeal was lodged by the patent proprietor (hereinafter appellant) against the decision of the opposition division to revoke European patent No. 1 664 292, entitled "*Animal product free media and processes for obtaining a botulinum toxin*".

II. The patent was opposed under Article 100(a) EPC on the grounds of lack of novelty and inventive step.

III. The opposition division held in the decision under appeal that the subject-matter of the main request and of auxiliary request 1 lacked an inventive step. Furthermore, it held that claims 1 and 4 of auxiliary requests 2 and 3 comprised added matter.

IV. The appellant submitted with its statement of grounds of appeal a main request and three auxiliary requests which all correspond to the respective claim requests dealt with in the decision under appeal.

Claim 1 of the main request reads:

"1. A method for obtaining a biologically active botulinum toxin, comprising the steps of:

(a) providing a fermentation medium that is free of an animal derived product, the fermentation medium comprising hydrolyzed soy;

(b) culturing a *Clostridium botulinum* bacterium in the fermentation medium under conditions which permit production of a botulinum toxin; and

(c) recovering a biologically active botulinum toxin from the fermentation medium."

Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that in step a) the features "a source of carbon, a salt, a phosphate-containing ingredient, a divalent cation and an amino acid" have been added.

Claim 1 of auxiliary request 2 differs from claim 1 of the main request in that in step a) the feature "in an amount of 10-100 g/L" has been added.

Claim 1 of auxiliary request 3 differs from claim 1 of the main request in that in step a) the features "in an amount of 10-100 g/L, a source of carbon, a salt, a phosphate-containing ingredient, a divalent cation and an amino acid" have been added.

V. In reply to the appellant's statement of grounds of appeal, the opponent (hereinafter respondent) maintained its objections raised during the first instance proceedings.

VI. The appellant, in a further submission, provided counter-arguments with regard to added matter and lack of inventive step. In yet a further submission, dated 29 July 2015, it provided experimental data in support of inventive step (document D32, see section X below).

VII. In reply, the respondent requested *inter alia* not to admit the experimental evidence disclosed in document D32 into the appeal proceedings due to its late filing and lack of *prima facie* relevance.

VIII. The parties were summoned to oral proceedings. In a communication pursuant to Article 15(1) RPBA, the parties were informed of the board's provisional, non-binding opinion on some of the legal and substantive matters of the case.

IX. Oral proceedings took place on 6 July 2018. At the end of the oral proceedings the chairman announced the board's decision.

X. The following documents are cited in this decision:

D1: H.D. Vera, Journal of Bacteriology, 1943, Vol. XLVII, pages 59-69;

D15: E.J. Schantz and E.A. Johnson, Microbiological Reviews, 1992, Vol. 56, pages 80-99;

D16: M.E. Whitmer and E.A. Johnson, Applied and Environmental Microbiology, 1988, Vol. 54, pages 753-759;

D16a: G. Drews, Mikrobiologisches Praktikum, Springer Verlag, Berlin, 1976, 3rd Edition, pages 1-3;

D23: Review of Medical Microbiology, Lange Medical Publications, 14th Edition, 1980, page 210;

D24: Annex "A", submitted by the opponent with letter dated 21 June 2012;

D25: E.A. Johnson and M. Bradshaw, Toxicon, 2001, Vol. 39, pages 1703-1722;

D32: Experimental Report, submitted by the appellant with letter dated 29 July 2015.

XI. The appellant's submissions, insofar as they are relevant to the present decision, may be summarised as follows:

Admission of evidence filed with letter dated 29 July 2015 (Articles 114(2) EPC and 13(1) RPBA)

The experimental evidence (document D32) could not have been filed with the statement of grounds of appeal since at that time the appellant was trying to contract a university laboratory to perform the experiments, but failed due to the considerable toxicity of the botulinum neurotoxin (BoNT) and respective safety requirements. Internal resources for carrying out the experiments were not readily available.

The evidence was filed about two years after filing the statement of grounds of appeal, which was still three years before the oral proceedings took place. Thus, it's late filing did neither delay the appeal proceedings nor cause any disadvantages for the respondent because it had ample time to analyse it.

Furthermore, the experimental evidence was *prima facie* relevant. The data demonstrated that the method according to claim 1 using fermentation media comprising hydrolysed soy resulted in increased yields of BoNT compared to methods using several other complex media, while avoiding the use of media comprising animal-derived products. The increase in BoNT yield was determined by an ELISA assay and not by the standard LD_{50} toxicity test performed in the prior art to avoid the sacrifice of mice. Although the ELISA assay could not discriminate between biologically active and inactive BoNT, the results disclosed in document D32

were an indication that by growing *Clostridium botulinum* (*C. botulinum)* on a medium comprising hydrolysed soy, the yield of BoNT was increased.

Article 56 EPC

Main request

Document D16 represented the closest prior art. The subject-matter of claim 1 differed therefrom in that a complex medium comprising hydrolysed soy was used for producing BoNT, instead of a defined minimal medium. This resulted in increased yields of BoNT. The technical problem to be solved was thus the provision of a method for the production of biologically active BoNT at increased yields. The claimed method solved this problem. The skilled person did not arrive at the claimed method in an obvious manner, since he or she had no reasonable expectation of success that hydrolysed soy solved the technical problem.

Reasons for this were that many complex media for growing *Clostridium* were available in the prior art. However, the skilled person had no pointer which of these media resulted in maximum growth of *C. botulinum*. Document D1, for example, disclosed in Tables I and II growth studies of different *Clostridium* strains on several complex media, which did not include *C. botulinum*. Although hydrolysed soy was reported as one of the best media for growing *Clostridium*, Table II disclosed that it was not a universal medium since not all of the tested strains showed a maximum growth rate. Thus, the skilled person was in a trial and error situation based on the data disclosed in document D1, since he or she could not predict on which of the different complex media *C. botulinum* grew best.

Moreover, although document D1 mentioned the growth of *C. botulinum* on agar plates comprising soy bean (see page 64, third paragraph), the tests were neither performed quantitatively nor was the soy bean hydrolysed.

Furthermore, document D1 was silent on the production of BoNT in *C. botulinum*, since it was limited to growth studies. Although there was a connection between the growth of the bacterium and the toxin production, the latter was not strictly linked to the former. Indications for this were derivable from document D25. This document disclosed data suggesting that the skilled person was at the relevant date aware of the fact that complex media had an impact on the production of BoNT (see page 1706, second column, last paragraph to page 1707, first column, first paragraph) and its release from the bacteria by an unknown mechanism (see page 1707, first column, third paragraph and page 1708, first column, second paragraph). Therefore, the skilled person required more information than mere growth data of *C. botulinum* to predict whether or not its growth on a particular medium increased the production of BoNT. This information was lacking from document D1 and the skilled person, without hindsight knowledge of the present invention, would not have selected hydrolysed soy from among the many available complex media to solve the underlying technical problem.

Furthermore, pointers to soy bean as a complex medium for *C. botulinum* to produce BoNT were neither derivable from the teaching of document D16a, since it was only one textbook, while other textbooks mentioned different media, nor from document D23, which was silent on the impact of the growth medium on the release of BoNT from the bacteria.

Article 123(2) EPC

Auxiliary requests 2 and 3

The concentration range "*10-100g/L*" of hydrolysed soy referred to in step (a) of claim 1 was unambiguously derivable from the passages on page 24, lines 26, 27 and from page 26, lines 26 to 28 of the application as filed. Although these passages disclosed the commercial product "*Hy-Soy*" and not hydrolysed soy in general, the skilled person based on his or her common general knowledge would have recognised that a functional or structural relationship did not exist between the source of hydrolysed soy and the concentration range. Thus, "*Hy-Soy*" was representative of hydrolysed soy in general. A further indication for this interpretation was derivable from page 24, lines 22 and 23, of the application as filed which disclosed that the "*Hy-Soy*" product was a preferred representative of a group of commercial sources and the apparent lack of reasons why the concentration range should apply to this product only.

XII. The respondent's submissions, insofar as they are relevant to the present decision, may be summarised as follows:

Admission of evidence filed with letter dated 29 July 2015 (Articles 114(2) EPC and 13(1) RPBA)

The experimental evidence disclosed in document D32 should not be admitted into the appeal proceedings, since it was late filed for unjustified reasons. Allergan was one of the biggest manufacturers of BoNT worldwide, so that there was neither a need to look for

an external laboratory to perform comparative tests nor were limited in-house capacities credible.

Furthermore, the evidence lacked *prima facie* relevance since the ELISA assay reported in document D32 did not distinguish between active and inactive BoNT, while the available prior art documents determined the amount of biologically active BoNT. The data were thus not comparable to those disclosed in the prior art. Furthermore, document D32 lacked essential technical information in particular with regard to the type of complex media used. Thus, the comparative tests disclosed therein were not reproducible. Moreover, the increase in BoNT yield based on growth on hydrolysed soy reported in document D32 was contradictory to the data submitted earlier by the appellant during the first instance proceedings (see document D24), which showed that there was no difference in the amount of biologically active BoNT produced by *C. botulinum* grown on different complex media. Thus, the data reported in document D32 suffered from an artefact that might be caused by lot to lot variations between media.

Article 56 EPC

Main request

Document D16 represented the closest prior art. The subject-matter of claim 1 differed therefrom in that a complex medium comprising hydrolysed soy was used for producing the BoNT. This resulted in the production of BoNT at increased yields. The technical problem to be solved was the provision of a method for the production of biologically active BoNT at an increased yield. The claimed method solved this problem.

The skilled person would have selected a complex medium based on hydrolysed soy in an obvious manner. Document D16 already reported that complex media compared to minimal media allowed the production of BoNT at increased yields. Starting from there, the skilled person would have avoided complex media comprising animal products to minimise the risk of animal-derived diseases. Thus, the skilled person would have turned to complex media comprising hydrolysed soy, since *C. botulinum* grew on this medium and it was suggested as the best vegetable medium for growing *Clostridia* (see document D1, page 64, second paragraph, page 65, second paragraph). Furthermore, a medium comprising hydrolysed soy was mentioned as the sole example of a plant-derived complex medium for growing bacteria in a microbiology textbook (see document D16a).

The skilled person had also a reasonable expectation of success that *C. botulinum* grown on complex medium containing hydrolysed soy would produce BoNT at increased yields, since the production of the toxin was linked to the growth of the bacterium from which it was released during autolysis (see document D23). It was irrelevant that the exact mechanism of the toxin's release was unknown at the relevant date of the patent in suit (see document D25), because the release *per se* was important for the production of BoNT irrespective of the mechanism involved.

Article 123(2) EPC

Auxiliary requests 2 and 3 - claims 1

The concentration range "*10-100g/L*" of hydrolysed soy referred to in step (a) of claim 1 had no basis in the application as filed, since the disclosure on page 24,

lines 26 and 27 and page 26, lines 26 to 28 referred to the specific commercial product "*Hy-Soy*" and not to hydrolysed soy in general. Thus, the amendments resulted in an inadmissible generalisation which contravened Article 123(2) EPC.

XIII. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request, or alternatively, on the basis of one of auxiliary requests 1 to 3, all filed with its statement of grounds of appeal. It further requested to admit document D32 into the appeal proceedings.

XIV. The respondent requested that the appeal be dismissed and that document D32 not be admitted into the appeal proceedings.

Reasons for the Decision

Admission of evidence filed with letter dated 29 July 2015 (Articles 114(2) EPC and 13(1) RPBA)

1. Document D32 was submitted with the appellant's letter dated 29 July 2015, i.e. more than two and a half years after the filing of it's statement of grounds of appeal. It is therefore late-filed and its admission is at the board's discretion (Articles 114(2) EPC and 13(1) RPBA). In this context, account may *inter alia* be taken of whether or not a convincing case has been made as to why the evidence could not have been filed earlier and why it is *prima facie* relevant.

2. Regarding the delay in submitting the evidence, the board is not persuaded by the appellant's arguments that it was caused by unsuccessful attempts to contract

a university laboratory to carry out comparative tests and by limited resources for performing the tests in-house, since Allergan Inc. is one of the largest manufacturers of BoNT and should have sufficient in-house capacities to perform a standard test for assessing the BoNT production of *Clostridium botulinum* (hereinafter "*C. botulinum*") grown on different commercially available fermentation media.

3. With regard to the comparative test disclosed in document D32, the board observes that the document is silent on the source, the composition and the concentration of the media "*Casein*", "*Martone L-1*", "*Pea Hydrolysate*", "*EH Wheat Protein*", "*Soy Peptone Type II*", "*EH Soy Protein (UF)*", "*EH Soy Protein*" and "*Vegitone*" mentioned in the table on page 3. This lack of information makes it impossible to compare the yields of BoNT produced by *C. botulinum* grown on the different media disclosed in document D32, or on the media disclosed in the prior art, since experiments carried out without this information are not reproducible. Furthermore, the non-soy based media "*Martone L-1*", "*Pea Hydrolysate*" and "*EH wheat Protein*" mentioned above are not disclosed in any of the prior art documents cited, excluding for this reason any comparison.

3.1 The appellant submitted some of the lacking information in a further letter dated 20 September 2017 (see page 4, second paragraph), i.e. more than two years after submitting the experimental evidence. Neither were reasons given by the appellant why this information was not submitted together with the experimental evidence disclosed in document D32, nor why it took more than two years to do so.

3.2 It was common ground between the parties that the fermentation media disclosed in document D32 are "complex", i.e. have an undefined composition. These media were all obtained from different commercial sources (see appellant's letter of 20 September 2017, page 4, second paragraph).

3.3 Concerning complex media, document D25 reports that for a consistent production of BoNT with high yields, the medium components have to be carefully controlled since even different lots of the "*same casein digests*" might influence toxin production and that in "*complex media it is often difficult to accurately assess the effects of specific nutrients on the expression of toxin or the pathways of nutrient utilization affecting toxin synthesis*" (see page 1707, column 2, second and third paragraphs).

3.4 Furthermore, the board notes that all of the available prior art documents disclose LD_{50} doses of the produced BoNT, i.e. the concentration of toxin that is lethal to 50% of the mice which defines the toxin's biological activity (see e.g. document D15, page 82, column 1, second paragraph, document D16, Table 7). The ELISA assay used in document D32 quantitates the amount of BoNT produced by detecting the heavy chain of the type A toxin in µg/ml (see point 2.4 and the table on page 3). This assay cannot distinguish between biologically active and inactive BoNT, since the neurotoxic activity of BoNT resides on the light chain and not on the heavy chain, a fact not disputed by the appellant. Therefore, document D32 cannot establish that the BoNT produced by *C. botulinum* cultured on different growth media is indeed biologically active, although this is a functional property explicitly referred to in claim 1.

4. Therefore, the observed increase in BoNT yield in document D32 can neither be unambiguously ascribed to the presence of hydrolysed soy in the media when compared to the other media nor provide any evidence that increased amounts of biologically active toxin have been produced.

5. Thus, the board concludes that the experimental evidence disclosed in document D32 has been filed late by the appellant for unjustified reasons and lacks *prima facie* relevance. Accordingly, the board decided that document D32 not be admitted into the appeal proceedings.

Main request

Article 56 EPC

Closest prior art

6. It was common ground between the parties that document D16 represents the closest prior art for the method according to claim 1.

7. Document D16 discloses a method for the cultivation of various strains of *C. botulinum* on different synthetic media of defined compositions, i.e. minimal media, for studying *inter alia* the regulation of BoNT production (see page 753, column 2, first paragraph, Tables 4 and 7). With regard to the yield of BoNT produced on minimal media, the document reports that "*These titers are ca. 5 to 50 times less than those usually obtained in complex toxin production media (Table 7). Other investigators have also observed low toxin titers in synthetic media*" (see page 757, column 2, last

paragraph to page 758, column 1, first paragraph, emphasis added).

8. It was further undisputed that the claimed method is distinguished from the method of the closest prior art in that the fermentation medium comprises hydrolysed soy, i.e. a protein source of undefined composition, and hence a complex medium, instead of a minimal medium. The parties further agreed that the technical effect associated with this difference is a higher yield of BoNT.

9. Accordingly, the technical problem to be solved is defined as the provision of a method for producing biologically active BoNT at increased yields.

10. It was further common ground between the parties that the method according to claim 1 solves this technical problem.

Obviousness

11. It remains to be assessed whether or not the skilled person starting from the minimal media disclosed in document D16 and faced with the technical problem identified above would have arrived at the method according to claim 1 in an obvious manner.

12. Document D16 describes that *C. botulinum* grown on "*synthetic*", i.e. minimal media, produces "*usually*" less BoNT than bacteria grown on "*complex toxin production media*" (see point 7 above). In other words, document D16 teaches that, if higher BoNT yields are desired, the skilled person should turn to complex media for growing *C. botulinum*. This was not disputed by the appellant.

13. Since the BoNT is to be administered to humans for therapeutic purposes, the skilled person, in order to minimise the risk of animal-derived diseases, would only take into consideration complex media free from animal-derived products, (see e.g. document D15, page 81, column 2, third paragraph). This was likewise not disputed by the appellant.

14. Thus, the skilled person would look for complex media free from animal products which have been successfully used for growing *C. botulinum*.

15. Document D1 discloses a comparative study to assess the suitability of various complex media for growing several strains of *Clostridia* (see title, abstract, page 59, second paragraph, to page 60, second paragraph, Tables I and II). The complex media mentioned are either based on materials from animal sources (see Table I), or enzymatic digests, i.e. hydrolysates, of nine vegetable materials (see table II: "*Coconut meal*", "*Corn meal*", "*Cotton seed*", "*Green grass*", "*Grass seed*", "*Peanut meal*", "*Soy bean meal*", "*Tomatoes*" and "*Distillers' yeast*").

16. Although quantitative growth studies with regard to *C. botulinum* were not carried out in document D1, the document reports that "*Streak cultures were made of the organisms used previously, and of C. botulinum, C. histolyticum, and C. sporogenes. All species grew well on soy bean, cotton seed, peanut, tomato, egg, blood and medo-peptone agars. Only those digests were used which scored well in the dilution tests*" (see page 64, second paragraph, emphasis added). The document further discloses in the "*Summary*" part that "*Soy bean meal, digested by either papain or pepsin, appeared to be the*

best vegetable source, while peanut and cotton seed meals were somewhat less good. The tomato peptones were excellent in their ability to promote growth, but were less satisfactory in respect of cost, availability, and, in case of the samples tried, their dark color" (see page 65, second paragraph, emphasis added).

17. The appellant argued that the skilled person in view of the disclosure in document D1 had no reasonable expectation of successfully increasing the yield of BoNT by growing *C. botulinum* on hydrolysed soy. In support of it's view, the appellant submitted that the skilled person would have derived from the afore mentioned passages that various vegetable media existed for growing *Clostridia*. However, there was no pointer to use hydrolysed soy, since the data in Table II of document D1 showed that not all media were equally suitable for cultivating *Clostridia*, or in other words, hydrolysed soy bean was not a universal complex medium suitable for growing all *Clostridia* strains including *C. botulinum.* The skilled person was thus faced with a trial and error situation. Furthermore, the document did not disclose quantitative growth studies of *C. botulinum* on soy media, let alone on hydrolysed soy.

17.1 The board is not convinced by these arguments. Firstly, document D1, as set out in point 16 above, discloses that *C. botulinum "grew well*" on agar comprising *inter alia* soy bean. The skilled person would derive from this statement that a semi-quantitative examination of the bacteria's ability to grow on different media including soy was carried out.

17.2 Secondly, although the second sentence in the passage cited in point 16 above mentions "*soy bean*", the skilled person would derive from the teaching of

document D1 as a whole, that in fact enzymatic digests, i.e. hydrolysates, of soy beans were used, since the document mentions exclusively protease digests thereof (see e.g. page 60, lines 3 to 6). This view finds support too in the subsequent sentence starting with "*Only those digests were used ...*" (see point 16 above).

17.3 Thirdly, the issue whether or not document D1 discloses hydrolysed soy beans as a universal source of nutrients for all *Clostridia* strains is irrelevant, since the document discloses that *C. botulinum* "*grew well*" on this medium. Thus, contrary to the appellant's view, the skilled person was not in a trial and error situation since document D1 established that *C. botulinum* grows on complex media comprising hydrolysed soy.

18. In a second line of argumentation, the appellant submitted that the growth of *C. botulinum* on complex media containing hydrolysed soy reported in document D1 did not mean that the bacteria produced BoNT at increased yields, since the two physiological reactions were not necessarily linked. In support, it referred to document D25, which disclosed that the growth medium had an impact on the production of the toxin in *C. botulinum,* including its release from the cells.

18.1 The board is not persuaded by these arguments of the appellant either. The skilled person knew from his or her common knowledge that the production of BoNT occurs "*during growth in C. botulinum and during autolysis of the bacteria, toxin is liberated into the environment*" (see for instance document D23, page 210, column 2, sixth paragraph). In other words, the growth

of *C. botulinum* and the production of BoNT are linked, since the toxin is produced in growing cells only.

18.2 Furthermore, as set out above in point 17.3, the growth of *C. botulinum* on complex media containing hydrolysed soy was an established fact, and the use of this medium was moreover suggested in document D1 to the skilled person as the "*best vegetable source*" (see point 16 above). Thus, the skilled person would select a complex medium comprising hydrolysed soy for cultivating *C. botulinum*. Moreover, the skilled person had a reasonable expectation that the bacteria produced BoNT at increased yields compared to minimal medium, since document D16 teaches that these yields are "*ca. 5 to 50 times less than those usually obtained in complex toxin production media*" (see point 7 above, emphasis added).

18.3 Although document D25 reports that "*supplementation of complex media with nutrients, such as meat digest, casein hydrolysates, corn steep liquor, calcium, glucose, individual amino acids, and other substances affected the synthesis of toxin in various serotypes and strains of C. botulinum*" (see page 1707, column 1, first paragraph), i.e. that nutritional factors have an impact on BoNT production, this statement does not mean that the skilled person would have expected the addition of hydrolysed soy to have a negative effect on the production of BoNT, in particular, since soy is not even mentioned in document D25. In this context, the board notes that none of the available prior art documents suggests that the presence of hydrolysed soy in complex media may have a negative effect on the production of BoNT in *C. botulinum*. This has also not been argued by the appellant.

18.4 It is established case law that with regard to a reasonable expectation of success, the decisive issue is not whether or not the skilled person could predict with certainty the success of an envisaged solution, here that the amount of BoNT produced in bacteria growing on media comprising hydrolysed soy exceeds the yield on minimal medium, but rather that the skilled person would have followed the teaching of the prior art with the expectation of some improvement or advantage (see Case Law of the Boards of Appeal, 8th edition 2016, I.D.7.1).

19. In view of the considerations above, the board concludes that the selection of hydrolysed soy for growing *C. botulinum* to achieve an increased BoNT yield compared to growth on minimal medium was obvious for the skilled person. Thus, the subject-matter of claim 1, and consequently the main request, does not meet the requirements of Article 56 EPC.

Auxiliary request 1

Article 56 EPC

20. Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that in step a) the features "a source of carbon, a salt, a phosphate-containing ingredient, a divalent cation and an amino acid" have been added.

21. The appellant has not provided any arguments why the opposition division's finding that auxiliary request 1 lacked an inventive step was wrong.

22. In the absence of any such arguments, and since the added features, i.e. a carbon source, a salt, a phosphate-containing ingredient, a divalent cation and an amino acid are all standard components of bacterial growth media (see e.g. document D1, page 59, third paragraph and document D16, Table 4) which do not render the claimed subject matter inventive, the board has no reason to deviate from the decision under appeal. Accordingly, auxiliary request 1 does not meet the requirements of Article 56 EPC.

Auxiliary request 2

Article 123(2) EPC

23. Step (a) in claim 1 recites the concentration range "*10-100g/L*" for hydrolysed soy in fermentation medium.

24. The appellant referred to page 24, lines 26 to 27 in conjunction with page 26, lines 26 to 28 as a basis for the amendment. Moreover, it argued that the skilled person would recognise, based on his or her common general knowledge, that there was no functional or structural relationship between the particular source of hydrolysed soy and the reported concentration range in the application as filed. Accordingly, the concentration range "*10-100g/L*" was representative of hydrolysed soy in general.

25. The board is not convinced by these arguments. The application as filed reads on page 24, line 16 to 24 as follows: "*Any source of soy-based products may be used in accordance with the present invention. Preferably, the soy is hydrolyzed soy. Sources of hydrolyzed soy are available from a variety of commercial vendors.*

These include but are not limited to Hy-Soy (Quest International), Soy peptone (Gibco) Bac-soytone (Difco), AMISOY (Quest), NZ soy (Quest), NZ soy BL4, NZ soy BL7, SE50M (DMV International Nutritionals, Fraser, N. Y.), and SE50MK (DMV). Most preferably, the source of hydrolyzed soy is Hy-Soy or SE50MK" (emphasis added). Thus, the application as filed discloses that "*Hy-Soy*" and "*SE50MK*" are the most preferred hydrolysed soy products in a group of nine products. In the board's view, the skilled person would derive from this passage that all of the disclosed commercial soy products have different compositions making two of them particularly suitable for the method of claim 1, since otherwise there would be no need to particularly highlight "*Hy-Soy*" and "*SE50MK*" in this group. In other words "*Hy-Soy*" and "*SE50MK*" are particularly suitable for growing *C. botulinum*.

26. In view of the above, the skilled person would derive from the passage "*The concentration of Hy-Soy in the fermentation medium for production of botulinum toxin preferably ranges between approximately 10-100 g/L*" in the application as filed (see page 26, lines 26 to 28), that the concentration range "*10-100g/L*" is specific for the "*Hy-Soy*" product and cannot be generalised to all of the other disclosed commercial hydrolysed soy products, let alone to any type of hydrolysed soy as referred to in claim 1.

27. Thus, claim 1 comprises subject-matter extending beyond the content of the application as filed, contrary to the requirements of Article 123(2) EPC.

Auxiliary request 3 - claim 1

Article 123(2) EPC

28. Step (a) in claim 1 of auxiliary request 3 recites the identical concentration range of "*10-100g/L*" for hydrolysed soy in the fermentation medium as claim 1 of auxiliary request 2.

29. Therefore the arguments set out above with regard to claim 1 of auxiliary request 2 equally apply to claim 1 of auxiliary request 3 which therefore contravenes Article 123(2) EPC either.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

L. Malécot-Grob B. Stolz

Decision electronically authenticated