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**Datasheet for the decision
of 15 February 2011**

Case Number: T 0633/08 - 3.3.09

Application Number: 00941153.9

Publication Number: 1179984

IPC: A23K 1/16

Language of the proceedings: EN

Title of invention:

Process for manufacturing a product for enhancing immune response in companion animals using a combination of antioxidants

Patentee:

THE IAMS COMPANY

Opponent:

NESTEC S.A.

Headword:

-

Relevant legal provisions:

EPC Art. 123(2), 83, 54, 56

Keyword:

"Amendments - added subject-matter (yes, main request)"

"Disclosure - sufficiency (yes, auxiliary request 1)"

"Novelty (yes, auxiliary request 1)"

"Inventive step (yes, auxiliary request 1)"

Decisions cited:

-

Catchword:

-



Case Number: T 0633/08 - 3.3.09

DECISION
of the Technical Board of Appeal 3.3.09
of 15 February 2011

Appellant: NESTEC S.A.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 25 January 2008
rejecting the opposition filed against European
patent No. 1179984 pursuant to Article 101(2)
EPC.

Composition of the Board:

Chairman: W. Sieber
Members: M. O. Müller
K. Garnett

Summary of Facts and Submissions

- I. This is an appeal by the opponent against the decision of the opposition division to reject the opposition against European patent No. 1 179 984.
- II. The opponent had requested revocation of the patent in its entirety on the grounds that the claimed subject-matter was neither novel nor inventive (Article 100(a) EPC), that the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art (Article 100(b) EPC) and that the subject-matter of the patent extended beyond the content of the application as filed (Article 100(c) EPC).

The documents cited during opposition proceedings included:

D1: WO 00/16792 A1;

D2: WO 00/44375 A1;

D3: WO 98/44808 A2;

D4: P. G. Reddy et al, "Vitamin E is Immunostimulatory in Calves", J Dairy Sci 70, 1987, pages 993-999;
and

D5: A. Haq et al, "Effect of β -Carotene, Canthaxanthin, Lutein, and Vitamin E on Neonatal Immunity of Chicks When Supplemented in the Broiler Breeder Diets", Poultry Science 75, 1996, pages 1092-1097.

III. The opposition division's decision, which was announced orally on 14 December 2007 and issued in writing on 25 January 2008, was based on the patent as granted, which contained 10 claims of which the four independent claims 1 and 5 - 7 read as follows:

"1. The use of a pet food composition containing a combination of vitamin E, lutein and β -carotene in the manufacture of a pet food product for use in enhancing immune response in a companion animal, wherein the pet food product comprises from 4% to 20% total dietary fibre."

"5. The use of a pet food composition containing a combination of vitamin E, lutein and β -carotene in the manufacture of a pet food product for optimising immune cells in a dog."

"6. The use of a pet food composition containing a combination of vitamin E, lutein and β -carotene in the manufacture of a pet food product for optimising vaccine recognition in a dog."

"7. A pet food composition for enhancing immune response in a companion animal comprising a combination of vitamin E, lutein and β -carotene, wherein said composition comprises from 4% to 20% total dietary fibre."

IV. The opposition division's position essentially was as follows:

The feature that the pet food product comprised from 4% to 20% total dietary fibre incorporated into claims 1 and 7 during examination did not contravene Article 100(c) EPC. More particularly, page 3, lines 18-20 of the application as filed interpreted together with the next sentence on page 3 lines 20-21 led to the conclusion that dietary fibre, fat and crude protein were not always to be combined and hence dietary fibres could be present in the food product alone.

The opposed patent was sufficiently disclosed. In particular, paragraph [0006] of the opposed patent provided sufficient guidance as to how to select appropriate amounts of each of the components referred to in claim 1 of the opposed patent.

The opposed patent was novel over D1 and D2. Neither of these documents disclosed an amount of 4 to 20% dietary fibre as required by claims 1 and 7 of the opposed patent or any of the specific uses required by claims 5 or 6 in combination with the type of animal as referred to in these claims.

Furthermore, the opposed patent was inventive. D3 represented the closest prior art. The objective technical problem was the provision of a composition acting on three complementary aspects of the immune response in a companion animal. The example of the opposed patent demonstrated that this problem was solved. D3 did not suggest the combination of β -carotene with either vitamin E or lutein, or both. D5 concerned neonatal chicks, which was a completely different field than that of the contested patent. Moreover, there was no indication that lutein and β -

carotene should be combined to act complementary on different parts of the immune system.

V. On 25 March 2008, the appellant (opponent) filed a notice of appeal against the above decision and paid the prescribed fee on the same day. A statement setting out the grounds of appeal was filed on 21 May 2008.

VI. By letter of 17 October 2008, the respondent (proprietor) filed its response to the appeal together with auxiliary requests 1-5. A reaction thereto was filed by the appellant with letter of 30 December 2008.

VII. In response to the annex to the summons to oral proceedings, the respondent filed, by letter of 10 December 2010, new auxiliary requests 1, 2 and 6-11 together with

D8: Declaration of M. G. Hayek; and

D9: Declaration of B. P. Chew.

The originals of these declarations were filed with letter of 23 December 2010.

VIII. With letter of 31 January 2011, the appellant filed

D10: Declaration of Y. Pan.

IX. With letter of 11 February 2011, the respondent withdrew the main request and auxiliary requests 1-4, made auxiliary request 5 to its new main request and renumbered auxiliary requests 6-11 as auxiliary requests 1-6, respectively.

Independent claims 1 and 6 of the main request read as follows:

"1. The use of a pet food composition containing a combination of Vitamin E, lutein and β -carotene in the manufacture of a pet food product for use in enhancing immune response in a dog, wherein the pet food product comprises from 4% to 20% total dietary fibre."

"6. A pet food composition for enhancing immune response in a dog comprising a combination of vitamin E, lutein and β -carotene, wherein said composition comprises from 4% to 20% total dietary fibre."

Auxiliary request 1 contains the following independent claims:

"1. The use of a pet food composition containing a combination of Vitamin E, lutein and β -carotene in the manufacture of a pet food product for use in enhancing immune response in a dog, wherein the pet food product comprises from 4% to 20% total dietary fibre, 18 to 40% crude protein, and 4 to 30% fat."

"3. The use of a pet food composition containing a combination of vitamin E, lutein and β -carotene in the manufacture of a pet food product for optimising immune cells in a dog."

"4. The use of a pet food composition containing a combination of vitamin E, lutein and β -carotene in the manufacture of a pet food product for optimising vaccine recognition in a dog."

"5. A pet food composition for enhancing immune response in a dog comprising a combination of vitamin E, lutein and β -carotene, wherein said composition comprises from 4% to 20% total dietary fibre, 18 to 40% crude protein, and 4 to 30% fat."

X. On 15 February 2011, oral proceedings were held before the board. The parties maintained their requests already submitted in the written proceedings. The respondent adapted the description to the claims of auxiliary request 1 during the oral proceedings.

XI. The appellant's arguments can be summarized as follows:

The main request did not meet the requirement referred to in Article 100(c) EPC, because the dietary fibre in claims 1 and 6 of the main request was disclosed on page 3, lines 18-20 of the original disclosure only in combination with fat and crude protein. The sentence on page 3, lines 20-21 did not change this as it only implied that the skilled person was free to select any appropriate amount of components provided, however, that the composition contained the protein, fat and total dietary fibre.

The invention underlying auxiliary request 1 was insufficiently disclosed. The opposed patent proved that an enhancement of the immune response as eg required by claim 1 of auxiliary request 1 could not be

achieved over the entire breadth of the claim, in particular not for low vitamin E amounts, and not in old dogs.

The subject-matter of auxiliary request 1 lacked novelty over D1. This document described compositions containing carotenoids including β -carotene and lutein in combination with eg vitamin E and macronutrients, such as fat, proteins and dietary fibre. The latter was present in an amount overlapping with the range required by claims 1 and 5. The composition could be administered to an animal body for immunomodulation which included the enhancement of immune response.

Furthermore, the subject-matter of auxiliary request 1 lacked novelty in view of D2. This document disclosed a diet for dogs and cats comprising vitamin E, lutein and β -carotene. Additional components could be crude protein, fat and dietary fibre. The latter was present in an amount of less than 50%, which overlapped with the range required by claims 1 and 5. D2 further described that the dog or cat food strengthened the immune response.

As to inventive step of the subject-matter of auxiliary request 1, D3 represented the closest prior art. The claimed subject-matter differed from this document by the additional presence of lutein and vitamin E. No experimental data were available comparing a composition containing β -carotene alone with one containing additionally lutein and vitamin E. Furthermore, the respondent's allegation was not correct that the opposed patent proved the achievement of different, complementary effects on the immune

system by way of a combination of the three components β -carotene, lutein and vitamin E. In particular, D3 reported for β -carotene the same effect - and thus not a complementary one - as attributed by the opposed patent to lutein, namely an enhanced T-cell proliferation measured as response to PHA. In conclusion, no benefit and in particular no broadening of the immune response by way of complementary effects had been demonstrated to be achieved by the additional presence of lutein or vitamin E. Additionally, any complementary effects and broadened immune response was not required by the claims and also for this reason could not be taken into account when formulating the objective technical problem. The objective technical problem therefore was the provision of an alternative. The solution to this problem was known from D3 where the immunomodulatory effect of lutein was disclosed and from D4 where beneficial effects of vitamin E on the immune system of dogs were mentioned. The claimed subject-matter thus lacked inventive step.

XII. The respondent's position can be summarized as follows:

The main request did not extend beyond the content of the application as filed. In particular, the original disclosure on page 3, lines 18-20 did not teach the skilled person that fat, crude protein and dietary fibre were technically linked and could only be applied together. On the contrary, the subsequent sentence on page 3, lines 20-21 indicated that specific ratios of these components were not critical.

The invention underlying auxiliary request 1 was sufficiently disclosed. The observation in the opposed

patent of a decreased immune response at a 27 IU/kg vitamin E level was due to the fact that the dogs had previously been fed with a higher vitamin E level of 60 IU/kg. This observation thus could not prove that at low vitamin E levels the enhanced immune response required by claim 1 could not be obtained. Moreover, the claim did not require this enhanced immune response to be caused by vitamin E alone but a combination thereof with lutein and β -carotene. Hence, even if vitamin E alone would not lead to an enhancement of the immune response, this could not prove insufficiency of disclosure.

The subject-matter of auxiliary request 1 was novel. D1 did not disclose the treatment of dogs as required by all claims and did not describe a combination of amounts of crude protein, fat and dietary fibre as required by claims 1 and 5 of auxiliary request 1. D2 did not disclose any therapeutic effects in dogs achieved by the combination of β -carotene, lutein and vitamin E as required by all claims and further did not disclose the amount of dietary fibre as required by claims 1 and 5 of auxiliary request 1.

With regard to inventive step, D3 represented the closest prior art. The distinguishing feature was the additional presence of vitamin E and lutein. Thereby different parts of the immune system were improved and a broader immune response was obtained. This was proven by the experimental section of the opposed patent where T- and B-cell proliferation was achieved by lutein, but not by β -carotene. Contrary to the appellant's allegation, D3 did not prove that β -carotene also enhanced T- and B-cell proliferation, as the response

to PHA in this document did not imply any enhanced T- and B-cell proliferation but an enhanced DTH response. As to lutein, this component was only mentioned in D3 in the background section, and there was no teaching in D3 that lutein would provide any effects complementary with those of β -carotene. Furthermore, the skilled person would not consider the teaching of D5 on lutein as it referred to chickens instead of dogs and the immune response of different species differed vastly. The subject-matter of auxiliary request 1 therefore was inventive.

With regard to the appellant's argument that the effect of a broadened immune response was not required to be present by all claims, it had to be noted that this effect was relevant to novelty as regards D1 and D2, but not to inventive step. In fact, for inventive step, it was the effect achieved by the distinguishing feature, ie the additional presence of lutein and vitamin E that had to be taken into account.

XIII. The appellant (opponent) requested that the decision under appeal be set aside and that the European patent No. 1 179 984 be revoked.

XIV. The respondent (patent proprietor) requested that the decision under appeal be set aside and the patent be maintained on the basis of the request filed as auxiliary request 5 with the letter dated 17 October 2008 (now main request), alternatively on the basis of auxiliary request 6 filed with the letter dated 10 December 2010 (now auxiliary request 1).

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Amendments - Article 100(c) EPC*

Claim 6 of the main request refers to a pet food composition which comprises a combination of vitamin E, lutein and β -carotene together with **4% to 20% total dietary fibre**. The claim does not require the presence of any additional component, and in particular not of crude protein and fat, let alone of 18-40% protein and 4-30% fat.

Contrary to this, 4-20% dietary fibre is disclosed in the application as filed consistently as part of a combination of 4-20% dietary fibre, 18-40% crude protein and 4-30% fat (first sentence on page 3, lines 18-21 and claims 4 and 10). No teaching, let alone a clear and unambiguous one, is present in the application as filed that 4-20% dietary fibre could be separated from the originally disclosed context. In this respect the appellant's allegation does not hold true that such a separation is taught in the next sentence on page 3, lines 18-21. In this sentence, it is mentioned that "no specific ratios or percentages of these [fat, crude protein and dietary fibre] or other nutrients are required" (insertion by the board). Hence, this sentence gives the skilled person the freedom to choose certain amounts and/or ratios of fat, crude protein and dietary fibre, does however not contain any indication that the feature of "4-20%

dietary fibre" could be separated from the remaining components referred to in this sentence.

Any embodiment of claim 6 where the pet food composition contains 4-20% dietary fibre alone consequently represents an extraction of this feature out of its originally disclosed context. The same applies to claim 1, which also contains the feature that the pet food product comprises from 4% to 20% total dietary fibre without requiring the presence of crude protein and/or fat.

Claims 1 and 6 consequently extend beyond the content of the application as filed. The ground of opposition under Article 100(c) EPC therefore prejudices the maintenance of the opposed patent in the form of the main request.

Auxiliary request 1

3. *Amendments - Articles 100(c)/123(2) and 84 EPC*

The appellant did not raise any objections under Articles 100(c)/123(2) or 84 EPC against the claims and adapted description of auxiliary request 1.

The board is satisfied that the claims and the adapted description of this request are based on the application as filed and thus that the requirements of Article 100(c)/123(2) EPC are met. In fact, the amendment to claims 1 and 5 of auxiliary request 1 that the pet food comprises "4% to 20% total dietary fibre, 18 to 40% crude protein, and 4 to 30% fat" overcomes

the objection raised under Article 100(c) EPC against claims 1 and 6 of the main request.

Moreover, the board is equally satisfied that the amendments effected in the claims and adapted description of auxiliary request 1 do not give rise to any lack of clarity and that therefore the requirements of Article 84 EPC are met.

4. *Sufficiency of disclosure*

The appellant argued that an enhancement of the immune response as eg required by claim 1 of auxiliary request 1 could not be achieved over the entire breadth of the claim. More particularly, example 1 on page 3, lines 24-25 of the opposed patent evidenced that young dogs fed with a low amount of vitamin E (27 IU/kg) did not show the required enhancement of the immune response, but on the contrary, exhibited a significant decrease in immune response.

Example 1 on page 3, lines 10-27 of the opposed patent evaluates the influence of vitamin E on twenty young and twenty old Beagles. The dogs were randomly assigned to two groups being fed with either a diet containing 27 IU/kg diet of vitamin E or 280 IU/kg diet of vitamin E. As pointed out by the appellant, the dogs fed with only 27 IU/kg diet of vitamin E indeed exhibited a significant decrease in immune response (measured as ConA and PHA stimulated proliferation). However, this decrease is reported in the example to be due to the fact that prior to the experiment, ie prior to being fed with the 27 IU/kg diet of vitamin E, the dogs had been fed with a commercial chow fed containing 60 IU/kg

diet of vitamin E. Thus, the decrease in immune response occurs due to a reduction of the vitamin E level from 60 IU/kg to 27 IU/kg. So, all that can be deduced from the passage referred to by the appellant is that the immune response at a vitamin E level of 27 IU/kg is less enhanced than at a vitamin E level of 60 IU/kg. This does however not imply that no enhancement of the immune response is achieved at all, as alleged by the appellant. For this reason alone, the appellant's argument must fail.

Moreover, even if the appellant's allegation were correct that low vitamin E amounts do not lead to an enhancement of immune response, this would not imply any insufficiency of disclosure. More particularly, it is pointed out that the above-discussed section of example 1 is only concerned with the effect of vitamin E on dogs, and not with the effect of vitamin E in combination with lutein and/or β -carotene. This experiment does therefore not allow the conclusion to be drawn that the combination of vitamin E with lutein and β -carotene as required by the claims of auxiliary request 1 does not lead to any enhancement of the immune response.

The same holds true for the appellant's second argument that vitamin E does not lead to an enhancement of the immune response in older dogs. More particularly, this argument cannot establish any insufficiency of disclosure either as it does not constitute any proof that such an enhancement cannot be obtained with a combination of vitamin E, lutein and β -carotene.

In conclusion, none of the appellant's arguments convincingly shows that an enhancement of the immune response as required by claim 1 cannot be achieved over the entire breadth of the claim. The board is therefore satisfied that the invention underlying auxiliary request 1 is sufficiently disclosed.

5. *Novelty*

5.1 Novelty was attacked by the appellant on the basis of both D1 and D2.

5.2 D1 discloses pharmacologically and biologically active compositions extracted from carrots and including the extracts of an active carotenoid fraction in combination with micro- and macronutrients (page 5, last paragraph). The extracts are used for the therapeutic or prophylactic treatment of various conditions of the human and animal body, including treatment for immunomodulation (first paragraph on page 11). Apart from β -carotene, the extracts can comprise lutein and vitamin E (example 15).

A therapeutic effect in dogs as required by all claims of auxiliary request 1 is not described in D1. Moreover, D1 does not disclose that any of the effects required by these claims, ie an enhanced immune response, an optimisation of immune cells or an optimised vaccine recognition, can be achieved by way of using a combination of vitamin E, lutein and β -carotene. Finally, the amounts of dietary fibres, fat and crude protein as required by claims 1 and 5 of auxiliary request 1 are not described in D1. Novelty in view of this document thus is to be acknowledged.

5.3 D2 is concerned with a means to overcome the problem of oxidative stress in domestic cats and dogs and provides a method for increasing the plasma vitamin E level in these types of animals (abstract). Preferably, the vitamin E is incorporated into a commercial pet food product or a commercial dietary supplement (page 4, lines 4-5). Useful compositions comprise vitamin E, lutein and β -carotene (pages 10-11). Additional components typically include crude protein, fat and dietary fibre (page 4, lines 26-29 and page 51, lines 10-11). The products are suitable for the treatment of various diseases in dogs or cats, including the optimisation or boosting of the immune response, eg after vaccination (page 13, line 12 through page 14, line 27).

5.3.1 In order to arrive at the subject-matter of any of independent claims 1 or 5 of auxiliary request 1 on the basis of D2, the skilled person would have to select:

- lutein and β -carotene as additional active ingredients of the pet food product out of the numerous additional active ingredients disclosed in D2;
- the optional components fat, crude protein and dietary fibre as further additional components of this product;
- the use of this product to achieve an enhancement of immune response out of the numerous therapeutic uses disclosed in D2; and
- the application of this use to dogs, out of the list of dogs and cats disclosed in D2.

Apart from this fourfold selection, the skilled person would have to choose an amount of dietary fibre within the range required by claims 1 or 5 while the only concrete amount of dietary fibre disclosed in D2 is 2.2 wt% (page 51, lines 10-11), which is below the lower limit of the range required by these claims.

D2 nowhere discloses the above fourfold selection of features, let alone such a selection in combination with a dietary fibre content within the range required by claims 1 or 5. The subject-matter of these claims therefore is novel in view of D2. The same is true for dependent claims 2 and 6.

5.3.2 In order to arrive at the subject-matter of independent claims 3 or 4, the skilled person would have to select:

- lutein and β -carotene as additional active ingredients of the pet food product out of the numerous additional active ingredients disclosed in D2;
- the use of this product to achieve an enhancement of immune response out of the numerous therapeutic uses disclosed in D2;
- an enhancement of the immune response by way of optimising immune cells as required by claim 3 or by way of optimising vaccine recognition as required by claim 4; and
- the application of this therapeutic use to dogs, out of the list of dogs and cats disclosed in D2.

Such a multiple selection is nowhere disclosed in D2, except for examples 17 and 18. These examples are however not contained in the priority documents of D2 and, as the filing date of D2 lies after the filing

date of the opposed patent, do not form prior art with regard to the claimed subject-matter. In fact, the appellant did not raise a novelty objection based on these examples. Novelty of the subject-matter of claims 3 and 4 in view of D2 therefore must be acknowledged.

6. *Inventive step*

6.1 The filing dates of D1 and D2 are after the priority date of the opposed patent. These documents therefore form prior art according to Article 54(3) EPC or, in as far as the priority claims of these documents are not valid, do not form prior art at all. D1 and D2 are thus not relevant for the assessment of inventive step.

6.2 Closest prior art

The opposed patent is directed to the provision of compositions that enhance, ie broaden, the immune response in dogs in the sense that several parts of the immune system of dogs are improved (page 2, lines 3-4 and lines 54-56 of the opposed patent). As a solution to this problem the opposed patent proposes the use of a combination of β -carotene, lutein and vitamin E.

Equally, D3 relates to a pet food supplement for enhancing immune response in cats and dogs (page 1, lines 4-6). As acknowledged by both parties, D3 therefore can be considered to represent the closest prior art.

The pet food supplement of D3 contains β -carotene to enhance immune response (page 2, lines 11-15). The pet food furthermore typically comprises about 30% crude

protein, about 20% fat and about 10% total dietary fibre (page 4, lines 33-35).

A pet food product comprising lutein and vitamin E in addition to β -carotene is not disclosed in D3. As acknowledged by both parties, the claimed subject-matter hence differs from that of D3 in that β -carotene is combined with lutein and furthermore vitamin E.

6.3 Objective technical problem

6.3.1 In a first step, the objective technical problem solved by the first distinguishing feature, namely the combination of β -carotene with lutein, will be analysed.

6.3.2 As evidenced by page 7, line 56 through page 8, line 12 of the opposed patent, the additional presence of lutein in the pet food leads to enhanced T- and B-cell proliferation (measured as proliferative response to the T-cell mitogens PHA and ConA and the B-cell mitogen PWM). Unlike lutein, β -carotene does not enhance T- and B-cell proliferation (expressed as mitogen-induced lymphocyte blastogenesis and IL-2 production, page 5, line 10), but acts on different parts of the immune system, namely the humoral response in terms of antibody (IgG and IgM) production, the numbers of CD4+ and CD8 cells and the DTH response against PHA and vaccine (page 3, line 28 through page 5, line 19 of the opposed patent). Consequently, lutein and β -carotene enhance the immune system in a complementary way and thereby lead to a broadened immune response. The objective technical problem thus is the provision of a composition that leads to an enhancement, ie broadening, of the immune response of dogs such that this response

covers T- and B-cell proliferation in addition to the responses already achieved by β -carotene.

6.3.3 The appellant argued in this context that D3 evidenced on page 10, line 1 that β -carotene led to an enhanced response to PHA, which, according to the appellant, is equivalent to enhanced T- and B-cell proliferation. The effect that was attributed in the opposed patent to lutein in fact was therefore already achieved by β -carotene. Hence, no complementary effects were obtained in the appellant's view and the objective problem therefore could not be seen in the broadening of immune response.

However, as directly follows from page 9, line 35 and page 10, line 4 of D3, the enhanced response to PHA referred to by the appellant clearly does not imply an enhanced T- and B-cell proliferation but an enhanced DTH response, which is the effect also found in the opposed patent for β -carotene. Even more importantly, D3 explicitly confirms that β -carotene does not lead to T- and B-cell proliferation in dogs (measured as mitogen induced lymphocyte blastogenesis and IL-2 production, page 11, lines 3-4). Consequently, the appellant's argument must fail.

6.3.4 During the oral proceedings, the appellant further argued that a broadening of the immune response should not be taken into account when formulating the objective technical problem in view of the fact that the independent claims did not refer to such an effect. However, as acknowledged by the appellant, the distinguishing feature with regard to D3 is the additional presence of inter alia lutein and it is the

effect achieved by the distinguishing feature, in the present case the broadened immune response that includes T- and B-cell proliferation, that is to be taken into account when formulating the objective technical problem. Consequently, this argument of the appellant is not convincing either.

6.4 Obviousness of solution

The only passage of D3 that mentions lutein is on page 1, lines 9-15, which reads as follows:

"Carotenoids are naturally-occurring plant pigments which are absorbed in varying degrees by different species. Common carotenoids include β -carotene, lycopene, lutein, zeaxanthin, and astaxanthin. These carotenoids (the most extensively studied being β -carotene) are known to play an important role in modulating the immune system and enhancing the health of these species".

This passage is a general description of the immunological effect of carotenoids such as lutein. It is however silent about any effect on the immune system of dogs. Even more importantly, this passage does not refer to any effect lutein might have on T- and B-cell proliferation, let alone does it suggest combining lutein with β -carotene to achieve this effect in addition to the effects arrived at by the β -carotene alone.

The skilled person looking for ways to broaden the immune response of dogs such that this response includes T- and B-cell proliferation in addition to the

mechanisms already achieved by the β -carotene would thus not get any motivation from D3 to add lutein to β -carotene. The solution in the claims of auxiliary request 1, ie the use of a combination of β -carotene and lutein (together with vitamin E), thus is not obvious from D3.

The only further document disclosing any effect of lutein on the immune system is D5. However, in this document this effect is only shown in relation to chickens. No information as to the effect of lutein on the immune system of dogs is reported there. As set out in the declaration D8, the immune modulatory effects in birds cannot be extrapolated and presumed to be the same for dogs. More particularly, birds are physiologically very different from dogs and have eg a special organ, called a bursa, involved in immune response that is not present in mammals such as dogs. Hence, the skilled person aiming at a broadening of the immune response in dogs would not have considered the results found in D5 with regard to chickens.

6.5 Inventive step of the subject-matter of auxiliary request 1 with regard to D3, taken alone as well as in combination with D5, therefore can be acknowledged.

In view of this finding, it is not necessary to further discuss the effects achieved (or not achieved) by the second distinguishing feature over D3, namely the combination of vitamin E with β -carotene and lutein.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division with the order to maintain the patent on the basis of:
 - (a) Claims 1 to 6 filed as auxiliary request 6 with letter dated 10 December 2010 (now auxiliary request 1);
 - (b) The amended description pages numbered 2 to 9 as filed during the oral proceedings before the board; and
 - (c) Figures 1 and 2 as granted.

The Registrar:

The Chairman:

B. Atienza Vivancos

W. Sieber