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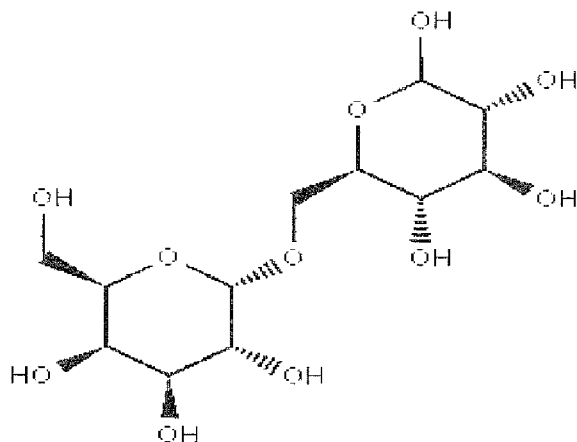
Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: COSMETIC AND PHARMACEUTICAL USES OF SACCHARIDES

Figure 1



(57) Abstract: The present invention provides cosmetic and pharmaceutical compositions and therapies capable of reducing skin pigmentation and valuable in treating and managing disorders of skin pigmentation. The invention uses safe and well tolerated non-digestible oligosaccharides as the active agents providing numerous advantages over the harsh chemicals of previously available compositions.

**Published:****(88) Date of publication of the international search report:**

8 January 2015

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2013/050705

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61K8/60 A61K8/73 A61Q19/02 A61K31/7016
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)

A61K A61Q

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 2003/186934 A1 (RATHJENS ANDREAS [DE] ET AL) 2 October 2003 (2003-10-02) claims; examples	1,2, 5-15, 18-27, 30-38
X	JP 2000 128770 A (KANEBO LTD) 9 May 2000 (2000-05-09) abstract	1,2, 5-15, 18-27, 30-38
X	JP 2004 224762 A (OGAWA & CO LTD) 12 August 2004 (2004-08-12) abstract	1,2, 5-15, 18-27, 30-38

☒ 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

Date of the actual completion of the international search

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Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2013/050705

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

13, 36(completely); 1, 2, 5-12, 14, 15, 18-27, 30-35, 37, 38(partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 13, 36(completely); 1, 2, 5-12, 14, 15, 18-27, 30-35, 37, 38(partially)

A cosmetic method of reducing skin pigmentation or evening skin tone comprising topical application of a cosmetic composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from melibiose, and a cosmetically acceptable carrier, vehicle or excipient. Melibiose or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

2. claims: 1, 2, 5-12, 14, 15, 18-27, 30-35, 37, 38(all partially)

A cosmetic method of reducing skin pigmentation or evening skin tone comprising topical application of a cosmetic composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from raffinose, and a cosmetically acceptable carrier, vehicle or excipient. Raffinose or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

3. claims: 1, 2, 5-12, 14, 15, 18-27, 30-35, 37, 38(all partially)

A cosmetic method of reducing skin pigmentation or evening skin tone comprising topical application of a cosmetic composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from stachyose, and a cosmetically acceptable carrier, vehicle or excipient. Stachyose or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

4. claims: 1, 2, 5-12, 14, 15, 18-27, 30-35, 37, 38(all partially)

A cosmetic method of reducing skin pigmentation or evening skin tone comprising topical application of a cosmetic composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from lactulose, and a cosmetically acceptable carrier, vehicle or excipient. Lactulose or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

5. claims: 1, 2, 5-12, 14, 15, 18-27, 30-35, 37, 38(all partially)

A cosmetic method of reducing skin pigmentation or evening

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

skin tone comprising topical application of a cosmetic composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from a galacto-oligosaccharide, and a cosmetically acceptable carrier, vehicle or excipient. A galacto-oligosaccharide or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

6. claims: 1, 2, 5-12, 14, 15, 18-27, 30-35, 37, 38(all partially)

A cosmetic method of reducing skin pigmentation or evening skin tone comprising topical application of a cosmetic composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from a fructo-oligosaccharide, and a cosmetically acceptable carrier, vehicle or excipient. A fructo-oligosaccharide or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

7. claims: 1, 2, 5-12, 14, 15, 18-27, 30-35, 37, 38(all partially)

A cosmetic method of reducing skin pigmentation or evening skin tone comprising topical application of a cosmetic composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from inulin, and a cosmetically acceptable carrier, vehicle or excipient. Inulin or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

8. claims: 3, 16, 28(completely); 1, 5-12, 14, 18-26, 30-35, 37, 38(partially)

A cosmetic method of reducing skin pigmentation or evening skin tone comprising topical application of a cosmetic composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from carbohydrate that resists hydrolysis in the human small intestine and passes unchanged into the colon, and a cosmetically acceptable carrier, vehicle or excipient. Carbohydrate that resists hydrolysis in the human small intestine and passes unchanged into the colon or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

9. claims: 4, 17, 29(completely); 1, 5-12, 14, 18-26, 30-35, 37, 38(partially)

A cosmetic method of reducing skin pigmentation or evening skin tone comprising topical application of a cosmetic

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

composition to the skin, the cosmetic composition comprising: a non-digestible oligosaccharide (NDO) selected from a carbohydrate classified as dietary fibre by AOAC Method 985.29, and a cosmetically acceptable carrier, vehicle or excipient. a A carbohydrate classified as dietary fibre by AOAC Method 985.29 or composition containing it for use in preventing, treating or managing skin pigmentation such as skin whitening.

10. claims: 39-45

Method of reducing inflammatory cytokine expression or of treating skin inflammation with a non-digestible oligosaccharide (NDO) and non-digestible oligosaccharide for treating skin inflammation.

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2013/050705

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 994 326 A (MATSUDA MICHIO [JP] ET AL) 30 November 1999 (1999-11-30) abstract	1,2, 5-15, 18-27, 30-38
X	US 2004/151684 A1 (MORI NORIKO [JP] ET AL) 5 August 2004 (2004-08-05) paragraphs [0012], [0024]; claims; examples	1,2, 5-15, 18-27, 30-38
X	JP H05 320185 A (HONEN CORP; UNITIKA LTD) 3 December 1993 (1993-12-03) paragraph [0002] abstract	1,2, 5-15, 18-27, 30-38
X	DATABASE GNPD [Online] MINTEL; 1 December 2008 (2008-12-01), "Moisturising Anti-Fatigue Eye Care", XP002728267, Database accession no. 1013896 the whole document	1,2, 5-15, 18-27, 30-38
X	DATABASE GNPD [Online] MINTEL; 1 September 2010 (2010-09-01), "Rich Nourishing Cream", XP002728268, Database accession no. 1395588 the whole document	1,2, 5-15, 18-27, 30-38
X	DATABASE GNPD [Online] MINTEL; 1 October 2008 (2008-10-01), "Radiant Face Sun Protection Cream SPF 30", XP002728269, Database accession no. 982486 the whole document	1,2, 5-15, 18-27, 30-38

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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