

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL SEARCH REPORT**

(PCT Article 18 and Rules 43 and 44)

|   |   |   |
|---|---|---|
| Applicant's or agent's file reference<br>16439-WO-PCT | <b>FOR FURTHER ACTION</b><br>see Form PCT/ISA/220 as well as, where applicable, item 5 below. |   |
| International application No.<br>PCT/EP2019/079962    | International filing date ( <i>day/month/year</i> )<br>1 November 2019 (01-11-2019)           | (Earliest) Priority Date ( <i>day/month/year</i> )<br>30 November 2018 (30-11-2018) |
| Applicant<br><br>SOCIETE DES PRODUITS NESTLE S.A.     |   |   |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

- the international application in the language in which it was filed  
 a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b.  This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c.  With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2.  **Certain claims were found unsearchable** (See Box No. II)

3.  **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,

- the text is approved as submitted by the applicant  
 the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- the text is approved as submitted by the applicant  
 the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. \_\_\_\_\_  
 as suggested by the applicant  
 as selected by this Authority, because the applicant failed to suggest a figure  
 as selected by this Authority, because this figure better characterizes the invention
- b.  none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2019/079962

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A23L33/00 A23L33/10 A61K31/702  
ADD.  
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED  
Minimum documentation searched (classification system followed by classification symbols)  
A23L A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                          | Relevant to claim No. |
|-----------|---|-----------------------|
| X         | US 6 946 451 B2 (KYOWA HAKKO KOGYO KK [JP]) 20 September 2005 (2005-09-20)                                  | 1-5,7-16              |
| Y         | lines 19-33, paragraph 8; examples 1, 6; tables 1-6, 8, 10,11   | 6                     |
| X         | US 9 636 367 B2 (NESTEC SA [CH]) 2 May 2017 (2017-05-02)  | 1-5,7-16              |
| Y         | claims 1-19; table 2  | 6                     |
| A         | US 2016/296585 A1 (BLANCHER FLORENCE [CH] ET AL) 13 October 2016 (2016-10-13) paragraph [0134]; claims 1-15 | 1-16                  |
| X         | WO 2017/129639 A1 (NESTEC SA [CH]) 3 August 2017 (2017-08-03) page 15, lines 1-7; claims 1-22; examples 1-3 | 1-16                  |
|           | -----<br>-/--   |                       |

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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| Date of the actual completion of the international search<br><b>9 January 2020</b> | Date of mailing of the international search report<br><b>16/01/2020</b> |
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| Name and mailing address of the ISA/<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040,<br>Fax: (+31-70) 340-3016 | Authorized officer<br><b>De Jong, Ellen</b> |
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2019/079962

| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT |   |                       |
|--|---|-----------------------|
| Category*  | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
| X  | US 2017/295838 A1 (DESTAILLATS FREDERIC [CH] ET AL) 19 October 2017 (2017-10-19)  | 1-5,7-16              |
| Y  | paragraph [0051]; claims 1-30   | 6                     |
| X  | WO 2017/129650 A1 (NESTEC SA [CH])<br>3 August 2017 (2017-08-03)<br>claims 1-17   | 1-16                  |
| A  | US 2016/296543 A1 (BRASSART DOMINIQUE [CH] ET AL) 13 October 2016 (2016-10-13)<br>claims 1-20   | 1-16                  |
| A  | WO 2018/215573 A1 (NESTEC SA [CH])<br>29 November 2018 (2018-11-29)<br>paragraphs [0163] - [0195]; claims 1-15  | 1-16                  |
| A  | US 2018/333426 A1 (CHICHOLOWSKI MACIEJ [US] ET AL) 22 November 2018 (2018-11-22)<br>claims 1-20; examples 1-2   | 1-16                  |
| A  | US 2018/104267 A1 (BUCK RACHAEL [US] ET AL) 19 April 2018 (2018-04-19)<br>claims 1-30; examples 1-42  | 1-16                  |
| A  | S. BLAT ET AL: "Does early oligosaccharides consumption affect pancreas maturation",<br>JOURNAL OF DEVELOPMENTAL ORIGINS OF HEALTH AND DISEASE,<br>vol. 6, no. S1,<br>1 January 2015 (2015-01-01), page S13,<br>XP055564034,<br>the whole document  | 1-16                  |
| A  | STOLOVICH-RAIN MIRI ET AL: "Weaning Triggers a Maturation Step of Pancreatic [beta] C",<br>DEVELOPMENTAL CELL, CELL PRESS, US,<br>vol. 32, no. 5,<br>5 February 2015 (2015-02-05), pages 535-545, XP029144916,<br>ISSN: 1534-5807, DOI:<br>10.1016/J.DEVCEL.2015.01.002<br>the whole document           | 1-16                  |
| A  | SUSAN BONNER-WEIR ET AL: "Dynamic development of the pancreas from birth to adulthood",<br>UPSALA JOURNAL OF MEDICAL SCIENCES.,<br>vol. 121, no. 2,<br>21 March 2016 (2016-03-21), pages 155-158,<br>XP055564061,<br>SE<br>ISSN: 0300-9734, DOI:<br>10.3109/03009734.2016.1154906<br>the whole document | 1-16                  |

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2019/079962

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date   |            |
|--|------------------|-------------------------|--------------------|------------|
| US 6946451                             | B2               | 20-09-2005              | AT 305309 T        | 15-10-2005 |
|  |                  |                         | DE 60301677 T2     | 06-07-2006 |
|  |                  |                         | EP 1332759 A1      | 06-08-2003 |
|  |                  |                         | US 2003181401 A1   | 25-09-2003 |
| US 9636367                             | B2               | 02-05-2017              | AU 2012325072 A1   | 13-03-2014 |
|  |                  |                         | BR 112014008657 A2 | 25-04-2017 |
|  |                  |                         | CL 2014000832 A1   | 22-08-2014 |
|  |                  |                         | CN 103889240 A     | 25-06-2014 |
|  |                  |                         | EP 2768314 A1      | 27-08-2014 |
|  |                  |                         | ES 2560023 T3      | 17-02-2016 |
|  |                  |                         | MX 350436 B        | 06-09-2017 |
|  |                  |                         | PL 2768314 T3      | 31-05-2016 |
|  |                  |                         | PT 2768314 E       | 17-02-2016 |
|  |                  |                         | RU 2014119903 A    | 27-11-2015 |
|  |                  |                         | US 2014286909 A1   | 25-09-2014 |
|  |                  |                         | WO 2013057061 A1   | 25-04-2013 |
|  |                  |                         | ZA 201403593 B     | 28-09-2016 |
| US 2016296585                          | A1               | 13-10-2016              | AU 2014356485 A1   | 03-03-2016 |
|  |                  |                         | CN 105578904 A     | 11-05-2016 |
|  |                  |                         | EP 3082472 A1      | 26-10-2016 |
|  |                  |                         | PH 12016500950 A1  | 27-06-2016 |
|  |                  |                         | US 2016296585 A1   | 13-10-2016 |
|  |                  |                         | WO 2015078974 A1   | 04-06-2015 |
| WO 2017129639                          | A1               | 03-08-2017              | AU 2017211953 A1   | 10-05-2018 |
|  |                  |                         | CN 108495634 A     | 04-09-2018 |
|  |                  |                         | EP 3407897 A1      | 05-12-2018 |
|  |                  |                         | PH 12018501325 A1  | 18-02-2019 |
|  |                  |                         | WO 2017129639 A1   | 03-08-2017 |
| US 2017295838                          | A1               | 19-10-2017              | AU 2015323762 A1   | 16-02-2017 |
|  |                  |                         | BR 112017003920 A2 | 12-12-2017 |
|  |                  |                         | CN 106714583 A     | 24-05-2017 |
|  |                  |                         | EP 3197295 A1      | 02-08-2017 |
|  |                  |                         | ES 2725464 T3      | 24-09-2019 |
|  |                  |                         | PH 12017500174 A1  | 10-07-2017 |
|  |                  |                         | RU 2017113997 A    | 25-10-2018 |
|  |                  |                         | US 2017295838 A1   | 19-10-2017 |
|  |                  |                         | WO 2016046294 A1   | 31-03-2016 |
| WO 2017129650                          | A1               | 03-08-2017              | AU 2017211274 A1   | 10-05-2018 |
|  |                  |                         | BR 112018013538 A2 | 04-12-2018 |
|  |                  |                         | CL 2018001825 A1   | 24-08-2018 |
|  |                  |                         | CN 108697721 A     | 23-10-2018 |
|  |                  |                         | EP 3407894 A1      | 05-12-2018 |
|  |                  |                         | PH 12018501328 A1  | 11-02-2019 |
|  |                  |                         | US 2019029303 A1   | 31-01-2019 |
|  |                  |                         | WO 2017129650 A1   | 03-08-2017 |
| US 2016296543                          | A1               | 13-10-2016              | AU 2014350419 A1   | 03-03-2016 |
|  |                  |                         | CL 2016001154 A1   | 23-12-2016 |
|  |                  |                         | CN 105682664 A     | 15-06-2016 |
|  |                  |                         | EP 3082827 A1      | 26-10-2016 |
|  |                  |                         | PH 12016500846 A1  | 13-06-2016 |
|  |                  |                         | RU 2016123459 A    | 18-12-2017 |
|  |                  |                         | US 2016296543 A1   | 13-10-2016 |

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2019/079962

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
|  |                  | WO 2015071131 A1        | 21-05-2015       |
| -----                                  |                  |                         |                  |
| WO 2018215573 A1                       | 29-11-2018       | AU 2018274637 A1        | 26-09-2019       |
|  |                  | WO 2018215573 A1        | 29-11-2018       |
| -----                                  |                  |                         |                  |
| US 2018333426 A1                       | 22-11-2018       | AR 111794 A1            | 21-08-2019       |
|  |                  | US 2018333426 A1        | 22-11-2018       |
|  |                  | WO 2018210807 A1        | 22-11-2018       |
| -----                                  |                  |                         |                  |
| US 2018104267 A1                       | 19-04-2018       | BR 112013016587 A2      | 27-09-2016       |
|  |                  | CA 2822664 A1           | 05-07-2012       |
|  |                  | CN 103369974 A          | 23-10-2013       |
|  |                  | CN 108420076 A          | 21-08-2018       |
|  |                  | EP 2658400 A2           | 06-11-2013       |
|  |                  | MX 352040 B             | 07-11-2017       |
|  |                  | MY 166945 A             | 25-07-2018       |
|  |                  | NZ 613165 A             | 27-02-2015       |
|  |                  | SG 191799 A1            | 30-08-2013       |
|  |                  | US 2012172327 A1        | 05-07-2012       |
|  |                  | US 2014256674 A1        | 11-09-2014       |
|  |                  | US 2018055864 A1        | 01-03-2018       |
|  |                  | US 2018104267 A1        | 19-04-2018       |
|  |                  | US 2018133234 A1        | 17-05-2018       |
|  |                  | US 2018133235 A1        | 17-05-2018       |
|  |                  | US 2018140622 A1        | 24-05-2018       |
|  |                  | US 2018161351 A1        | 14-06-2018       |
|  |                  | US 2018161352 A1        | 14-06-2018       |
|  |                  | US 2018161353 A1        | 14-06-2018       |
|  |                  | US 2018161354 A1        | 14-06-2018       |
|  |                  | US 2018169121 A1        | 21-06-2018       |
|  |                  | WO 2012092157 A2        | 05-07-2012       |
| -----                                  |                  |                         |                  |