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**Datasheet for the decision
of 3 September 2024**

Case Number: T 1799/21 - 3.3.08

Application Number: 15731618.3

Publication Number: 3164485

IPC: C12N9/04, C12P1/06

Language of the proceedings: EN

Title of invention:

Microorganisms and methods for producing vanillin

Patent Proprietor:

Specialty Operations France

Opponent:

Ennolys

Headword:

Microorganisms producing vanillin/SPECIALTY OPERATIONS FRANCE

Relevant legal provisions:

EPC Art. 56

RPBA 2020 Art. 13(2)

Keyword:

Main request (claims as granted) and auxiliary requests 1 to 11 - inventive step - (no)

Auxiliary requests 12 and 13 - amendments submitted during oral proceedings - taken into account (no)

Decisions cited:

T 0967/97

Catchword:



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Case Number: T 1799/21 - 3.3.08

D E C I S I O N
of Technical Board of Appeal 3.3.08
of 3 September 2024

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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted on 20 August 2021
rejecting the opposition filed against European
patent No. 3164485 pursuant to Article 101(2)
EPC**

Composition of the Board:

Chair

T. Sommerfeld

Members:

M. Montrone

R. Winkelhofer

Summary of Facts and Submissions

- I. An appeal was lodged by the opponent ("appellant") against the decision of an opposition division rejecting the opposition against the European patent No. 3 164 485. This patent is based on European patent application No. 15731618.3 which has been filed as International patent application published as WO 2016/001203.
- II. The opposition proceedings were based on all grounds under Article 100(a) to (c) EPC.
- III. With their statement of grounds of appeal (hereinafter "SGA"), the appellant submitted *inter alia* arguments under lack of inventive step against the subject-matter of the claims as granted.
- IV. In reply (hereinafter "reply"), the patent proprietor ("respondent") re-submitted *inter alia* auxiliary requests 1 to 11 which were already filed during the first instance proceedings.
- V. In a further submission, the appellant raised *inter alia* objections under lack of inventive step against the subject-matter of auxiliary requests 1 to 11.
- VI. In a communication pursuant to Article 15(1) RPBA, the parties were informed of the board's preliminary opinion.
- VII. At the oral proceedings, the respondent submitted auxiliary requests 12 and 13.
- VIII. Claim 1 as granted (main request) reads:

"1. A recombinant strain belonging to the order of *Actinomycetales*, wherein at least one gene encoding an enzyme having vanillin reductase activity is non-functional; characterized in that:

- said gene encoding an enzyme having vanillin reductase activity presents a sequence having at least 80% of nucleic acid identity with a sequence selected in a group consisting of the sequences SEQ ID NO 1, SEQ ID NO 3, SEQ ID NO 5, SEQ ID NO 7, and SEQ ID NO 9; and/or
- said enzyme having vanillin reductase activity has an amino acid sequence presenting at least 80% of amino acid identity with a sequence selected in a group consisting of the sequences: SEQ ID NO 2, SEQ ID NO 4, SEQ ID NO 6, SEQ ID NO 8, and SEQ ID NO 10; and/or
- at least one gene chosen among the genes presenting the sequences as shown in SEQ ID NO 1 (*vr1*), SEQ ID NO 3 (*vr2*), SEQ ID NO 5 (*vr3*), SEQ ID NO 7 (*vr4*) and SEQ ID NO 9 (*vr5*) is non-functional."

IX. Claim 1 of auxiliary request 1 differs from claim 1 of the main request in that the feature "*order of Actinomycetales*" has been replaced by "*genus Amycolatopsis or Streptomyces*".

X. Claim 1 of auxiliary request 2 differs from claim 1 of the main request in that the feature "*at least 80%*" has been replaced by "*at least 90%*".

- XI. Claim 1 of auxiliary request 3 differs from claim 1 of the main request in that it combines the amendments of claims 1 of auxiliary requests 1 and 2.
- XII. Claim 1 of auxiliary request 4 differs from claim 1 of the main request in that the feature "*at least one gene*" has been replaced by "*at least two genes*" (and the respective plural forms have been adapted).
- XIII. Claim 1 of auxiliary request 5 differs from claim 1 of the main request in that it combines the amendments of claims 1 of auxiliary requests 1 and 4.
- XIV. Claim 1 of auxiliary request 6 differs from claim 1 of the main request in that it combines the amendments of claims 1 of auxiliary requests 2 and 4.
- XV. Claim 1 of auxiliary request 7 differs from claim 1 of the main request in that it combines the amendments of claims 1 of auxiliary requests 3 and 4.
- XVI. Claim 1 of auxiliary request 8 differs from claim 1 of the main request in that the feature "*at least one gene*" has been replaced by "*five genes*" (and the respective plural forms have been adapted).
- XVII. Claim 1 of auxiliary request 9 differs from claim 1 of the main request in that it combines the amendments of claims 1 of auxiliary requests 1 and 8.
- XVIII. Claim 1 of auxiliary request 10 differs from claim 1 of the main request in that it combines the amendments of claims 1 of auxiliary requests 2 and 8.

XIX. Claim 1 of auxiliary request 11 differs from claim 1 of the main request in that it combines the amendments of claims 1 of auxiliary requests 3 and 8.

XX. Claim 1 of auxiliary request 12 reads:

"1. A process for producing vanillin, comprising the culture of a recombinant strain in an appropriate medium comprising a substrate, and recovery of the produced vanillin; wherein said recombinant strain is a recombinant strain belonging to the order of *Actinomycetales*, wherein at least one gene encoding an enzyme having vanillin reductase activity is non-functional; characterized in that:

- said gene encoding an enzyme having vanillin reductase activity presents a sequence having at least 80% of nucleic acid identity with a sequence selected in a group consisting of the sequences SEQ ID NO 1, SEQ ID NO 3, SEQ ID NO 5, SEQ ID NO 7, and SEQ ID NO 9; and/or
- said enzyme having vanillin reductase activity has an amino acid sequence presenting at least 80% of amino acid identity with a sequence selected in a group consisting of the sequences: SEQ ID NO 2, SEQ ID NO 4, SEQ ID NO 6, SEQ ID NO 8, and SEQ ID NO 10; and/or
- at least one gene chosen among the genes presenting the sequences as shown in SEQ ID NO 1(*vr1*), SEQ ID NO 3(*vr2*), SEQ ID NO 5(*vr3*), SEQ ID NO 7(*vr4*) and SEQ ID NO 9(*vr5*) is non-functional".

XXI. Claim 1 of auxiliary request 13 differs from claim 1 of the main request in that the feature "*wherein said*

strain is a recombinant form of the strain Amycolatopsis sp. accessible under number ATCC 39116" has been added at the end of the claim.

XXII. The following documents are referred to in this decision:

D5: Muheim A. and Lerch K., *Applied Microbiology and Biotechnology*, 1999, Vol. 51, 456-461

D8: Achterholt S., PhD thesis, "Untersuchungen zur Produktion von Vanillin durch *Amycolatopsis sp.* HR167: Ferulasaurekatabolismus und Etablierung eines Transformationssystems", 2001, 75-81, 133

D9: Fleige C. *et al.*, *Applied and Environmental Microbiology*, 2013, Vol. 79(1), 81-90.

D11: WO 2012/172108

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

Main request (claims as granted)

Claim construction - Claim 1

The subject-matter of claim 1 as granted comprised to a substantial extent bacterial strains that did not produce vanillin as shown in documents D5 and D8. The mere presence of non-functional vanillin reductase (vr) genes did not change this fact since these genes were not involved in vanillin's biosynthesis. Nor were the strains of claim 1 required to contain endogenous vr genes that have been made non-functional.

Inventive step - Claim 1

Documents D9 and D11 represented the closest prior art. These documents disclosed a mutant *Amycolatopsis* ATCC 39116 strain used for the production of vanillin. The strains of claim 1 differed therefrom in that they contained at least one non-functional *vr* gene. Since no technical effects were ascribable to this distinguishing feature, the technical problem to be solved resided in the provision of an alternative strain belonging to the order of *Actinomycetales* comprising a non-functional gene.

Since the genomic sequence of *Amycolatopsis* ATCC 39116 strain was available at the relevant filing date of the patent, and means of rendering genes non-functional belonged to the skilled person's common general knowledge, the provision of a further *Actinomycetales* strains comprising a non-functional gene was arbitrary and hence lacked an inventive step.

These arguments also applied for the subject-matter of claim 1 of auxiliary requests 1 to 11.

Admittance of auxiliary requests 12 and 13 into the appeal proceedings

Auxiliary requests 12 and 13 had been filed only at the oral proceedings. No exceptional circumstances existed for the requests' admittance since the argument that claim 1 as granted comprised to a substantial extent non-vanillin producing strains had been on file since the onset of opposition proceedings.

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

Main request (claims as granted)

Claim construction - claim 1

Substantially all strains belonging to the order of *Actinomycetales* produced vanillin under suitable conditions. The presence of an endogenous *vr* gene in such a strain was a strong indication that it produced vanillin too. Documents D5 and D8 did not provide evidence to the contrary. The *Actinomyces* and *Streptomyces* strains disclosed in documents D5 and D8 were not recombinant strains having non-functional *vr* gene(s), but wild-type strains. It was commonly known that wild-type *Actinomyces* and *Streptomyces* strains possessed competing metabolic pathways so that, although these strains in principle produced vanillin, no vanillin was detectable. Furthermore, documents D5 and D8 disclosed a limited selection of growth media only. From the limited use of these media in growing bacterial strains no conclusions could be drawn about the strains' vanillin producing abilities.

Inventive step - claim 1

Document D5 represented a more suitable closest prior art than document D11 since this document disclosed the wild-type *Amycolatopsis* ATCC 39116 strain.

Document D11 disclosed an *Amycolatopsis* ATCC 39116 strain with a mutated vanillin dehydrogenase (*vdh*) gene which accumulated higher concentrations of vanillin compared to the wild-type strain. The claimed strain differed therefrom in that at least one *vr* gene was inactivated. This had the effect that also this strain produced vanillin at higher concentrations than the wild-type strain.

The objective problem to be solved was thus the provision of an alternative recombinant strain of the order of *Actinomycetales*.

The selection of strains wherein at least one of the *vr* genes was inactivated was based on an inventive step. Document D11 disclosed solely the *vdh* gene and contained no pointers for inactivating the *vr* gene(s) as an alternative for obtaining strains that produced more vanillin compared to the wild-type strain. That *vr* genes were involved in the reduction of vanillin to vanillic alcohol (and hence reduced the amount of vanillin produced) was not suggested in the prior art (document D9). On the contrary, the prior art reported on the existence of many metabolic competitive pathways and dehydrogenase enzymes in *Actinomycetales* strains. The skilled person could have therefore selected many different routes while none of them pointed to the inactivation of at least one *vr* gene.

These arguments also applied to the subject-matter of claim 1 of auxiliary requests 1 to 11.

Admittance of auxiliary requests 12 and 13 into the appeal proceedings

Auxiliary requests 12 and 13 comprised straightforward amendments which addressed issues raised in the board's preliminary opinion. Since both sets of claims restricted the scope of the subject-matter claimed, no new issues arose. Moreover, since the amended claims comprised subject-matter from other claims, the claimed subject-matter was neither new nor surprising for the appellant. Since the appellant had submitted many objections at the opposition stage, for procedural reasons it had not been appropriate to file at this stage a large number of auxiliary requests that

addressed all these issues at the opposition proceedings.

XXV. The relevant requests of the parties are:

(a) The appellant requests that the decision of the opposition division be set aside and amended such that the patent be revoked.

(b) The respondent requests that

- the appeal be dismissed (main request), or that the patent be maintained in amended form on the basis of one of auxiliary requests 1 to 13.

Reasons for the Decision

Main request (claims as granted)

Claim construction - Claim 1

1. Claim 1 relates to a *"recombinant strain belonging to the order of Actinomycetales, wherein at least one gene encoding an enzyme having vanillin reductase activity is non-functional"*. This strain is further characterised in that:
 - said gene presents a sequence *"having at least 80% of nucleic acid identity"* with a sequence selected in a group consisting of *"SEQ ID NO 1, SEQ ID NO 3, SEQ ID NO 5, SEQ ID NO 7, and SEQ ID NO 9"*; and/or
 - said enzyme has a sequence *"presenting at least 80% of amino acid identity"* with a sequence selected in a group consisting of *"SEQ ID NO 2, SEQ ID NO 4, SEQ ID NO 6, SEQ ID NO 8, and SEQ ID NO 10"*; and/or
 - *"at least one gene"* chosen among the sequences *"shown in SEQ ID NO 1(vr1), SEQ ID NO 3(vr2), SEQ*

ID NO 5(vr3), SEQ ID NO 7(vr4) and SEQ ID NO 9(vr5) is non-functional".

2. In other words, claim 1 is directed to any recombinant strain of the order of *Actinomycetales* having at least one non-functional gene encoding an enzyme having vanillin reductase (vr) activity, wherein said gene has at least 80% sequence identity at the nucleic acid level (encoded by SEQ ID NOs 1, 3, 5, 7 or 9) or the amino acid level (encoded by SEQ ID NOs 2, 4, 6, 8 or 10) to one of five vr gene sequences (vr1 to vr5 represented by SEQ ID NOs 1, 3, 5, 7 and 9).
3. The order of *Actinomycetales* describes a large group of bacterial strains which *inter alia* encompass the genus *Amycolatopsis* and *Streptomyces*. The recombinant strain of claim 1 is not further characterised besides its origin and the presence of at least one non-functional vr1 to vr5 gene. Claim 1 is in particular silent on the strain's suitability to produce a certain product, for example, vanillin.
4. Paragraph [0005] of the patent in conjunction with Figures 1 and 2 disclose that vanillin is produced as an intermediate in bacteria of the order *Actinomycetales* when grown on ferulic acid as substrate. Vanillin itself is then either further converted into vanillic acid by a vanillin dehydrogenase (VDH) or into vanillic alcohol in the presence of a vanillin reductase (VR). Both enzymatic reactions reduce the amount of bacterially generated vanillin and are thus unwanted side reactions in the production of vanillin.
5. A matter of particular importance in the present case is the issue of whether or not substantially all

recombinant strains defined in claim 1 are capable of producing vanillin, at least to a low extent.

6. The respondent submitted that the presence of an "endogenous" vr gene in the genome of a strain of the order of *Actinomycetales* provided a strong indication of this property, in particular when such a strain was grown under suitable conditions.
7. This is not convincing.
 - 7.1 As set out above (points 2 and 3), the recombinant strains of claim 1 are not further characterised besides their origin (derived from the order of *Actinomycetales*) and the presence of at least one non-functional vr1 to vr5 gene of a defined minimal sequence identity. Since the origin of the non-functional vr genes is not defined in claim 1, these vr genes can be of endogenous origin (i.e. naturally present in the strain's genome), or of a heterologous origin, i.e. derived from other organisms as long as they have at least 80% sequence identity to the vr sequences defined in claim 1. Thus the recombinant strains of claim 1 are not limited by the presence of an "endogenous" vr gene. Nor does claim 1 functionally require that the claimed strains produce vanillin (point 3 above) or defines, for example, conditions or other genes (e.g. patent, Figure 1) which necessarily enable the recombinant strains to produce vanillin.
 - 7.2 Irrespective thereof and for the reasons given below, not all strains of the order of *Actinomycetales* are naturally capable of producing vanillin - either as an intermediate of a metabolic pathway or as end product thereof.

7.3 Document D5, for example, discloses in this context "*On the basis of the wide metabolic variety of actinomycetes, we have investigated over 120 isolated strains for their ferulic acid degradation pattern. Most of the strains tested did not degrade the acid at all; 12 strains were found to decarboxylate ferulic acid leading to vinylguaiacol and only 4 showed weak formation of vanillic acid without any accumulation of vanillin. Formation of minor traces of vanillin was found only with *S. setonii* as reported earlier*" (page 458, right column, second paragraph). As set out in point 4 above, the patent discloses that ferulic acid is a suitable substrate for strains of Actinomycetes in producing vanillin and that vanillic alcohol and vanillic acid are degradation products of vanillin. Document D5 discloses therefore that in a study comprising 120 different strains of Actinomycetes, only 16 produced vanillin degradation products and 1 strain accumulated vanillin despite of being grown under suitable conditions. Even when assuming, in the respondent's favour, that the finding of vanillin degradation products indicates that vanillin is produced, document D5 discloses that 17 out of 120 strains are capable of naturally producing vanillin as intermediate or end product, i.e. about 14% of the strains only. Indications that the 86% non-vanillin producer strains have competitive metabolic pathways and therefore do not produce vanillin, or its degradation products - although they in principle could - are missing from document D5.

7.4 Also document D8 discloses in Table 3.2 that some of the *Actinomyces* and *Streptomyces* strains grown on ferulic acid as substrate do not produce vanillin or its degradation products as an indirect hint that vanillin is produced (see *Amycolatopsis coloradensis*

DSM 44225, *Streptomyces lividans* TK23 and *Streptomyces violaceoruber*). Ferulic acid is a suitable substrate for analysing the strains' ability to produce vanillin or its degradation products (point 4 above and patent, Example 3, paragraph [0126]). Document D8 thus also shows that not substantially all strains falling within the scope of claim 1 are able of producing vanillin naturally even if grown under suitable conditions.

7.5 The respondent submitted that the observed inability of certain *Actinomycetales* strains to produce vanillin in documents D5 and D8 provided no absolute proof that not substantially all strains falling within the scope of claim 1 were capable of naturally producing vanillin.

7.6 While the respondent is right in so far as these documents provide no absolute proof, they consistently disclose that a substantial percentage of strains falling within the scope of claim 1 are unable to naturally produce vanillin. This is also what the skilled person would expect since the strains of claim 1 are not required to contain an endogenous *vr* gene, let alone endogenous functional genes required for the biosynthesis of vanillin. The mere presence of a non-functional *vr* gene as defined in claim 1 in a strain does not enable this strain to produce vanillin because VR enzymes degrade vanillin but do not synthesise it. The production of vanillin requires the presence of other enzymes (e.g. patent, Figure 1). Consequently, all wild-type or recombinant non-naturally vanillin producer strains remain non-producers irrespective of the presence of a non-functional *vr1* to *vr5* gene.

7.7 Moreover, although the respondent asserts that substantially all strains falling within the scope of claim 1 produce vanillin, evidence thereof is missing.

This, however, would be required in support of the respondent's position since evidence to the contrary exists (documents D5 and D8 above).

- 7.8 In view of the considerations above, it has to be concluded that claim 1 encompasses as an embodiment recombinant non-vanillin producing strains of the order *Actinomycetales*. This embodiment will be dealt with in the following under inventive step.

Inventive step

Closest prior art and technical problem to be solved

8. While the opposition division and the appellant considered documents D9 and D11 as the closest prior art, the respondent favoured document D5.
9. However, a claimed invention must be non-obvious having regard to any prior art and, if an inventive step is to be denied, the choice of starting point needs no specific justification (see Case Law of the Boards of Appeal of the EPO, 10th edition 2022, ("Case Law"), I.D.3.1). It follows from this that it is irrelevant whether the technical teaching in document D5 could be seen as being "closer" to the claimed subject-matter than the teaching in documents D9 or D11 (see e.g. T 967/97, Catchword II and Reasons 3.2).
10. Since the subject matter of claim 1 lacks an inventive step over the teaching of documents D9 and D11 (as shown below), there is no need to deal with document D5 as alternative starting point for inventive step.
11. Documents D9 or D11 disclose a recombinant *Amycolatopsis* ATCC 39116 strain with a deleted *vdh* gene

used for the production of vanillin (see document D9, abstract and document D11, abstract and page 4, fourth paragraph). The *Amycolatopsis* ATCC 39116 strain disclosed in these two documents is mentioned in claim 3 as granted too and, hence, belongs to the order of *Actinomycetales*.

12. The contents of documents D9 and D11 overlap to a large degree. Thus, in line with the decision under appeal (point 21.2), the assessment of inventive step can be restricted in the following to document D11.
13. It was uncontested that a recombinant strain as defined in claim 1 was distinguished from the *Amycolatopsis* ATCC 39116 mutant strain of document D11 in the presence of at least one non-functional vr1 to vr5 gene.
14. The opposition division held that the effect ascribable to this distinguishing feature was the improved production of vanillin compared to the wild-type *Amycolatopsis* strain ATCC 39116, due the presence of a reduced activity of at least one of the vanillin reductases enzymes VR1 to VR5 encoded by the respective non-functional vr1 to vr5 gene. There were, however, no data available that compared the vanillin production of the mutant *Amycolatopsis* strain disclosed in document D11 with that of a mutant *Amycolatopsis* strain having at least one non-functional vr gene so that the objective technical problem was formulated as the provision of a further (i.e. alternative) strain of the order of *Actinomycetales* suitable for the production of vanillin (decision under appeal, points 22.1 to 22.3).
15. In view of the board's claim interpretation that claim 1 comprises as embodiments non-vanillin producing

recombinant *Actinomycetales* strains (point 7.8 above), the respondent, at oral proceedings, formulated the objective technical problem as the provision of an alternative recombinant strain belonging to the order of *Actinomycetales*. The board shares this view.

16. The recombinant strain defined in claim 1 solves this problem. In particular, because the sequences of the *vr1* to *vr5* genes are mentioned in claim 1, and it belongs to the skilled person's common general knowledge how to render these genes non-functional.

Obviousness

17. It remains to be assessed whether or not the skilled person starting from the *Amycolatopsis* strain ATCC 39116 containing a deleted (i.e. non-functional) *vdh* gene in document D11 in view of the technical problem defined above would have arrived in an obvious manner at the claimed recombinant strains.
18. It was uncontested that the complete genomic sequence of the *Amycolatopsis* strain ATCC 39116 was publicly available at the priority date of the patent in suit. Moreover it was uncontested that means for rendering known sequences encoding a gene non-functional belonged to the skilled person's common general knowledge. Thus, at the relevant filing date of the patent the nucleic acid sequences of all genes of the *Amycolatopsis* strain ATCC 39116 were at the skilled person's disposal and isolated genes thereof could be rendered non-functional by standard means.
19. As a consequence thereof, the provision of an alternative recombinant strain with at least one non-functional *vr1* to *vr5* gene does not amount to more than

an arbitrary choice from a number of different equal solutions, i.e. the provision of further recombinant *Actinomycetales* strains comprising at least one non-functional gene, each of which would be obvious to the skilled person.

20. Contrary to the respondent's view, in cases involving an arbitrary selection, the prior art must not provide an incentive for the skilled person for selecting the particular solution claimed. Instead, all possible solutions (here non-functional *vr1* to *vr5* genes) have to be regarded as being equally suitable and obvious candidates for solving the objective technical problem defined above. As a consequence, all genes known in *Amycolatopsis* strain ATCC 39116 and being made non-functional by standard means, and being comprised in a recombinant *Actinomycetales* strain are obvious for the skilled person (Case Law, I.D.9.21.9 a)).
21. Therefore, the subject-matter of claim 1 as granted does not meet the requirements of Articles 100(a) and 56 EPC.

Auxiliary requests 1 to 11

22. Claim 1 of auxiliary request 1 when compared to claim 1 of the main request has been limited to recombinant strains of "*the genus Amycolatopsis or Streptomyces*".
23. Claim 1 of auxiliary request 2 when compared to claim 1 of the main request has been limited in using genes or enzymes having "*at least 90%*" sequence identity to the respective sequences of SEQ ID NO 1 to 10.
24. Claim 1 of auxiliary request 3 combines the limitations of claims 1 of auxiliary requests 1 and 2.

25. Claim 1 of auxiliary request 4 when compared to claim 1 of the main request has been limited in using "at least two genes" encoding non-functional VR enzymes.
26. Claim 1 of auxiliary request 5 combines the limitations of claims 1 of auxiliary requests 1 and 4.
27. Claim 1 of auxiliary request 6 combines the limitations of claims 1 of auxiliary requests 2 and 4.
28. Claim 1 of auxiliary request 7 combines the limitations of claims 1 of auxiliary requests 3 and 4.
29. Claim 1 of auxiliary request 8 when compared to claim 1 of the main request has been limited in using "five genes" encoding non-functional VR enzymes.
30. Claim 1 of auxiliary request 9 combines the limitations of claims 1 of auxiliary requests 1 and 8.
31. Claim 1 of auxiliary request 10 combines the limitations of claims 1 of auxiliary requests 2 and 8.
32. Claim 1 of auxiliary request 11 combines the limitations of claims 1 of auxiliary requests 3 and 8.

Inventive step

33. The limitation of claim 1 to strains of "*the genus Amycolatopsis or Streptomyces*" in auxiliary requests 1, 3, 5, 7, 9 and 11 does not overcome the issue that not all strains falling within these two genera are naturally vanillin producers (points 7.3, 7.4 and 7.6 above).

34. Further, the inactivation of two vr genes (claim 1 of auxiliary requests 4 to 7), or of all vr1 to vr5 genes (claim 1 of auxiliary requests 8 to 11) has no technical effect in a non-vanillin producing strain either.
35. Thus, the conclusions as to a lack of inventive step set out above for claim 1 as granted (main request) likewise apply for the subject-matter of claim 1 of auxiliary requests 1 to 11 (Article 56 EPC).

Auxiliary requests 12 and 13

Admittance and consideration in the appeal proceedings

36. Pursuant to Article 13(2) RPBA, any amendment to a party's appeal case after notification of a summons to oral proceedings is not to be taken into account unless there are exceptional circumstances justified with cogent reasons by the party concerned. Article 13(2) RPBA implements the third level of the convergent approach applicable in appeal proceedings and imposes the most stringent limitations on a party to amend their appeal case at an advanced stage of the proceedings (document CA/3/19, section VI, Explanatory remarks on Article 13(2) RPBA, in Supplementary publication 2, OJ EPO 2020). Exceptional circumstances are new or unforeseen developments in the appeal proceedings which lie outside the sphere of influence of the party affected by them, such as new objections raised by the board or another party (Case Law, V.A. 4.5.1).
37. New auxiliary requests 12 and 13 were filed for the first time at the oral proceedings before the board. The respondent argued in support of their admittance

that the amendments were a reaction to the board's communication and that the amended claims 1 of both claim sets were derived from the other claims as granted, in particular, from claim 12 as granted for auxiliary request 12 and from claim 3 as granted for auxiliary request 13. The subject-matter claimed in auxiliary requests 12 and 13 was thus already on file and did not represent a fresh case. Moreover since the amendments were known, the appellant was also not taken by surprise and their submission at the oral proceedings did not affect procedural economy.

38. However, the submission of auxiliary requests 12 and 13 only at the oral proceedings as a reaction to objections that were on file since the first instance proceedings cannot represent exceptional circumstances that could justify this late reaction. These objections were also maintained by the appellant in their statement of grounds of appeal. Since therefore the objections were not brought up by the board, the submission of these new auxiliary requests cannot be justified as a reaction to the board's preliminary opinion either. In addition, procedural economy could also not provide any reason for the respondent not to file auxiliary requests 12 and 13 at an earlier stage. The issue of whether or not the appellant was taken by surprise does also not relate to the question whether exceptional circumstances have prevented the respondent from filing auxiliary requests 12 and 13 earlier, and is thus irrelevant as well.
39. Accordingly, new auxiliary requests 12 and 13 could not be admitted and considered in 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 Chair:



L. Stridde

T. Sommerfeld

Decision electronically authenticated