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# Datasheet for the decision of 16 January 2025

**Case Number:** T 2015/23 - 3.3.08

**Application Number:** 16896958.2

**Publication Number:** 3438274

**IPC:** C12Q1/04, G01N27/62, G01N33/68, G01N33/569

**Language of the proceedings:** EN

**Title of invention:**
MICROORGANISM IDENTIFICATION METHOD

**Patent Proprietor:**
Shimadzu Corporation
Meijo University

**Opponent:**
bioMérieux

**Headword:**
Identification method/SHIMADZU CORP.

**Relevant legal provisions:**
EPC Art. 100(b), 83, 123(2)
RPBA 2020 Art. 13(2)

**Keyword:**
Sufficiency of disclosure - main request (no) - auxiliary requests 1 to 4 (no)
Amendments auxiliary requests 5 to 8 - added subject-matter (yes)
Auxiliary request 9 - admission into the appeal proceedings (no);

**Decisions cited:**
T 2001/12, T 0206/13, T 0521/12, T 2773/18

**Catchword:**

Europäisches Patentamt
European Patent Office
Office européen des brevets

**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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**Case Number: T 2015/23 - 3.3.08**

# D E C I S I O N
# of Technical Board of Appeal 3.3.08
# of 16 January 2025

| | |
|---|---|
| **Appellant:** (Opponent) | bioMérieux<br>69280 Marcy-l'Étoile (FR) |
| **Representative:** | Wall, Leythem<br>Oxon IP B.V.<br>Evert Van De Beekstraat 354<br>1118 CZ Schiphol (NL) |
| **Respondent:** (Patent Proprietor 1) | Shimadzu Corporation<br>1, Nishinokyo-Kuwabaracho,<br>Nakagyo-ku<br>Kyoto-shi, Kyoto 604-8511 (JP) |
| **Respondent:** (Patent Proprietor 2) | Meijo University<br>1-501, Shiogamaguchi<br>Tempaku-ku<br>Nagoya-shi, Aichi 468-8502 (JP) |
| **Representative:** | Schepers, Andreas<br>Knall, Robert<br>Müller-Boré & Partner<br>Patentanwälte PartG mbB<br>Friedenheimer Brücke 21<br>80639 München (DE) |
| **Decision under appeal:** | **Decision of the Opposition Division of the European Patent Office posted on 26 October 2023 rejecting the opposition filed against European patent No. 3438274 pursuant to Article 101(2) EPC** |

**Composition of the Board:**

| | |
|---|---|
| **Chairwoman** | T. Sommerfeld |
| **Members:** | D. Pilat |
| | L. Bühler |

## Summary of Facts and Submissions

I. European patent No. 3 438 274 is based on European patent application No. 16 896 958.2, originally filed as international patent application published as WO 2017/168741. The patent was opposed on the grounds of Article 100(a) EPC in conjunction with Articles 54 and 56 EPC, and of Article 100(b) and (c) EPC.

II. The opponent (appellant) lodged an appeal against the decision of the opposition division rejecting the opposition.

III. With its reply to the statement of grounds of appeal, the patent proprietor (respondent) requested that the appeal be dismissed (main request) or, alternatively, that the patent be maintained on the basis of the claims of one of auxiliary requests 1 to 8, filed with the reply and corresponding to those filed at first instance with the submission dated 5 April 2022.

IV. In a communication under Article 15(1) RPBA, the parties were informed of the board's provisional opinion on the issues of the case. Both parties replied to the board's communication.

V. At the oral proceedings before the board, the respondent filed a new claim set as auxiliary request 9.

VI. Claim 1 as granted (claim 1 of the main request) reads as follows:

"1. A microorganism identification method comprising steps of:

a) obtaining a mass spectrum through mass spectrometry of a sample including microorganisms;
b) reading, from the mass spectrum, a mass-to-charge ratio m/z of a peak associated with a marker protein; and
c) identifying which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample based on the mass-to-charge ratio m/z, wherein

the marker protein is at least one of the ribosomal proteins, L23, S14, L36, S11 (Me), and L32."

Claims 1 of **auxiliary request 1** differs from claim 1 of the main request in that S11 (Me) was deleted.

Claim 1 of **auxiliary requests 2 and 3** is identical to claim 1 of the main request.

Claim 1 of **auxiliary request 4** differs from claim 1 of the main request in that the bacterial species of the genus *Campylobacter* is further defined as being any one of five species, *Campylobacter Jejuni subsp. Jejuni*, *Campylobacter Jejuni subsp. doylei*, *Campylobacter coli*, *Campylobacter fetus*, and *Campylobacter lari*.

Claim 6 of **auxiliary request 5** reads:

"6. A computer program comprising instructions which, when the program is executed by a computer, cause the computer to carry out steps of:
reading, from a mass spectrum obtainable through mass spectrometry of a sample including microorganisms, a mass-to-charge ratio m/z of a peak associated with a marker protein; and

identifying which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample based on the mass-to-charge ratio m/z, wherein the marker protein is at least one of the ribosomal proteins, L23, S14, L36, S11 (Me), and L32; and wherein:

i) the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni* subsp. *jejuni*, and the marker protein includes at least L24, any one of L32, L23, S14, and L7/L12, and L23; OR

(ii) the bacterial species of the genus *Campylobacter* is *Campylobacter Coli*, and the marker protein includes at least any one selected from L32, S14, and a group consisting of L23 and L24; OR

(iii) the bacterial species of the genus *Campylobacter* is *Campylobacter fetus*, and the marker protein is at least one of L23, S14, L36, L32, and S11; OR

(iv) the bacterial species of the genus *Campylobacter* is *Campylobacter lari*, and the marker protein includes at least one of L23, S14, and L32; OR

(v) when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni*, it is identified as having serotype R, and the marker protein includes at least L23; OR

(vi) when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni*, it is identified as having serotype A, and the marker protein includes at least L23 or L32 and L7/L12; OR

(vii) when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni*, it is identified as having serotype B, and the marker protein includes at least L7/L12; OR

(viii) when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni*, it is identified

as having serotype U, and the marker protein includes at least L7/L12; OR

(ix) when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni*, it is identified as having serotype D, and the marker protein includes at least L32 and L23 or L32 and L24; OR

(x) when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni*, it is identified as having serotype DF complex, and the marker protein includes at least L32; OR

(xi) wherein cluster analysis using, as indicator, at least mass-to-charge ratios m/z associated with L24, S14, and S11 is employed to determine which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample; OR

(xii) wherein the serotype when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni* is determined by employing cluster analysis using, as indicator, at least mass-to-charge ratios m/z associated with L32, L7/L12, L23, and S11 or L32, L7/L12, L24, and Sll."

Claim 8 of **auxiliary request 6** differs from claim 6 of auxiliary request 5 in that items (i) to (xii) have been replaced by the following four items:

(i) at least mass to charge ratios m/z associated with L24, S14 and S11 are employed to determine which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample; OR

(ii) at least mass to charge ratios m/z associated with L24, S14 and L36 are employed to determine which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample; OR

(iii) at least mass to charge ratios m/z associated with L32, L7/L12, L23 and S11 are employed to determine

which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample; OR

(iv) at least mass to charge ratios m/z associated with L32, L7/L12, L24 and S11 are employed to determine which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample."

Claim 6 of **auxiliary request 7** differs from claim 6 of auxiliary request 5 in that items (i) to (xii) have been replaced by the following three items:

(i) cluster analysis using, as indicator, at least mass-to-charge ratios m/z associated with L24, S14, and S11 is employed to determine which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample; OR

(ii) the serotype when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni* is determined by employing cluster analysis using, as indicator, at least mass-to-charge ratios m/z associated with L32, L7/L12, L23 and S11; OR

(iii) the serotype when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni* is determined by employing cluster analysis using, as indicator, at least mass-to-charge ratios m/z associated with L32, L7/L12, L24, and S11."

Claim 4 of **auxiliary request 8** reads:

"4. A computer program comprising instructions which, when the program is executed by a computer, cause the computer to carry out steps of:

reading, from a mass spectrum obtainable through mass spectrometry of a sample including microorganisms, a mass-to-charge ratio m/z of a peak associated with a marker protein; and

identifying which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample based on the mass-to-charge ratio m/z, wherein

the marker protein is at least one of the ribosomal proteins, L23, S14, L36, S11 (Me), and L32; and wherein the bacterial species of the genus *Campylobacter* is any one of five species, *Campylobacter Jejuni subsp. Jejuni*, *Campylobacter Jejuni subsp. doylei*, *Campylobacter coli*, *Campylobacter fetus*, and *Campylobacter lari*; and wherein

the serotype when the bacterial species of the genus *Campylobacter* is *Campylobacter jejuni* is determined by employing cluster analysis using, as indicator, at least mass-to-charge ratios m/z associated with L32, L7/L12, L23, and S11 or L32, L7/L12, L24, and S11."

**Auxiliary request 9** differs from **auxiliary request 8** in that claim 4 has been deleted.

VII. The parties' submissions relevant to the decision are discussed in the reasons for the decision below.

VIII. The appellant requested that the decision under appeal be set aside and the patent be revoked. It moreover requested that auxiliary request 9 not be admitted into the proceedings.

IX. The respondent requested that the appeal be dismissed and the patent maintained as granted (main request), or, alternatively, that the patent be maintained on the basis of the claims of one of auxiliary requests 1 to 9, wherein auxiliary requests 1 to 8 were filed with the reply to the appeal and auxiliary request 9 was filed at oral proceedings.

## Reasons for the Decision

*Main request*
*Sufficiency of disclosure - Article 100(b) EPC*

1. Claim 1 of the main request is directed to a microorganism identification method comprising steps a) to c), the latter consisting of identifying which bacterial species of the genus *Campylobacter* are included in the microorganisms in a sample based on the mass-to-charge ratio m/z of a mass spectrum peak associated with a marker protein, wherein the marker protein is at least one of the ribosomal proteins, L23, S14, L36, S11 (Me), and L32 (for the full wording of the claim, see section VI above).

2. For the claimed subject-matter to be sufficiently disclosed, the method as claimed must make it possible to identify which bacterial species (if any of them) of the genus *Campylobacter* are included in the microorganisms in the sample, taking into account the knowledge of the application as filed, supplemented, if necessary, with common general knowledge relevant at the effective date.

3. In the decision under appeal, it was held that although some of the m/z ratios associated with L23, L24 or L36 proteins are identical for two or more different *Campylobacter* species, the detection of a m/z ratio indicative of any (of) two species could still be useful for detection. A perfect correspondence between one m/z ratio to one, and only one, *Campylobacter* species in the claim was not required. The presence of non-working embodiments within the scope of a claim did not necessarily constitute a lack of disclosure, if the skilled person was able to work around them without

undue burden of experimentation or inventive skill (decision under appeal, point 3.2).

4. Although the board agrees with the decision under appeal and the respondent that the method of claim 1 does not require a 1:1 correspondence between a particular marker protein and a particular *Campylobacter* species, the measured m/z value (e.g. present/absent or shift in value) for at least one marker protein between at least two different *Campylobacter* species, must, however, allow for the identification of the bacterial species of the genus *Campylobacter* contained in the microorganisms in the sample, not only by using a combination of these marker proteins but also by using one single marker protein mentioned in claim 1 (Figures 7A and B).

5. Even if the skilled person would understand and would be able to determine from the assignment numbers in Figures 7A and B of the patent whether a single marker protein alone or a combination of marker proteins is capable of identifying a *Campylobacter* species in a sample, the board observes that the method step c) of claim 1 also covers the use of a single marker protein selected from L23, S14, L36, S11 (Me), and L32, e.g. L36, the measured m/z value of which is indistinguishable between at least two claimed species of the genus *Campylobacter* (e.g. Figures 7C to 15C). However, neither the teaching in the patent regarding the individual features of claim 1 nor the extensive working examples and experimental protocols described in the patent offer any guidance to the skilled person, when the measured m/z values of claimed marker proteins for different claimed species of the genus *Campylobacter* are not distinguishable from one another.

6. Since the m/z ratios associated with the L23, L24 or L36 marker proteins are identical for two or more different *Campylobacter* species, as shown in Figure 7A and 7B of the patent, it is not possible, although explicitly claimed and covered by claim 1, to use only one of these ribosomal marker proteins - i.e. at least one - to identify and distinguish at least two such *Campylobacter* species, as defined in claim 2, let alone whether the sample contains two *Campylobacter* species or only one of them and, if so, which one of the two. Consequently, as some of the *Campylobacter* species, if present in the sample, cannot be identified by using the m/z ratios associated with at least one of claimed ribosomal proteins marker, there are serious doubts substantiated by verifiable facts, provided in Figures 7A and 7B of the patent, that the method according to claim 1 can be carried out over the whole range.

7. By way of example, even if *Campylobacter fetus* can be distinguished from all the other recited species when using L36 as marker protein, the species *Campylobacter jejuni*, *Campylobacter coli* and *Campylobacter lari*, sharing the same m/z ratio value for the marker protein L36, cannot be distinguished and identified in a sample if the method according to claim 1 is carried out using only this ribosomal marker protein (Figures 7A-B and Figure 10). The assignment number 1 (m/z value 4365.40) for the marker protein L36 is identical for all these *Campylobacter* species. Thus this marker alone is not suitable for identifying whether all or any one of *Campylobacter jejuni*, *Campylobacter coli* and *Campylobacter lari* are present in the sample, as defined in claim 2 and, if so, in what combination.

8. The respondent essentially argued that the claim merely required that the presence of a species of

*Campylobacter* could be detected, but did not require the identification of each possible *Campylobacter* species, which amounted to more than 40. The invention focussed on relevant *Campylobacter* species, namely those that were food contaminants (patent, paragraphs 2 and 4 to 6), while other species were not even mentioned in the patent. The skilled person would clearly understand that identification of all *Campylobacter* species was not encompassed, as was anyway usual for diagnostic methods in the art. The invention aimed at identifying the presence of any of the relevant *Campylobacter* species only, and the skilled person would know that these would be those bacteria for which the mass-to-charge ratios m/z are given in the patent. If a more specific discrimination was required, the skilled person would learn from the teaching of the patent that it would just have to use more of the markers of the list. A more specific discrimination was however not required by the claim, which was directed to identification of species (in plural, not in singular) of *Campylobacter*.

9. The board does not find the respondent's arguments convincing for the following reasons.

9.1 Step c) of the method of claim 1 consisting of identifying which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample is kept generic with regard to the *Campylobacter* species and does not include a restriction to one or more bacterial species of the genus *Campylobacter*; hence it must legitimately ensure the identification of all *Campylobacter* species without restriction. There is no reason to limit it to only a set of *Campylobacter* species or selected members thereof. Although the description focuses on certain *Campylobacter* species

that are relevant as pathogens for humans and/or livestock, this restriction is not part of claim 1. Likewise, the board sees no reason why, even considering what would be implicit to the skilled person, i.e. directly derivable from what is explicitly disclosed, the wording of step c) should limit the identification of species of *Campylobacter* to those species, or groups thereof, which are associated with particular m/z ratios of particular peaks of particular marker proteins detected in steps (a) and (b), and which are effectively identifiable in step (c) by the specific marker proteins recited in claim 1, excluding embodiments which cannot be realized. The plain reading of the method of claim 1 cannot explain and/or support a self-limitation of the method of claim 1 to species of *Campylobacter* only identifiable by the specific marker proteins of claim 1.

9.2 While the board agrees that the claimed method may identify more than one species of *Campylobacter* (plural, not singular), this does not mean that it is enough to detect the presence of bacteria of the *Campylobacter* genus without identifying their species (singular or plural): this would be contrary to the wording of the claim. Finally, respondent's argument that the skilled person could and would have used at least one additional marker protein to identify whether and which combination of *Campylobacter* species was actually present in the sample is not persuasive because it in fact confirms that the claimed method cannot be carried out over the entire scope of the claim, which includes the use of only one marker.

10. Respondent's arguments based on decisions T 2001/12, T 206/13, T 521/12 and T 2773/18 are not convincing either.

10.1 In decision T 2001/12, the board held that an objection under Article 83 EPC cannot be based on an argument that the application would not enable a skilled person to achieve a non-claimed technical effect (reasons, points 3.1 and 3.4). Decision T 206/13 confirmed the principles applied in decision T 2001/12 and ruled that technical aspects which are not defined in the claims shall not be taken into account when assessing the invention under Article 83 EPC (reasons, point 3.4).

10.2 As discussed above, step c) is a mandatory step of the method of claim 1 which the skilled person must be able to carry out in respect of all embodiments of the method encompassed by the generic wording used in the claim. There is no reason to limit the applicability of this step, either explicitly or implicitly, to a set of *Campylobacter* species or selected members thereof. This method step cannot be seen as a non-claimed technical effect as discussed in decisions T 2001/12 and T 206/13. Hence, for this reason alone, these decisions are not applicable to the case at hand.

10.3 In decision T 521/12 it was held that the skilled person wishing to implement the claimed invention would exclude an interpretation of the feature "electronic information" as meaningless and not consistent with the teaching which was irrelevant to, or unsuitable for the claimed method of simulation of an operational system. This reading of the independent claims imposed limitations as to the "electronic information" which enabled the skilled person to carry out the claimed simulation method (reasons, point 9). In the present

case, there is no reason why the skilled person should interpret the generic step c) of the method of claim 1, which is clear and unambiguous, as having an intrinsic limitation and to limit its scope to a set or members of *Campylobacter* species which can actually be identified. Decision T 521/12 is therefore not applicable to the case at hand. In any case, Article 83 EPC requires that the claimed invention be disclosed in such a way and not only interpreted to the effect that it can be carried out.

10.4 Similar to decision T 521/12, in decision T 2773/18, a claimed invention was decided to be sufficiently disclosed, if the skilled person who had to interpret an ambiguous expression on the basis of the entire disclosure could infer what will and what will not work, even if a broad construction could also encompass what doesn't work (reasons 3.2). Again, there is no good reason why step c) of the present method of claim 1, which requires identifying *Campylobacter* species in a sample using the m/z ratio of a peak associated with the marker protein defined in claim 1, should be interpreted narrowly instead of being restricted by suitable features. The skilled person is faced with explicitly claimed embodiments (e.g. those of claim 2) that do not work. The decision T 2773/18 is therefore not applicable to the case at hand.

11. The board considers therefore that, in view of the findings above, the ground of opposition under Article 100(b) EPC prejudices the maintenance of the patent as granted.

*Auxiliary requests 1 to 3*
*Sufficiency of disclosure - Article 83 EPC*

12. Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that the protein marker S11 (Me) has been deleted from the list of markers, while claim 1 of auxiliary requests 2 and 3 is identical to claim 1 of the main request.

13. The amendment introduced to claim 1 in auxiliary request 1 was intended to address objections under Article 100(c) EPC (reply to appeal, items 7.1, including table, and 7.1.1) and the respondent has not provided any arguments as to how this amendment would overcome the objection of insufficiency of disclosure. The board considers that claim 1 of auxiliary request 1 lacks sufficiency of disclosure because the claimed method still encompasses embodiments which are not enabled based on the reasons set out above for the main request.

14. Hence, for the same reasons as discussed above for the main request, auxiliary requests 1 to 3 also contravene Article 83 EPC.

*Auxiliary request 4*
*Sufficiency of disclosure - Article 83 EPC*

15. Claim 1 of auxiliary request 4 combines the method of granted claims 1 and 2, thereby limiting the bacterial species of the genus *Campylobacter* to be identified to any one of the five species *Campylobacter jejuni subsp. jejuni*, *Campylobacter jejuni subsp. doylei*, *Campylobacter coli*, *Campylobacter fetus* and *Campylobacter lari*.

16. The respondent essentially argued that the introduced amendment limiting the *Campylobacter* to only the recited five species meant that the claim no longer

required that the method allowed identification of each and every *Campylobacter* species. Figures 7A and B of the patent demonstrated that each of these five species could be identified, at least at species level if not at subspecies level, by using the m/z ratios of the peaks associated with the claimed markers. In case further differentiation was desired (namely subspecies, serotype), the skilled person could find suitable markers without undue burden, just following the teaching of the patent. The claim required the use of "at least one" marker protein, meaning that also more than one marker was envisaged; it did not single out one m/z value. On the other hand, L32 used as single marker allowed to distinguish all five species.

17. As discussed above for the main request, the board considers that identification of these five species of *Campylobacter* using the claimed method is not enabled. For example, the m/z ratio of a peak associated with the marker protein L23 in Figures 6, 7A and 7B does not allow the identification of the presence of *Campylobacter jejuni,* including *Campylobacter jejuni subspecies doylei,* and *Campylobacter coli* at the level of species in a sample, as the measured m/z value for this marker protein is identical for both species in Figures 7A and 7B (assignment number 3). For this reason, when using L23, it cannot be identified whether both or only *Campylobacter jejuni,* including *Campylobacter jejuni subspecies doylei,* or *Campylobacter coli* are present in the sample, and if so, which one.

18. Although the skilled person has no problem, when starting with the measured m/z value for the marker protein L36, to select a further suitable marker protein among all the ribosomal proteins claimed so as

to be capable of identifying which bacterial species of the genus *Campylobacter* are included in the microorganisms in the sample based on the mass-to-charge ratio m/z. For example, if L36 in Figure 7A has an assignment number of 1, then combinations of marker proteins L36 + S14 (assignment number 1) or L36 + S32 (assignment number 3) will be required to identify and confirm the presence of *C. jejuni*. This argument is not relevant because the method of claim 1 extends also to the use of only one ribosomal proteins, L23, S14, L36, S11 (Me), and L32 to identify the presence of at least *Campylobacter jejuni, Campylobacter coli and Campylobacter lari* in a sample. Therefore, the marker protein L36 shown in Figures 7A and 7B does not allow the identification of whether and which of the bacteria *Campylobacter jejuni, Campylobacter coli and Campylobacter lari* are present in the sample. Similarly, although the skilled person will recognise that the L32 marker protein is capable of identifying which of the claimed Campylobacter species is/are present in the sample due to its six different assignment numbers with regard to the Campylobacter species (Figures 7A and 7B of the patent), claim 1 is by no means limited to this marker protein. Claim 1 still encompasses the measured m/z value for the marker protein L36 alone. However, the use of this protein alone is not suitable for identifying which claimed bacterial species of the genus Campylobacter are present among the microorganisms in the sample on the basis of the mass-to-charge ratio m/z, as discussed above. It follows that the claimed invention is not disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

19. The subject-matter of claim 1 of auxiliary request 4 is thus not sufficiently disclosed in the sense of Article 83 EPC.

*Auxiliary requests 5 to 8*
*Amendments - Article 123 (2) EPC*

20. The term "application as filed/claims as filed" used in the following refers to the translated patent application documents submitted on 26 October 2018.

21. With the reply to the appeal, the respondent indicated that claim 6 of auxiliary request 5 corresponded to granted claim 19 (based on claims 21 and 1 as filed), to which an analogous amendment as in claim 1 had been introduced, namely the inclusion of the subject-matter of granted claims 3 to 13 as a set of alternatives (reply, table on page 71 and section 7.1.5). At oral proceedings, the respondent further referred to paragraphs [0041] and [0042] of the application as filed and argued that, in agreement with the appealed decision (point 2.4, in the context of claim 19 of the main request), step (a) referred to in claim 1 as filed was captured by the clause "obtainable through mass spectrometry of a sample including microorganisms" in step b) of claim 6 of auxiliary request 5.

22. Essentially for the reasons submitted by the appellant, the board disagrees with the respondent's argument that amended claim 6 finds a basis in the application as filed. Amended claim 6 relates to a computer program comprising instructions which, when the program is executed by a computer, cause the computer to carry out steps of reading and identifying, from a mass spectrum obtainable through mass spectrometry of a sample

including microorganisms, a mass-to-charge ratio m/z of a peak associated with a marker protein. The clause "obtainable by mass spectrometry of a sample containing microorganisms", does not necessarily require the computer program to include instructions which, when the program is executed by a computer, also oblige the computer to carry out the step of obtaining a mass spectrum through mass spectrometry of a sample including microorganisms, as required by claim 21 as filed, referring back to claim 1 as filed. The mass spectrum to be read can also be obtained independently.

23. While the board agrees with the respondent that a computer program cannot, on its own, generate a mass spectrum, it nevertheless considers that it can support the obtention of a mass spectrum through mass spectrometry. Given that claim 21 as filed requires the program to execute all the steps of claim 1 as filed, including step a) of obtaining a mass spectrum through mass spectrometry of a sample, the computer program in claim 21 as filed must include instructions which, when the program is executed by a computer, cause the computer to carry out step a) of claim 1 as filed. Paragraphs [0041] and [0042], cited by the respondent as further basis, describe Figure 1 which depicts the microorganism identification system; and as can be read in paragraph [0041], line 23, this system includes a "spectrum generating program", which supports the above interpretation that such a computer program will include instructions which, when the program is executed by a computer, cause the computer to carry out step a). Moreover, paragraphs [0041] and [0042] cannot provide basis for the subject-matter of claim 6, since they disclose specific embodiments with features that are not included in claim 6.

24. There is thus no direct and unambiguous disclosure, including information which is implicit in the patent application, for a computer program comprising instructions which, when the program is executed by a computer, cause the computer to carry out only steps of reading and identifying, but omit the execution of step a) of the method of original claim 1. Thus, at least for this reason, the subject-matter of claim 6 of auxiliary request 5 extends beyond the content of the application as filed, contrary to the requirements of Article 123(2) EPC.

25. For the same reasons, the objection of added subject-matter under Article 123(2) EPC raised against claim 6 of auxiliary request 5 also applies to claims 8, 6 and 4 of auxiliary requests 6, 7 and 8, respectively, as they are all directed to a computer program, wherein step a) of the method of claim 1 as filed is omitted. The board concludes that auxiliary requests 6 to 8 contravene Article 123(2) EPC.

*Auxiliary request 9*
*Admittance (Article 13(2) RPBA)*

26. Auxiliary request 9 was filed by the respondent during the oral proceedings before the board. Its admission is thus governed by Article 13(2) RPBA, according to which any amendment to a party's appeal case made after notification of a summons to oral proceedings shall, in principle, not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.

27. The claim set of auxiliary request 9 differs from the claims of auxiliary request 8 in that claim 4 has been deleted. The respondent submitted that this auxiliary

request was a reasonable attempt to overcome the objection raised under Article 123(2) EPC and that it was filed in reaction to the surprising position of the board on Articles 83 and 123(2) EPC.

28. For the reasons submitted by the appellant, the board is not convinced that there were exceptional circumstances justified with cogent reasons by the respondent for submitting this request at such a late stage of the appeal proceedings. That the board came to a conclusion that was different from the one of the opposition division cannot be considered a surprise, but rather is one of the possible outcomes of an appeal.

29. As argued by the appellant, the fact that the respondent has indicated, in its reply to the grounds of appeal, that it intended to combine auxiliary requests if needed, is not sufficient for compliance with the requirements of Article 12(3) RPBA. Admission of any request filed later is to be considered under the provisions of Article 13 RPBA.

30. Moreover, even if auxiliary request 9 successfully overcame one of the added-matter objections against claim 6 of auxiliary request 5, there were still other added-matter objections to be discussed (not only against claim 4 but also against claim 1) and, most importantly, the request did not *prima facie* overcome the objection for lack of sufficiency of disclosure which had been discussed for claim 1 of the main request and auxiliary requests 1 to 4. In fact, already in the preliminary opinion of the board pursuant to Article 15(1) RPBA (point 16.), the board had indicated that claim 1 of auxiliary request 8 did not fulfil the requirements of Article 83 EPC. Likewise, after

discussing sufficiency of disclosure of claim 1 of the main request at oral proceedings, the board had already given its preliminary opinion that the same applied to claim 1 of auxiliary requests 1 to 4 and 8. Claim 1 of auxiliary request 9 being identical to claim 1 of auxiliary request 8, this preliminary opinion of the board still applied, meaning that this late-filed request was *prima facie* not allowable. The board therefore cannot agree with the respondent's argument that this request would overcome all issues in the proceedings.

31. Hence, auxiliary request 9 is not admitted into the proceedings under Article 13(2) RPBA.

**Order**

**For these reasons it is decided that:**

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairwoman:

C. Rodríguez Rodríguez T. Sommerfeld

Decision electronically authenticated