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Datasheet for the decision of 23 June 2026

Case Number: T 1409/23 - 3.4.03

Application Number: 16896957.4

Publication Number: 3438655

IPC: G01N27/62, G01N27/64, C12Q1/04, G01N33/68

Language of the proceedings: EN

Title of invention:
Microorganism identification method

Patent Proprietor:
Shimadzu Corporation
Meijo University

Opponent:
bioMérieux

Relevant legal provisions:
EPC Art. 100(b), 83
RPBA 2020 Art. 13(1)

Keyword:
Sufficiency of disclosure - (no)
Amendment to case - amendment overcomes objection (no)
Amendment to appeal case - exercise of discretion

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Decisions cited:
G 0001/24, T 0063/06, T 0521/12, T 2001/12, T 0206/13, T 2773/18, T 2015/23

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Case Number: T 1409/23 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 23 June 2026

Appellant: (Opponent)	bioMérieux 69280 Marcy-l'Étoile (FR)
Representative:	Wall, Leythem Oxon IP B.V. Evert Van De Beekstraat 354 1118 CZ Schiphol (NL)
Respondent: (Patent Proprietor 1)	Shimadzu Corporation 1, Nishinokyo-Kuwabaracho, Nakagyo-ku, Kyoto-shi, Kyoto 604-8511 (JP)
Respondent: (Patent Proprietor 2)	Meijo University 1-501, Shiogamaguchi Tempaku-ku Nagoya-shi, Aichi 468-8502 (JP)
Representative:	Müller-Boré & Partner Patentanwälte PartG mbB Friedenheimer Brücke 21 80639 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted/electronically transmitted on 1 June 2023 rejecting the opposition filed against European patent No. 3438655 pursuant to Article 101(2) EPC**

Composition of the Board:

Chairwoman	R. Morawetz
Members:	J. Thomas
	E. Mille

Summary of Facts and Submissions

I. The opponent's appeal is against the opposition division's decision rejecting the opposition against European patent EP 3 438 655 B1.

II. The opposition had been filed against the patent in its entirety based on Article 100(a) and (b) EPC.

In the appealed decision, the opposition division concluded

- that claim 1 was intrinsically limited to *Salmonella* strains that could be identified by mass spectrometry peaks corresponding to the ribosomal marker proteins Peptidylpropyl isomerase or S8,
- that the European patent disclosed the subject-matter defined in claim 1 and the invention to which it related sufficiently clearly and completely for a person skilled in the art to be able to carry it out and
- that the subject-matter of claim 1 of the patent as granted was both new and inventive.

III. In the statement setting out the grounds of appeal, the opponent (appellant) maintained, *inter alia*, objections under Article 100(b) EPC to the claims as granted.

IV. In their reply to the appeal, the patent proprietors (respondents) maintained the patent as granted as their main request and re-submitted sets of claims for auxiliary requests 1 to 6, previously submitted in the proceedings before the opposition division.

V. By letter dated 3 February 2025, the respondents submitted sets of claims for auxiliary requests 1*

to 6*, 7 and 8.

VI. The board appointed oral proceedings and, in a communication pursuant to Article 15(1) RPBA, provided its preliminary assessment of some matters concerning the appeal.

VII. By letter dated 13 April 2026, the respondents provided arguments regarding the admissibility of auxiliary requests 1* to 6*, 7 and 8 and the sufficiency of disclosure of the claims of the main request and auxiliary requests 3 to 8.

VIII. By letter dated 22 May 2026, the appellant presented arguments regarding the inadmissibility of auxiliary requests 1* to 6*, 7 and 8.

IX. In a letter dated 15 June 2026, the respondents set forth their response to the appellant's submissions of 22 May 2026.

X. The parties' requests of relevance to the present decision are as follows.

The **appellant** (opponent) requested
- that the decision under appeal be set aside, and that the patent be revoked in its entirety; and
- that auxiliary requests 1* to 6*, 7 and 8 not be admitted into the proceedings.

The **respondents** (patent proprietors) requested
- that the appeal be dismissed, that is that the patent be maintained as granted (main request) or, alternatively,
- that the patent be maintained in accordance with one of auxiliary requests 1, 1*, 2, 2*, 3, 3*, 4, 4*, 5,

5*, 6, 6*, 7 and 8, wherein auxiliary requests 1 to 6 were filed with the reply to the statement setting out the grounds of appeal and correspond to those filed in first instance proceedings on 5 April 2022 and auxiliary requests 1* to 6*, 7 and 8 were filed with letter of 3 February 2025; and
- that, if the board is not inclined to dismiss the appeal, the case not be remitted to the opposition division and the board also decide on the auxiliary requests.

XI. Claim 1 of the patent as granted (main request) has the following wording:

"*A microorganism identification method comprising*

a) a step of subjecting a sample containing microorganisms to mass spectrometry to obtain a mass spectrum,
b) a step of reading a mass-to-charge ratio m/z of a peak derived from a marker protein from the mass spectrum, and
c) an identification step of identifying which serovar of Salmonella genus bacteria the microorganisms contained in the sample contain, based on the mass-to-charge ratio m/z,

wherein at least one of two types of ribosomal proteins S8 and Peptidylpropyl isomerase is used as the marker protein."

XII. Claim 1 of auxiliary requests 1 and 1* are identical to claim 1 of the main request.

XIII. Claim 1 of auxiliary requests 2 and 2* corresponds in both cases to claim 1 of the main request with the

following amendment in step c) (emphasis by the board; underlining indicates an addition):

"*... based on the mass-to-charge ratio m/z, wherein the Salmonella genus bacteria is Salmonella enterica subsp. enterica, and wherein at least ...*"

XIV. Claim 1 of auxiliary requests 3 and 3* corresponds in both cases to claim 1 of the main request with the following amendment at the end of the claim:

"*... is used as the marker protein; and wherein (i) the serovars of Salmonella genus bacteria are classified using cluster analysis using as an index the mass-to-charge ratio m/z derived from at least 12 types of ribosomal proteins S8, L15, L17, L21, L25, S7, SODa, Peptidylpropyl isomerase, gns, YibT, YaiA and YciF as the marker protein; OR (ii) the serovar of Salmonella genus bacteria is Orion, and at least Peptidylpropyl isomerase is contained as the marker protein; OR (iii) the serovar of Salmonella genus bacteria is Rissen, and at least S8 is contained as the marker protein*"

XV. Claim 1 of auxiliary requests 4 and 4* corresponds in both cases to claim 1 of the main request with the following amendment at the end of the claim:

"*... is used as the marker protein, and wherein the serovars of Salmonella genus bacteria are classified using cluster analysis using as an index the mass-to-charge ratio m/z derived from at least 12 types of ribosomal proteins S8, L15, L17, L21,*

L25, S7, SODa, Peptidylpropyl isomerase, gns, YibT, YaiA and YciF as the marker protein."

XVI. Claim 1 of auxiliary requests 5 and 5* corresponds in both cases to claim 1 of the main request with the following amendment at the end of the claim:

"... *is used as the marker protein, and wherein*
(i) the serovar of Salmonella genus bacteria is Orion, and at least Peptidylpropyl isomerase is contained as the marker protein;
or
(ii) the serovar of Salmonella genus bacteria is Rissen, and at least S8 is contained as the marker protein."

XVII. Claim 1 of auxiliary requests 6 and 6* corresponds in both cases to claim 1 of auxiliary request 2 and incorporates the same additional amendments as those introduced in auxiliary request 3.

XVIII. Claim 1 of auxiliary request 7 corresponds to claim 1 of auxiliary request 2, with the following amendments (emphasis added by the board; deletions are indicated by strike-through and additions by underlining):

"... *wherein the Salmonella genus bacteria is Salmonella enterica subsp. enterica,* ~~*and*~~
wherein at least one of two types of ribosomal proteins S8 and Peptidylpropyl isomerase is used as the marker protein, and wherein
(i) the serovar of Salmonella enterica subsp. enterica is Orion, and at least Peptidylpropyl isomerase is contained as the marker protein; or

(ii) the serovar of Salmonella enterica subsp. enterica is Rissen, and at least S8 is contained as the marker protein."

XIX. Claim 1 of auxiliary request 8 corresponds to claim 1 of auxiliary request 7 with the following amendments:

"... *and wherein*
(i) the serovar of Salmonella enterica subsp. enterica is Orion, and at least Peptidylpropyl isomerase is contained as the marker protein, wherein the mass-to-charge ratio m/z read in step (b), on which identification in step (c) is based, is the mass-to-charge ratio m/z of 10216.11; or
(ii) the serovar of Salmonella enterica subsp. enterica is Rissen, and at least S8 is contained as the marker protein, wherein the mass-to-charge ratio m/z read in step (b), on which identification in step (c) is based, is the mass-to-charge ratio m/z of 14008.41."

XX. The appellant's arguments of relevance to the decision are summarised as follows.

The respondents' "*self-limited*" interpretation of claim 1 had no basis in the wording of the claim and was therefore not persuasive. When given its broadest technically sensible meaning, claim 1 encompassed embodiments that could not be carried out by the skilled person, since the identification of any serovar by means of at least one of the two marker proteins and a peak of the mass-to-charge ratio m/z (m/z ratio) in the spectrum was not possible over the entire scope of claim 1. The same objection applied to auxiliary requests 1 to 6, which were consequently not allowable.

For the same reasons, auxiliary requests 1* to 6* were *prima facie* not allowable and, consequently, should not be admitted into the proceedings. Furthermore, auxiliary requests 7 and 8 should likewise not be admitted, since their filing at a later stage of the proceedings was not justified by exceptional circumstances and because they had the same insufficiency issues as higher ranking requests, i.e. no unique peak was derived for Orion with only Peptidylpropyl isomerase as the marker protein, nor for Rissen with only S8 as the marker protein.

Further details concerning the appellant's reasoning are commented on below in the "*Reasons for the Decision*".

XXI. The respondents' arguments of relevance to the decision are summarised as follows.

The subject-matter of claim 1 of the main request and auxiliary requests 1 to 6 when interpreted in relation to the patent as a whole comprised a "*self-limitation*" insofar that only those serovars which showed a reliable peak in combination with the defined marker proteins were to be identified by the claimed method. Reading claim 1 in combination with the patent as a whole and with a willingness to understand what was intended by the claim did not permit any other interpretation by the skilled reader. Therefore, the objection of lack of sufficiency of disclosure was unjustified. Auxiliary requests 1 to 6 and 1* to 6* further limited the claimed subject-matter in order to further guide the skilled reader to the intended content defined by claim 1. As for auxiliary requests 7 and 8, they should be admitted into the proceedings since they were filed in response to a surprising and

overly strict interpretation of a similar claim wording in another case.

Further details concerning the respondents' reasoning are commented on below in the "*Reasons for the Decision*".

Reasons for the Decision

1. The invention

The invention concerns the identification of *Salmonella* serovars by MALDI-TOF (matrix-assisted laser desorption ionization-time of flight) mass spectrometry (MS). The genus *Salmonella* comprises three different species (see patent, paragraph [0002]) and there are about 2500 serovars in the genus *Salmonella* (ibid., paragraph [0003]). Pathogenic *Salmonella* such as *Salmonella* causing food poisoning belongs mostly to *S. enterica* subsp. *enterica*, which is classified into about 1500 serovars (ibid.). The large number of serovars makes reliable identification of a particular serovar difficult and conventional serotyping methods are often labour-intensive and time-consuming.

Whole cell MALDI-TOF MS detects abundant cellular proteins as specific mass peaks at distinct mass-to-charge ratios (m/z ratios). The patent proposes using ribosomal proteins, in particular Peptidylpropyl isomerase or S8, as marker proteins for serovar identification. Granted claim 1 is directed to a method comprising mass-spectrometric analysis of a sample of microorganisms wherein reading the m/z ratio peak of a marker protein in the spectrum allows identification of the *Salmonella* serovar present in the sample.

2. Main request - Claim construction

2.1 The wording of claim 1 of the main request defines a method for identifying, in a sample containing microorganisms, "*which serovar of Salmonella genus bacteria the microorganisms contained in the sample contain, based on the mass-to-charge ratio m/z, wherein at least one of two types of ribosomal proteins S8 and Peptidylpropyl isomerase is used as the marker protein*".

2.2 It is common practice that a claim should be understood as it stands and in its broadest technically sensible meaning (*Case Law of the Boards of Appeal of the EPO*, 11th revised edition 2026, II.A.6.1, in particular third paragraph).

2.3 None of the technical features recited in claim 1, nor the wording of claim 1 itself, imposes any technical restriction on the expression "*which serovar of Salmonella genus bacteria the microorganisms ... contain*". The claimed identification method is directed to examining the microorganism sample in order to determine which serovar of *Salmonella* genus bacteria as such it comprises by means of an m/z ratio peak in the spectrum associated with at least one of the two marker proteins Peptidylpropyl isomerase or S8.

2.4 Hence, the wording of claim 1 is broad and does not provide any basis for a "*self-limitation*" to the identification of only serovars of *Salmonella enterica* subsp. *enterica*, let alone to the specific serovars investigated in the patent or even to one of the two serovars Orion or Rissen. Such limitations cannot be derived from the claim wording and are indeed

incompatible with the wording of claim 1 which specifies that the method identifies "*which serovar of Salmonella genus bacteria*" the sample contains.

2.5 Contrary to the respondents' view, the reference to the mass-to-charge ratio m/z is not sufficient for self-limitation because step c) of claim 1 refers only to the mass-to-charge ratio m/z as such, and not to the specific spectrum and peaks attributed to the two marker proteins.

2.6 The respondents further argued by referring, *inter alia*, to G 1/24 that, when interpreting claim 1 in combination with the patent as a whole, it would be understood as being limited to the identification of only those serovars which are shown in the patent to be identifiable using the two marker proteins recited in claim 1, i.e. to the serovars Orion or Rissen of the species *Salmonella enterica* subsp. *enterica*. In the respondents' view, claim 1 could not be understood differently when read by a skilled reader.

2.7 The respondents' claim interpretation is however not convincing to the board, since the "*self-limiting*" claim construction does not correspond to how the skilled person, reading claim 1 and the patent as a whole with a mind willing to understand, would interpret claim 1.

2.7.1 In particular, the patent does not provide a basis for restricting the method of claim 1 to the identification of only specific serovars or to the identification of only those serovars dealt with in the examples and exhibiting particular peaks. Such an interpretation constitutes an artificial narrowing of claim 1 rather

than a technically sensible understanding of its actual wording in the light of the patent as a whole.

2.7.2 Indeed "*identifying which serovar of Salmonella genus bacteria the microorganisms contained in the sample contain, based on the mass-to-charge ratio m/z*" as defined in claim 1 refers to any serovar of any possible *Salmonella* genus bacteria as such and hence the whole range of more then 2500 different known serovars of *Salmonella* genus bacteria (including three different species and not only *Salmonella enterica* subsp. *enterica*).

2.7.3 According to the patent itself, peaks appear in the spectrum for the analysed *Salmonella* serovars for the marker protein Peptidylpropyl isomerase at m/z ratios of 10198.07 or 10216.79 and for the marker protein S8 at m/z ratios of 13996.36 and 14008.41 (see impugned patent, paragraph [0054]).

The m/z ratio peak at 10198.07 for Peptidylpropyl isomerase and the m/z ratio peak at 13996.36 for S8 appeared in the presence of at least five different serovars (see impugned patent, Figures 7A to 7F and 8A to 8D). Hence, the skilled reader will understand that with these peaks, no unambiguous identification of a specific serovar is possible based on only one m/z ratio peak. However, this teaching is insufficient to justify disregarding these peaks when interpreting claim 1. The respondents' "*self-limiting*" interpretation excludes some peaks from the method of claim 1 in an artificial, cherry picking and unjustified manner, and tries to limit the technical content of claim 1 to a few specifically selected peaks and serovars, contrary to the wording of claim 1 and the teaching of the patent as a whole.

2.7.4 The board is also not persuaded that claim 1 can be construed as being implicitly limited to the identification of only the serovars Orion or Rissen on the basis of the m/z peak at 10216.79 for the marker protein Peptidylpropyl isomerase or the m/z peak at 14008.41 for the marker protein S8, respectively. Such a "*self-limitation*" would amount to an arbitrary and selective restriction to isolated embodiments from the patent's broader teaching and lacks any basis in the patent. Accordingly, there is no reason to interpret claim 1 as being restricted to the identification of serovars exhibiting a unique peak in Figures 8A and 8B of the patent.

2.8 In conclusion, contrary to the findings in the decision under appeal and the respondents' view, there is no reason for reading into claim 1 any "*self-limitation*" or "*implicit limitation*". Claim 1 defines a general identification method which is directed to the identification of any serovar of *Salmonella* genus bacteria by using one of the two ribosomal proteins Peptidylpropyl isomerase and S8 as the marker protein.

3. Sufficiency of disclosure

3.1 Taking into account the above construction of claim 1, it is clear and not contested by the respondents that it is impossible to identify all serovars of the *Salmonella* genus bacteria using a reading of an m/z ratio peak in the mass spectrum derived from at least one of the two ribosomal marker proteins Peptidylpropyl isomerase or S8.

3.2 It is common ground that the unambiguous identification of a serovar of *Salmonella* genus bacteria on the basis

of an m/z ratio of a peak derived from a single marker protein requires the m/z value for the marker protein to shift to a unique value for the specific serovar. However, the peaks appearing in the presence of the marker proteins and discussed in the patent are neither limited to a specific unique peak, nor have the specific peaks for Orion and Rissen, namely the peak at 10216.79 for the marker protein Peptidylpropyl isomerase and the peak at 14008.41 for the marker protein S8, been proven to be unique.
The patent investigates m/z ratios of ribosomal proteins and their potential use as marker proteins for serovar identification of *Salmonella enterica* subsp. *enterica* in the context of 64 strains of *Salmonella* (see impugned patent, examples). For each of the ribosomal marker proteins Peptidylpropyl isomerase and S8, the patent discloses m/z ratio peaks in the spectrum (see impugned patent, paragraph [0054]), namely peaks at 10216.79 and 10198.07 for the marker protein Peptidylpropyl isomerase and peaks at 14008.41 and 13996.36 for the marker protein S8.

3.2.1 In the patent, the peak at 10216.79 for Peptidylpropyl isomerase was related to Orion and the peak at 14008.41 for S8 to Rissen. These two peaks have, however, not been proven to be unique, in particular not when all serovars of *Salmonella* are taken into account, as even the respondents accepted during oral proceedings.
Although the patent discloses in Figure 8B the peak at 10216.11 of Peptidylpropyl isomerase only for Orion and in Figure 8C the peak 14008.41 of S8 only for Rissen, it cannot be concluded that these peaks are unique, as they are the result of a limited investigation of only a few serovars analysed in the patent. No evidence or logical chain of argument has been provided to the effect that these peaks occur

exclusively in the presence of Orion or Rissen and not any other *Salmonella* serovars out of the total number of more than 2500 known serovars, i.e. that these two peaks are overall unique peaks taking into account all possible serovars. Nor is there any evidence that these peaks would not also occur in the presence of bacterial species other than *Salmonella* or other microorganisms.

As a result, the peak at 10216.79 for Peptidylpropyl isomerase and the peak at 14008.41 for S8 have not been proven to permit an unambiguous identification of the serovars Orion and Rissen.

3.2.2 Likewise, the peaks arising for m/z ratios at 10198.07 in the presence of the marker protein Peptidylpropyl isomerase or at 13996.36 in the presence of the marker protein S8 are not unique as reasoned under point 2.7.3 above. Thus, even within the limits of the experiment in the patent, which was based on a very limited number of serovars of *Salmonella enterica* subsp. *enterica* (see impugned patent, paragraph [0042]), the peaks at 10198.07 arising for Peptidylpropyl isomerase and at 13996.36 arising for S8 in the presence of the *Salmonella* genus bacteria do not permit an unambiguous identification of any serovar.

3.3 The respondents did not dispute that the patent does not disclose the invention defined in claim 1 in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, if the claim is interpreted to encompass the identification of all serovars of *Salmonella* genus bacteria. Rather, their arguments were based on their interpretation of claim 1 relying on an alleged "*self-limitation*" of claim 1.

3.4 The respondents also referred to the *Case Law of the Boards of Appeal of the EPO* (11th edition 2025, II.C.3.3) and decisions T 2001/12, T 206/13, T 521/12 and T 2773/18.

3.4.1 These decisions were cited in order to underline the following points.

An objection of insufficient disclosure "*cannot legitimately be based on an argument that the application would not enable a skilled person to achieve a non-claimed technical effect*" (T 2001/12, Reasons 3.4, and confirmed by T 206/13, Reasons 3.4). Moreover, according to T 521/12 (Reasons 9.1), a sensible reading of the patent as a whole should be applied when reading the claim, thereby excluding any interpretation of the wording of claim 1 that is meaningless or inconsistent in view of the teaching of the patent as a whole.

Similar to decision T 521/12, in decision T 2773/18 it was decided that "*the skilled person should try, with synthetical propensity, i.e. building up rather than tearing down, to arrive at an interpretation of the claim which is technically sensible and takes into account the whole disclosure of the patent*" (Reasons, 2.3). The skilled reader would thus arrive, from the entire disclosure of the patent, at an understanding of what works and what does not work, thereby excluding the non-working embodiments of the patent from the claim wording.

3.4.2 The board does not contest these conclusions, but considers that the situations underlying the cited decisions significantly differ from the situation of the case at hand for the following reasons.

Claim 1 clearly defines the technical effect of the method as "*identifying which serovar of Salmonella genus bacteria the microorganisms contained in the sample contain*" (emphasis added by the board) using at least one of the two marker proteins S8 or Peptidylpropyl isomerase. No non-claimed technical effect is taken into consideration when it is held that, in order to satisfy the requirements of sufficiency of disclosure, the patent must enable a skilled person to achieve the identification of any serovar of *Salmonella* genus bacteria contained in the sample, since this is what is claimed.

Why the patent as a whole does not provide a "*self-limitation*" which the skilled person, when reading the patent with a willingness to understand, would read into the wording of claim 1 has already been discussed under point 2.7 and sub-points above. What works and what does not work when identifying a *Salmonella* serovar based on one m/z ratio in the spectrum is not sufficiently taught in the patent as a whole to lead to a conclusion of "*self-limitation*". And while the patent provides further teaching that the classification of some serovars into 31 subgroups is possible in a more complex manner by interpreting several peaks in combination with a cluster analysis (see impugned patent, paragraphs [0024], [0036] to [0040] and [0056]), the claimed identification method does not, contrary to the respondents' submissions, explicitly include the classification into 31 different clinically relevant subgroups, nor is claim 1 implicitly limited to that.

3.4.3 Hence, the cited decisions relate to different situations and in no way contradict the conclusions

drawn in the case at hand.

3.5 Finally, as regards the requirement of providing serious doubts substantiated by verifiable facts, the board takes the view that the lack of guidance in the patent combined with the verifiable facts provided in the patent itself and pointed to by the appellant suffice to substantiate serious doubts in the case at hand. Furthermore, if there is only a weak presumption of sufficiency, it is sufficient for the opponent/ appellant to present comprehensive and plausible arguments to raise serious doubts (T 63/06, Reasons 3.3.1).

3.6 Consequently, the patent does not disclose the claimed invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

Therefore, the ground for opposition of sufficiency of disclosure (Article 100(b) EPC) prejudices maintenance of the patent as granted.

4. Auxiliary request 1 - Sufficiency of disclosure

Claim 1 of auxiliary request 1 is identical to claim 1 of the main request (see point XII. above). Thus, the same reasoning as for the main request applies *mutatis mutandis* to auxiliary request 1, which consequently does not fulfil the requirements of Article 83 EPC.

5. Auxiliary request 2 - Sufficiency of disclosure

5.1 The amendment of claim 1 of auxiliary request 2 concerns specification of the *Salmonella* genus bacteria as being the *Salmonella enterica* subsp. *enterica*.

5.2 This amendment has no influence on the reasoning provided regarding lack of sufficiency of disclosure for the main request. Restricting the *Salmonella* genus bacteria down from more than 2500 serovars to the specific subspecies of *Salmonella enterica* subsp. *enterica,* which still represents more than 1600 serovars, has no effect on the fact that identification of any of the serovars of *Salmonella enterica* subsp. *enterica* using a single peak in relation to one of the two defined marker proteins is not possible based on the teaching of the patent.

5.3 The respondents referred to the same arguments as the ones presented for the main request, i.e. the "*self-limitation*" of the wording of claim 1. However, these arguments are not convincing for the same reasons as explained above for the main request, *mutatis mutandis*.

5.4 Hence, for the same reasons as for the main request, auxiliary request 2 does not fulfil the requirement of sufficiency of disclosure (Article 83 EPC).

6. Auxiliary request 3 - Sufficiency of disclosure

6.1 Claim 1 of auxiliary request 3 defines three alternatives, in addition to claim 1 of the main request.

The first alternative concerns the classification of serovars using a cluster analysis.

The second and third alternatives concern identification of the serovars Orion or Rissen when at least Peptidylpropyl isomerase or S8 is used as the marker protein.

6.2 As concerns the first alternative, the patent itself states that classification using a cluster analysis and 12 types of ribosomal proteins does not allow the identification of "*serovars of Infantis, Brandenburg, Minnesota and Saintpaul*" (impugned patent, paragraph [0059]) while "*other serovars could be almost identified*" (ibid., emphasis added by the board). The patent itself therefore acknowledges that identification using cluster analysis is largely unsuccessful, even for the small number of serovars investigated (impugned patent, paragraph [0059]). Consequently, based on the teaching of the patent, the first alternative of claim 1 of auxiliary request 3 cannot be carried out over the whole scope defined by the first alternative of claim 1.

6.3 As regards the second and third alternatives, reference is made to the reasoning set out under point 3. above, the key points of which are summarised in point 6.3.1 below. Further considerations are set out in point 6.3.2 ff below.

6.3.1 In short, given the large number of known serovars (2500) and the limited number of serovars studied in the patent (22), the data disclosed in the patent are clearly insufficient to demonstrate that the m/z values for Peptidylpropyl isomerase and S8 shift to values that are, in fact, unique for the Orion and Rissen serovars, i.e. to values that do not occur in any other serovar. Furthermore, there is no evidence that these peaks would not also occur in the presence of bacterial species other than *Salmonella* or other microorganisms. This lack of guidance and information in the patent constitutes verifiable facts that raise serious doubts as to whether the peak values disclosed

in Figures 8B and 8C of the patent would permit the unambiguous identification of Orion and Rissen if they were present in a sample containing other microorganisms and/or other serovars from *Salmonella* genus bacteria that differ from those analysed in the patent.

6.3.2 Moreover, as also argued by the appellant, even in the patent the uniqueness of the peak at m/z ratio of 14008.41 for Rissen in combination with S8 is doubtful: Figure 7F cites a second serovar, UN_O7, in combination with the marker protein S8 and a peak at 14008.41, which, however, contradicts what is shown in Figure 8D. Figure 8D shows UN_O7 in combination with the marker protein S8 at 13996.36.

6.3.3 The respondents argued that Figure 7F refers to the theoretical values and Figure 8D to the measured data. This is not convincing, however, since according to the description of the patent, column 5, lines 35 to 38, "*Figure 7F shows a list of theoretical mass values of each ribosomal protein of Salmonella genus bacteria used in examples and measured values by MALDI-TOF MS*" (emphasis added by the board). The respondents confirmed this.

6.3.4 Therefore, the respondents' argument that Figure 7F concerns only a theoretical value which is not confirmed by the measurements of Figure 8D, cannot be accepted. At the very least, there is a contradiction in the patent that further reinforces doubts regarding the uniqueness of the peak at 14008.41 for the serovar Rissen in combination with the marker protein S8.

6.3.5 Hence, the second and third alternatives cannot be carried out over the whole scope of claim 1 either, contrary to the requirement of Article 83 EPC.

6.4 Therefore, none of the three alternatives defined in claim 1 of auxiliary request 3 meets the requirement of sufficiency of disclosure (Article 83 EPC).

7. Auxiliary request 4 - Sufficiency of disclosure

Claim 1 of auxiliary request 4 concerns the first alternative discussed in relation to claim 1 of auxiliary request 3. Hence, the reasoning why the first alternative of claim 1 of auxiliary request 3 cannot be carried out over the whole scope of claim 1 (see point 6. above) applies *mutatis mutandis* to claim 1 of auxiliary request 4.

Auxiliary request 4 consequently does not meet the requirement of sufficiency of disclosure (Article 83 EPC).

8. Auxiliary request 5 - Sufficiency of disclosure

8.1 Claim 1 of auxiliary request 5 concerns the second and third alternatives discussed in relation to claim 1 of auxiliary request 3. Hence, the reasoning why the second and third alternatives of claim 1 of auxiliary request 3 cannot be carried out over the whole breadth of claim 1 (see point 6.3 above) applies *mutatis mutandis* to claim 1 of auxiliary request 5.

8.2 Auxiliary request 5 consequently does not meet the requirement of sufficiency of disclosure (Article 83 EPC).

9. Auxiliary request 6 - Sufficiency of disclosure

9.1 Claim 1 of auxiliary request 6 is a combination of claim 1 of auxiliary request 2 and claim 1 of auxiliary request 3.

9.2 As reasoned for auxiliary request 2 (see point 5. above), limitation of the *Salmonella* genus bacteria to the *Salmonella enterica* subsp. *enterica* does not overcome any objections raised for the higher ranking requests but merely reduces the number of possible serovars to a still very high number. Moreover, this limitation has no influence on the three alternatives discussed above with regard to auxiliary request 3.

Therefore, the reasons why the three alternatives defined in claim 1 of auxiliary request 3 cannot be carried out over the whole scope of claim 1 still apply in unamended form to claim 1 of auxiliary request 6.

9.3 Hence, claim 1 of auxiliary request 6 does not meet the requirements of sufficiency of disclosure (Article 83 EPC) for the same reasons as discussed for auxiliary request 3 (see point 6. above).

10. Auxiliary requests 1* to 6* - Admittance

10.1 Auxiliary requests 1* to 6* were filed almost one year after the respondents' reply to the statement setting out the grounds of appeal.

10.2 Therefore, they constitute an amendment to the respondents' appeal case, the admittance of which is at the board’s discretion (Article 13(1) RPBA).

10.3 One criterion that the board must take into account in exercising its discretion is whether the amendment, *prima facie*, overcomes the issues raised in the appeal proceedings (see Article 13(1) RPBA).

10.4 Claim 1 of each of auxiliary requests 1* to 6* is identical to claim 1 of each of corresponding auxiliary requests 1 to 6. None of the claims 1 of auxiliary requests 1* to 6* *prima facie* overcomes the objections raised against the claims 1 of the corresponding auxiliary requests 1 to 6.

10.5 Given that auxiliary requests 1* to 6* are *prima facie* not allowable, the board exercises its discretion under Article 13(1) RPBA not to admit them into the proceedings.

11. Auxiliary requests 7 and 8 - Admittance

11.1 Auxiliary requests 7 and 8 were filed almost one year after the respondents' reply to the statement setting out the grounds of appeal and their admittance is also at the board’s discretion.

11.2 The respondents argued that the filing of auxiliary requests 7 and 8 was justified by a surprising and overly strict interpretation of the claims in case T 2015/23, which they considered unexpected.

11.3 Case T 2015/23 concerned appeal proceedings which involved the same parties but were not linked to the present case. Case T 2015/23 was directed to the identification of microorganisms using mass spectroscopy, and decided by a different board.

11.4 The present board is of the view that the outcome of a different case decided by another board is irrelevant to the procedural and substantive issues to be decided in the case at hand. Consequently, it cannot constitute a valid justification for the late filing of requests in the proceedings at hand.

11.5 Moreover, for the following reasons, the alleged surprising and overly strict interpretation of the claims cannot justify the late filing of auxiliary requests 7 and 8, irrespective of whether that interpretation arose from another case or only became apparent in the present proceedings.

When filing the reply to the statement setting out the grounds of appeal, the respondents could legitimately rely neither on the "*self-limited*" interpretation of claim 1 nor on the opposition division's decision on sufficiency of disclosure as being final. Instead, they had to consider the possibility that the factual and legal basis of the contested decision might be evaluated differently in the appeal proceedings and that the board might agree with the appellant on the interpretation of claim 1 as granted.

Indeed, as the "*self-limiting*" interpretation of claim 1 adopted by the opposition division was contested by the appellant, the respondents could and should have anticipated that the "*self-limiting*" interpretation of claim 1 adopted by the opposition division might not be maintained in appeal proceedings.

Therefore, the respondents cannot justify the late filing on the basis of any surprising and overly strict interpretation of the claims, still less from another case, since they could and should have anticipated the

possibility, in the present case, of the board agreeing with the appellant on this issue based on the arguments presented in the appellant's grounds of appeal.

Thus, auxiliary requests 7 and 8 could and should have been filed earlier, at the latest together with the reply to the statement setting out the grounds of appeal.

In addition, the appellant is right that neither auxiliary request 7 nor auxiliary request 8, *prima facie*, overcomes the objections raised against the higher ranking claim requests.

11.6 Hence, since the board sees no convincing justification for the late submission of auxiliary requests 7 and 8 or valid grounds to admit auxiliary requests 7 and 8 into the proceedings, these requests are not admitted into the proceedings (Article 13(1) RPBA).

12. Conclusion

Since neither the main request nor any of auxiliary requests 1 to 6 are allowable due to lack of sufficiency of disclosure, and auxiliary requests 1* to 6*, 7 and 8 are not admitted into the proceedings, the patent cannot be maintained in any form.

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:

S. Sánchez Chiquero R. Morawetz

Decision electronically authenticated