Title: REGULATION OF MAMMALIAN KERATINOUS TISSUE USING PERSONAL CARE COMPOSITIONS COMPRISING CETYL PYRIDINIUM CHLORIDE

Abstract: Personal care composition including a first skin and/or hair care active cetyl pyridinium chloride; and at least one additional skin and/or hair care active selected from the group consisting of tetradecylurea, sugar amine, vitamin B3, retinoids, hydroquinone, peptides, piroctone, dialkaneo hydroxypropyl, hexamidine, salicylic acid, n-acyl amino acid compounds, sunscreen actives, water soluble vitamins, oil soluble vitamins, hesperidin, mustard seed extract, glycyrrhizic acid, glycyrrhetic acid, camostine, Butylnated Hydroxytoluene (BHT) and Butylated Hydroxyanisole (BHA), ergothioneine, vanillin or its derivatives, di-ethylhexyl syringyldene malonate, melanoctate, sterol esters, isodebenone, dehydroacetic acid, Licochalcone A, creatine, creatinines, feverfew extract, yeast extract, beta glucans, alpha glucans, their salts, their derivatives, their precursors, and/or combinations thereof; and a dermatologically acceptable carrier. The invention further relates to methods for regulating the condition of mammalian keratinous tissue wherein the methods each comprise the step of topically applying to the keratinous tissue of a mammal needing such treatment, a safe and effective amount of the personal care composition of the invention.
INTERNATIONAL SEARCH REPORT

INTERNATIONAL APPLICATION NO

PCT/US2006/019067

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61K8/37 A61K8/41 A61Q19/00 A61Q19/02 A61Q7/00

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
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<tbody>
<tr>
<td>X</td>
<td>US 2005/003024 A1 (OBLONG JOHN ERICH ET AL) 6 January 2005 (2005-01-06) paragraphs [0017], [0048], [0049], [0061]; claims 5,15,20</td>
<td>1-10</td>
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<td>X</td>
<td>US 6 355 229 B1 (ADAMY STEVEN T) 12 March 2002 (2002-03-12) the whole document</td>
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<td>X</td>
<td>WO 2004/031122 A (DR. ANDRE RIEKS - LABOR FUER ENZYMTECHNOLOGIE GMBH; RIEKS, ANDRE; KAEH) 15 April 2004 (2004-04-15) claims 1,11,22-27</td>
<td>1-10</td>
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<td>X</td>
<td>US 6 641 845 B1 (KYROU CHRISTOS D ET AL) 4 November 2003 (2003-11-04) column 4, lines 17-31; table 1 column 4, line 55 - column 6, line 35; claims 1-3,8,9,16; example 2</td>
<td>1-10</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C.

See patent family annex.

Date of the actual completion of the international search: 27 September 2006

Date of mailing of the international search report: 18.12.2006

Name and mailing address of the ISA:
European Patent Office, P.B. 8818 Patentdienst 2 NL-2300 HN Rotterdank Tel. (+31-70) 940-2040, Tx. 31 651 epo nl, FAX (+31-70) 340-3016

Authorized officer: Mitchell, Gemma
INTERNATIONAL SEARCH REPORT

Box 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 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 fee, this Authority did not invite payment of any additional fee.

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.:

   1(part) - 10(part)

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1(part)-10(part)

   A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) tetrahydrocurcumin and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

2. claims: 1(part)-10(part)

   A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) sugar amine and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

3. claims: 1(part)-10(part)

   A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) at least one additional skin and/or hair care active selected from vitamin B3, water soluble vitamins or oil soluble vitamins and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

4. claims: 1(part)-10(part)

   A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) retinoids and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

5. claims: 1(part)-10(part)

   A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) hydroquinone and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.
6. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) at least one additional skin and/or hair care active selected from peptides or carnosine and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

7. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) phytosterol and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

8. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) dialkanoyl hydroxyproline and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

9. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) hexamidine and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

10. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) salicylic acid and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

11. claims: 1(part)-10(part)
A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) n-acyl amino acid compounds and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

12. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) sunscreen actives and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

13. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) hesperedin and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

14. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) at least one additional ingredient selected from mustard seed extract, feverfew extract or yeast extract and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

15. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) at least one additional ingredient selected from glycyrrhizic acid or glycyrrheticin acid and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

16. claims: 1(part)-10(part)
A personal care composition comprising a) a skin and/or hair 
care active selected from the group as defined in claim 1 
and b) BHT or BHA and c) a dermatologically acceptable 
carrier and the methods of improving skin tone and of skin 
lightening and/or skin whitening by applying said 
composition.

17. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair 
care active selected from the group as defined in claim 1 
and b) ergothioneine and c) a dermatologically acceptable 
carrier and the methods of improving skin tone and of skin 
lightening and/or skin whitening by applying said 
composition.

18. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair 
care active selected from the group as defined in claim 1 
and b) vanillin or its derivatives and c) a dermatologically acceptable carrier and the methods of improving skin tone 
and of skin lightening and/or skin whitening by applying said 
composition.

19. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair 
care active selected from the group as defined in claim 1 
and b) diethyhexyl syrinxidene malonate and c) a 
dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin 
whitening by applying said composition.

20. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair 
care active selected from the group as defined in claim 1 
and b) melanostatine and c) a dermatologically acceptable 
carrier and the methods of improving skin tone and of skin 
lightening and/or skin whitening by applying said 
composition.

21. claims: 1(part)-10(part)
A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) sterol esters and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

22. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) idebenone and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

23. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) dehydroacetic acid and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

24. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) Licohalicone A and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

25. claims: 1(part)-10(part)

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) creatine or creatinine and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.

26. claims: 1(part)-10(part)
FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

A personal care composition comprising a) a skin and/or hair care active selected from the group as defined in claim 1 and b) beta glucans or alpha glucans and c) a dermatologically acceptable carrier and the methods of improving skin tone and of skin lightening and/or skin whitening by applying said composition.
<table>
<thead>
<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
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<tr>
<td></td>
<td></td>
<td>EP 1073446 A1</td>
<td>07-02-2001</td>
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<td>WO 9955352 A1</td>
<td>04-11-1999</td>
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