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Datasheet for the decision of 19 August 2025

Case Number: T 1005/23 - 3.3.04

Application Number: 18214396.6

Publication Number: 3482770

IPC: A61K39/09

Language of the proceedings: EN

Title of invention:
Immunogenic Compositions

Patent Proprietor:
GlaxoSmithKline Biologicals S.A.

Opponent:
Pfizer Inc.

Headword:
Immunogenic Compositions/GSK

Relevant legal provisions:
EPC Art. 76(1)

Keyword:
Divisional application - subject-matter extends beyond content of earlier application (yes)

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Case Number: T 1005/23 - 3.3.04

D E C I S I O N
of Technical Board of Appeal 3.3.04
of 19 August 2025

Appellant: (Opponent)	Pfizer Inc. 66 Hudson Boulevard East New York, NY 10001-2192 (US)
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Respondent: (Patent Proprietor)	GlaxoSmithKline Biologicals S.A. Rue de l'Institut, 89 1330 Rixensart (BE)
Representative:	Racine, Sophie Christiane Carol GSK Legal & Compliance - Global Patents 79 New Oxford Street London WC1A 1DG (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 31 March 2023 rejecting the opposition filed against European patent No. 3 482 770 pursuant to Article 101(2) EPC**

Composition of the Board:

Chairman	B. Rutz
Members:	A. Chakravarty
	M. Blasi

Summary of Facts and Submissions

I. The opponent (appellant) filed an appeal against the opposition division's decision to reject the opposition against European patent No. 3 482 770 (the patent). The patent proprietor is respondent to the opponent's appeal.

II. The patent was granted on European patent application No. 18 214 396.6, which was filed as a divisional application of earlier, European patent application No. 13 792 601.0, which had been filed as an international application and published under the PCT as WO 2014/053612 (the earlier application).

III. In the decision under appeal, the opposition division considered and dismissed grounds for opposition raised under Article 100(a) EPC, in conjunction with Articles 54 and 56 EPC and under Article 100(b) and (c) EPC.

IV. The appellant submitted a statement of grounds of appeal and the respondent submitted a reply thereto. The appellant submitted a further letter (dated 2 September 2024) in reply to the respondent's reply to the statement of grounds of appeal. The respondent in turn replied to this letter, by further letter dated 18 September 2024.

V. The Board issued summons to oral proceedings and a communication pursuant to Article 15(1) RPBA, setting out its preliminary opinion on some of the issues in the appeal case.

VI. The respondent filed a further letter dated 19 May 2025 in response to the Board's communication. With this letter it resubmitted and reordered its earlier claim requests and newly submitted sets of claims of auxiliary requests 5 to 8.

VII. The claim requests filed with this letter were as follows:

A main request, filed in the proceedings before the opposition division with the letter of 18 February 2022 as auxiliary request 4. It was re-submitted with the reply to the statement of grounds of appeal as auxiliary request 4.

Auxiliary request 1, submitted in the appeal proceedings, with the respondent's letter dated 18 September 2024 as auxiliary request 7.

Auxiliary request 2, filed in the proceedings before the opposition division with the letter of 18 February 2022 as auxiliary request 5. It was resubmitted with the reply to statement of grounds of appeal as auxiliary request 5.

Auxiliary request 3, submitted in the appeal proceedings, with the respondent's letter dated 18 September 2024 as auxiliary request 8.

Auxiliary request 4, submitted as auxiliary request 7 with the reply to the statement of grounds of appeal.

Auxiliary requests 5 to 8, all submitted with the letter dated 19 May 2025.

VIII. Claim of the main request reads:

"1. An immunogenic composition comprising:
a) a conjugate that is a capsular saccharide from GBS serotype Ia conjugated to CRM197;
b) a conjugate that is a capsular saccharide from GBS serotype Ib conjugated to CRM197;
c) a conjugate that is a capsular saccharide from GBS serotype III conjugated to CRM197;
d) a conjugate that is a capsular saccharide from GBS serotype II conjugated to CRM197; and
e) a conjugate that is a capsular saccharide from GBS serotype V conjugated to CRM197 wherein the capsular saccharide from GBS serotype V has a NeuNAc content of greater than 90%, for example greater than 95%, when compared to native GBS serotype V polysaccharide wherein the NeuNAc content is considered to be about 100%".

Auxiliary requests

IX. Claim 1 of auxiliary request 1 is the same as claim 1 of the main request, except that "for example greater than 95%" is deleted.

Claim 1 of auxiliary request 2 differs from claim 1 of the main request in that "has a NeuNAc content of greater than 90%, for example greater than 95%" is replaced by "has a NeuNAc content of about 100%"

Claim 1 of auxiliary request 3 differs from claim 1 of the main request in that "has a NeuNAc content of greater than 90%, for example greater than 95%" is replaced by "has a NeuNAc content of 100%".

Claim 1 of auxiliary requests 4 and 5 is the same as claim 1 of the main request.

Claim 1 of auxiliary request 6 differs from claim 1 of the main request in that it includes the additional feature "and wherein the composition is a vaccine".

Claim 1 of auxiliary request 7 differs from claim 1 of the main request in that it includes the additional feature "and wherein each GBS capsular saccharide is present at an amount from 1 to 30 µg per unit dose".

Claim 1 of auxiliary request 8 differs from claim 1 of the main request in that it includes the additional feature "wherein each GBS capsular saccharide is present at an amount between 1 to 30 µg per unit dose, and wherein the composition is a vaccine".

X. The following document is referred to in this decision.

D4: Wessels, M.R. *et al.*, The Journal of Infectious Diseases (1995), 171, 879 to 884.

XI. The appellant's submissions are summarised as follows:

Main Request - claim 1

Extension beyond the content of the earlier application as filed (Article 76(1) EPC)

Claim 1 of the main request contravened Article 76(1) EPC due to the introduction of the feature relating to the NeuNAc (sialic acid) content of the GBS serotype V capsular saccharide conjugate. Specifically, the only passage in the earlier application relied on by the respondent as a basis for

the feature "e) a GBS serotype V having a NeuNAc content of greater than 95% [...] when compared to native GBS serotype V polysaccharide wherein the NeuNAc content is considered to be about 100%", was on page 4, lines 3 to 7 of the application as filed. However, this passage described unconjugated saccharides, whereas the claim concerned GBS serotype V polysaccharide conjugated to CRM197.

Conjugation of the GBS capsular saccharide to CRM197 involved chemical modification, specifically oxidation of the sialic acid residues, reducing the sialic acid content of the saccharide. This was because conjugation by reductive amination required the generation of an aldehyde group by oxidation (e.g. periodate oxidation) of a portion (e.g. between 5 and 40%, particularly between 10 and 30%, preferably about 20%) of the saccharide's sialic acid residues (see passage bridging pages 5 and 6 of the earlier application).

Documents D4 and D12 also described the conversion of sialic acid to 5-acetimido-3,5-dideoxy-D-galactosyloctulosonic acid during oxidation. Thus, the NeuNAc content of the conjugated saccharide differed from that of the unconjugated starting material.

Moreover, taking the sialic acid residues used in conjugation into account when expressing the sialylation level of the saccharide made no sense in the context of the invention, because these residues could no longer contribute to the immunogenicity of the molecule.

The earlier application as filed did not directly and unambiguously disclose an immunogenic composition in which the capsular saccharide from GBS serotype V has a

NeuNAc content of greater than 90%, for example greater than 95%, when compared to native GBS serotype V polysaccharide wherein the NeuNAc content is considered to be about 100%.

XII. The respondent's submissions are summarised as follows:

Main Request - claim 1
Extension beyond the content of the earlier application as filed (Article 76(1) EPC)

A direct and unambiguous basis for the NeuNAc content feature in claim 1 was to be found in the earlier application, specifically on page 4, lines 3 to 7, which disclosed a range of NeuNAc contents for the GBS serotype V capsular saccharide. This passage was located in a section entitled '*The capsular polysaccharide*', and was explicitly linked to conjugation by the statement that the polysaccharides '*may be used for conjugation to a carrier protein, as described below*' (page 4, lines 25 and 26). This section clearly related to both the conjugated and the unconjugated capsular saccharide. Indeed, the process of conjugation made no difference to the sialylation level (percentage), which was the same in capsular saccharide conjugated to CRM197 as in native, fully sialylated, GBS capsular saccharide. This was because the sialyl residue was not removed during the conjugation process, in contrast to the desialylation described e.g. in Study 7 (pages 26 and 27 of the earlier application). That the earlier application disclosed a capsular saccharide from GBS serotype V conjugated to CRM197 was also to be taken from page 7 lines 15 to 20 and page 1, lines 19 to 23.

In summary, although oxidation modified the chemical structure of sialic acid residues, it did not remove them. The NeuNAc content feature in the claim referred to the proportion of sialic acid residues retained, including those that had been oxidised, because oxidation was distinct from desialylation. Thus, the passage on page 4 of the earlier application provided a direct and unambiguous disclosure of the claimed subject-matter, as had been held by the opposition division in its decision.

XIII. Oral proceedings before the Board were held as scheduled. At the end of the oral proceedings the Chairman announced the Board's decision.

Requests

XIV. The appellant requested that the decision under appeal be set aside and that the patent be revoked.

The appellant also requested that auxiliary requests 1, 3, 4, 5 to 8 as filed with letter dated 19 May 2025 not be admitted into the appeal proceedings and that documents D9 to D15, D21 to D23 and D27 to D30 be admitted into the appeal proceedings.

XV. The respondent requested that the patent be maintained in amended form on the basis of the claims of the main request, or one of auxiliary requests 1 to 8 as filed with the respondent's submission dated 19 May 2025.

The respondent also requested that documents D9 to D12, D14, D15, D22 and D23 as well as the new inventive step arguments based upon combining D1 with D9, D10 and D22 not be admitted into the appeal proceedings; that documents D16 to D20 and D24 to D26 be admitted, should

any of these documents or arguments be admitted; that documents D27 to D30 not be admitted and that document D31 be admitted, should documents D27 and D28 be admitted.

Reasons for the Decision

Admittance of documents

1. No decision was taken on the admittance of documents because this was not necessary for the Board's decision in the case, which is solely concerned with Article 76(1) EPC.

Main Request - claim 1

Extension beyond the content of the earlier application as filed (Article 76(1) EPC)

2. The patent in suit was filed as a divisional application of an earlier application. The appellant raised an objection under Article 76(1) EPC that the subject-matter of claim 1 of the main request extended beyond the content of the earlier application as filed. As noted by the opposition division, the text of the application as filed of the patent in suit consists of the description, claims and drawings of the earlier (parent) application as filed, with the claims of the earlier application present as 'Embodiments' in the description and new claims having been added.

3. Since this decision only concerns compliance with Article 76(1) EPC, reference for disclosure is made to the earlier application as filed, represented by WO 2014/053612 A1.

4. The appellant objected in particular to the part of the claim which defines the level of sialylation of the capsular saccharide from GBS serotype V conjugated to CRM197: "the capsular saccharide from GBS serotype V has a NeuNAc content of greater than 90%, for example greater than 95%, when compared to native GBS serotype V polysaccharide wherein the NeuNAc content is considered to be about 100%".

Claim construction

5. The feature "a conjugate that is a capsular saccharide from GBS serotype V conjugated to CRM197 wherein the capsular saccharide from GBS serotype V has a NeuNAc content of greater than 90%, for example greater than 95%, when compared to native GBS serotype V polysaccharide wherein the NeuNAc content is considered to be about 100%" provides a definition of the level of sialylation of the capsular saccharide from GBS serotype V when it is conjugated to CRM197. This level is defined by reference to the native, i.e. unconjugated, GBS serotype V polysaccharide, whose NeuNAc content is considered to be about 100%.

6. The first paragraph on page 4 of the earlier application concerns the degree of sialic acid oxidation of the GBS serotype V capsular polysaccharide. It falls within a section of the description beginning on page 2, headed "*The capsular saccharide*", which starts with the following text "*The invention is based on the capsular saccharide of* Streptococcus agalactiae*. The capsular saccharide is covalently linked to the peptidoglycan backbone of GBS, and is distinct from the group B antigen, which is another saccharide that is attached to the peptidoglycan backbone*". The section goes on to

describe the chemical structure of the various GBS capsular saccharides and states that "*The saccharide may be chemically modified relative to the capsular saccharide as found in nature*" (page 3, line 18). A modification of the serotype V capsular saccharide is disclosed as follows *"For example, a serotype V capsular saccharide that has been substantially desialylated as described in refs. 13 and 14 can be useful. Desialylated GBS serotype V capsular saccharide may be prepared by treating purified GBS serotype V capsular saccharide under mildly acidic conditions (e.g. 0.1M sulphuric acid at 80°C for 60 minutes) or by treatment with neuraminidase, as described in reference 13. A preferred method for preparing desialylated GBS serotype V capsular saccharide is by treating the purified saccharide with 1M acetic acid at 81°C+/-3C° for 2h*".

7. It is apparent that this paragraph describes a desialylation process that is carried out on the native saccharide prior to conjugation. This interpretation is further supported by the fact that a section entitled "*Conjugation*" follows on page 5.

8. While claim 1 does not prescribe any particular process for the conjugation of GBS saccharides to CRM197, the processes described in this section are certainly among those known to the skilled person, and the products represent embodiments of the claimed subject-matter.

9. The passage entitled "*Conjugation*" discloses processes for conjugating a GBS serotype V saccharide to a carrier protein. It envisages the employment of "*the typical prior art process for GBS saccharide conjugation*" which "*...involves reductive amination of a purified saccharide to a carrier protein such as*

tetanus toxoid (TT) or CRM197" (page 5, lines 30 to 32. It is stated that "*As GBS capsular saccharides do not include an aldehyde group in their natural form then this is typically generated before conjugation by oxidation (e.g. periodate oxidation) of a portion (e.g. between 5 and 40%, particularly between 10 and 30%, preferably about 20%) of the saccharide's sialic acid residues*" (page 5, line 33, to page 6, line 3). From this it is clear that in this embodiment, the GBS capsular saccharides loses a certain number of sialic acid residues as a consequence of the conjugation process. Conjugates generated by oxidation as disclosed in the passage cited above are thus embodiments of the claimed composition. However, a conjugate prepared by this process cannot have 100% of the sialic acid residues present in native, untreated GBS saccharide because the conjugation process will result in loss of sialic acid residues.

10. Accordingly, the first paragraph on page 4 of the earlier application cannot provide basis for the feature "e) a conjugate that is a capsular saccharide from GBS serotype V conjugated to CRM197 wherein the capsular saccharide from GBS serotype V has a NeuNAc content of greater than 90%, for example greater than 95%, when compared to native GBS serotype V polysaccharide wherein the NeuNAc content is considered to be about 100%" because this disclosure can only be understood as relating to the NeuNAc content of the GBS serotype V capsular polysaccharide before conjugation, i.e. it does not account for further desialylation which occurs as a result of the conjugation process.

11. Although not relied on as a basis for the disputed feature by the respondent, the Board notes that "*Study 8*" on page 28 of the earlier application does

relate to "*Monovalent lots of Polysaccharide* [V]*-CRM197 conjugates with different sialic acid content, from 100% to 25%*" (page 28, lines 6 to 7). However, Study 8 does not express the sialic acid content in these conjugates in relation to native GBS serotype V polysaccharide wherein the NeuNAc content is considered to be about 100%, but discloses that they "*were produced by treatment of native conjugates in mild acidic conditions*" (page 28, lines 7 to 8). In the preceding "*Study 7*" it is furthermore disclosed that "*GBS conjugates were desialylated by treatment with deuterated sodium acetate. Sialic acid content was monitored by NMR technology*". Since polysaccharide V-CRM197 conjugates were desialylated, the percentages expressed in Study 8, must be understood as being in relation to the GBS native conjugate prior to desialylation representing 100% sialylation in this example. Study 8 therefore illustrates that for desialylation levels within the conjugate, a different reference than the one set out in claim 1 is used, namely the conjugate prior to sialylation, not the unconjugated native GBS saccharide.

12. The respondent also argued that the disclosure in the first paragraph of page 4 of the earlier application related to both conjugated and unconjugated GBS saccharides. In its view, conjugation was not to be equated with desialylation. Desialylated GBS serotype V capsular saccharide was prepared as described on page 3, lines 27 to 34 of the earlier application. This chemistry effectively removed the sialyl residues. In contrast, the conjugation reaction largely left the sialyl residue intact.

13. The Board is not persuaded by this line of argument. Instead, it agrees with the appellant's position that

the oxidation of a portion of the saccharide's sialic acid residues to generate aldehyde groups (see passage bridging pages 5 and 6), means that the former sialic acid is now a different chemical moiety (5-acetamido-3.5-dideoxy-D-galactosyloctulosonic acid; see D4, page 881, left-hand column, first paragraph). The Board also agrees with the appellant that, in the context of the effect of sialic acid residues on the immunogenicity of the conjugate, only the unconjugated residues would be expected to play a role and therefore including conjugated former sialic acid residues within the meaning of paragraph 1 of page 4 of the earlier application is not what the skilled person would have done.

14. In view of the above considerations, it is concluded that the subject-matter of claim 1 extends beyond the content of the earlier application as filed (Article 76(1) EPC).

Auxiliary requests

15. The Board admitted all auxiliary requests into proceedings for reasons of procedural economy, recognising that this would not have an adverse effect on the appellant.

16. None of the sets of claims of the auxiliary requests meets the requirements of Article 76(1) EPC because in all requests part e) of claim 1 contains the same language as claim 1 of the main request, which as been found not allowable, i.e. that the capsular saccharide from GBS serotype V conjugated to CRM197 is defined as having a NeuNAc content expressed as a certain percentage "compared to native GBS serotype V

polysaccharide wherein the NeuNAc content is considered to be about 100%".

17. None of the claim requests is allowable.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

I. Aperribay B. Rutz

Decision electronically authenticated