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(81) Designated States (*unless otherwise indicated, for every
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AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,
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LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
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WO 2016/156869 A3

(54) Title: ANTI-MICROBIAL COMPOSITION

(57) Abstract: This invention relates to anti-microbial compositions comprising: an amino acid, a derivative of an amino acid, a salt of an amino acid, a salt of a derivative of an amino acid or mixtures thereof; an anti-microbial component comprising two or more anti-microbial quaternary ammonium compounds, or at least one anti-microbial quaternary ammonium compound and chlorhexidine or a salt thereof; and a polar solvent, and to formulations including the anti-microbial compositions. In particular, the invention relates to anti-microbial compositions that can be used on skin.

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2016/050932

A. CLASSIFICATION OF SUBJECT MATTER
INV. A01N33/12 A01N47/44 A01N37/44 A01N39/00 A01P1/00
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)
A01N

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, BIOSIS, CHEM ABS Data, EMBASE, 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	WO 03/061610 A1 (WALKER EDWARD B [US]) 31 July 2003 (2003-07-31)	1-3, 9-11, 14-23, 26-29, 31,33-41
Y	examples C5, E1, E2 claims	1-7, 9-11, 14-41
X	----- WO 2013/061082 A1 (BYOTROL PLC [GB]) 2 May 2013 (2013-05-02)	1-7, 9-11, 14-23, 26-41
Y	claim 11 page 23, lines 22-24 -----	24,25
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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 16 September 2016	Date of mailing of the international search report 29/09/2016
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Galley, Carl

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2016/050932

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 2 536 278 A1 (INSIGHT HEALTH LTD [GB]) 26 December 2012 (2012-12-26) claims	1-7, 9-11, 14-41
X	US 6 656 919 B1 (BAUGH CLARENCE L [US] ET AL) 2 December 2003 (2003-12-02) claims	1-7, 9-11, 14-41
X	US 2004/166082 A1 (URGELL-BELTRAN JOAN BAPTISTA [ES] ET AL) 26 August 2004 (2004-08-26) claims example Formulation 15; tables 1,2	1-7, 9-11, 14-41
A	MASAHIRO TAKEHARA: "Properties and applications of amino acid based surfactants", COLLOIDS AND SURFACES, vol. 38, no. 1, 1 January 1989 (1989-01-01), pages 149-167, XP055282460, NL ISSN: 0166-6622, DOI: 10.1016/0166-6622(89)80151-9 the whole document	1-7, 9-11, 14-41
A	WO 2010/000744 A2 (MIRET LAB [ES]; ROCABAYERA BONVILA XAVIER [ES]; FIGUERAS ROCA SERGI [E] 7 January 2010 (2010-01-07) the whole document	1-7, 9-11, 14-41
A	INFANTE M R ET AL: "A COMPARATIVE STUDY ON SURFACE ACTIVE AND ANTIMICROBIAL PROPERTIES OF SOME NALPHA-LAUROYL-LALPHA, OMEGADIBASIC AMINOACIDS DERIVATIVES//EINE VERGLEICHSTUDIE UEBER OBERFLAECHEAKTIVE UND ANTIMIKROBIELLE EIGENSCHAFTEN EINIGER NALPHA-LAURYL-LALPHA, OMEGA ZWEI", FETTE, SEIFEN, ANSTRICHMITTEL, INDUSTRIEVERLAG VON HERNHAUSSEN KG. HAMBURG, DE, vol. 87, no. 8, 1 August 1985 (1985-08-01) , pages 309-313, XP001087948, the whole document	1-41
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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2016/050932

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>PONS J-L ET AL: "EVALUATION OF ANTIMICROBIAL INTERACTIONS BETWEEN CHLORHEXIDINE, QUATERNARY AMMONIUM COMPOUNDS, PRESERVATIVES AND EXCIPIENTS", JOURNAL OF APPLIED BACTERIOLOGY, BLACKWELL PUBLISHING LTD., OXFORD, GB, vol. 73, 1 January 1992 (1992-01-01), pages 395-400, XP009032023, ISSN: 0021-8847 page 397; table 2 page 399, left-hand column, paragraph 2</p> <p>-----</p>	1-41
Y	<p>US 2001/016589 A1 (MODAK SHANTA [US] ET AL) 23 August 2001 (2001-08-23) claims examples</p> <p>-----</p>	1-41
A	<p>WO 2010/043863 A2 (BYOTROL PLC [GB]; FALDER STEPHEN BRIAN [GB]; FRANCIS THOMAS TREVOR [GB]) 22 April 2010 (2010-04-22) claims</p> <p>-----</p>	1-41

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2016/050932

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
WO 03061610	A1	31-07-2003	CA 2473673 A1	31-07-2003
			US 2004058878 A1	25-03-2004
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			US 2009324737 A1	31-12-2009
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			BR 0114154 A	29-07-2003
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			WO 03013454 A1	20-02-2003
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			EP 2348842 A2	03-08-2011
			ES 2392384 T3	10-12-2012
			JP 2011526593 A	13-10-2011
			RU 2011102291 A	10-08-2012
			US 2011144203 A1	16-06-2011
			WO 2010000744 A2	07-01-2010
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			WO 2010043863 A2	22-04-2010

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2016/050932

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.:

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: 1-7, 9-11, 14-41(all partially)

An anti-microbial composition comprising:(i) an amino acid, a derivative of an amino acid, a salt of an amino acid, or a salt of a derivative of an amino acid or a mixture thereof; (ii) an anti-microbial component comprising two or more anti-microbial quaternary ammonium compounds; and (iii) a polar solvent.

The use of the above composition to substantially reduce or control the formation of microbial colonies on or at a surface.

A method of substantially reducing or controlling the formation of microbial colonies on or at a surface, which method comprises applying the above composition to that surface.

A method of disrupting, preventing or reducing the adhesion and/or attachment of micro-organisms to a surface, which method comprises applying the above composition to that surface.

Various products comprising said antimicrobial composition.

2. claims: 8, 12, 13(completely); 1-7, 9-11, 14-41(partially)

An anti-microbial composition comprising:(i) an amino acid, a derivative of an amino acid, a salt of an amino acid, or a salt of a derivative of an amino acid or a mixture thereof; (ii) an anti-microbial component comprising at least one anti-microbial quaternary ammonium compound and chlorhexidine or a chlorhexidine salt; and (iii) a polar solvent.

The use of the above composition to substantially reduce or control the formation of microbial colonies on or at a surface.

A method of substantially reducing or controlling the formation of microbial colonies on or at a surface, which method comprises applying the above composition to that surface.

A method of disrupting, preventing or reducing the adhesion and/or attachment of micro-organisms to a surface, which method comprises applying the above composition to that surface.

Various products comprising said antimicrobial composition.
