



(51) International Patent Classification:

A61K 33/38 (2006.01) A61L 9/00 (2006.01)
A61B 19/04 (2006.01) A61P 29/00 (2006.01)
A61K 33/40 (2006.01) A61P 31/00 (2006.01)
A61K 6/00 (2006.01) F24F 3/16 (2006.01)
A61L 2/16 (2006.01) A61K 6/08 (2006.01)

(21) International Application Number:

PCT/IB2010/001674

(22) International Filing Date:

10 June 2010 (10.06.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/482,359 10 June 2009 (10.06.2009) US

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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, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,

(88) Date of publication of the international search report:
21 April 2011

(54) Title: SILVER HYDROSOL, DENTAL APPLICATIONS AND OTHER USES THEREOF

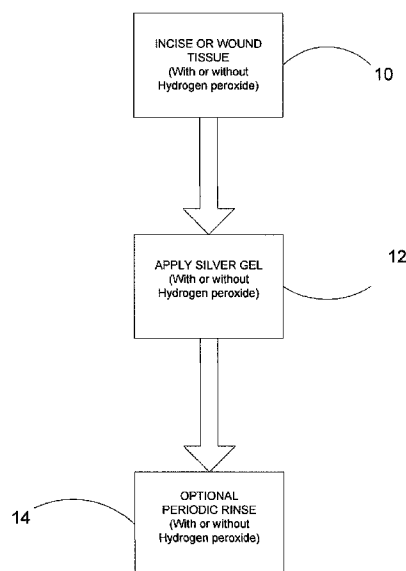


Fig. 1

(57) Abstract: Microbiologically effective silver hydrosol is used to reduce the local level of microorganisms at the site of a dental procedure and to prevent or inhibit their growth during the healing that follows the procedure. Any gingival lesions created by a dental procedure are treated with silver hydrosol in an aqueous gel. Following the procedure the patient's mouth is periodically rinsed several times a day with a solution of silver hydrosol or, more preferably, with a combination of silver hydrosol and hydrogen peroxide. These steps result in a significant reduction in post operative pain and swelling. Overall healing is accelerated by this treatment.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2010/001674

A. CLASSIFICATION OF SUBJECT MATTER IPC: A61K 33/38 (2006.01) , A61B 19/04 (2006.01) , A61K 33/40 (2006.01) , A61K 6/00 (2006.01) , A61L 2/16 (2006.01) , A61L 9/00 (2006.01) (more IPCs on the last page) 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 33/38, A61B 19/04, A61K 33/40, A61K 6/00, A61L 9/00, A61P 29/00, F24F 3/16, A61K 6/08 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used) EPOQUE, Canadian Patent Database, Scopus, Google. Terms: silver, hydrosol, dental, peroxide, H2O2, surgical mask, tooth, gum, periodontal, infections, nanosilver solution, antibacterial, wipe, disinfectant, antiviral, BMP																										
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <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> </thead> <tbody> <tr> <td>Y</td> <td>Rai, M. et al. "<i>Silver Nanoparticles as a new generation of antimicrobials.</i>" Biotechnology Advances. Biotechnology Advances. 27 (2009) pp. 76-83. 30 September 2008 (30-09-2008). *whole document*</td> <td>1-32</td> </tr> <tr> <td>Y</td> <td>WO 2005/000324 (HOLLADAY et al) 6 January 2005 (06-01-2005) *whole document*</td> <td>1-32</td> </tr> <tr> <td>Y</td> <td>WO 2002/085299 A1 (BURREL et al). 31 October 2002(31-10-2002). *whole document*</td> <td>1-23</td> </tr> <tr> <td>Y</td> <td>US 2003/0185889 (YAN et al.) 3 October 2003 (03-10-2003). *whole document*</td> <td>1-23</td> </tr> <tr> <td>Y</td> <td>US 5437858 (HUNGERBACH et al.) 1 August 1995 (01-08-1995). *whole document*</td> <td>1-23</td> </tr> <tr> <td>Y</td> <td>US 5340850 (SHIMASUE) 23 August 1994 (23-08-1994). *whole document*</td> <td>24-27</td> </tr> <tr> <td>Y</td> <td>JP 9323912 (UCHIDA SHINJI et al) 16 December 1997 (12-16-1997). *abstract*</td> <td>24-27</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	Rai, M. et al. " <i>Silver Nanoparticles as a new generation of antimicrobials.</i> " Biotechnology Advances. Biotechnology Advances. 27 (2009) pp. 76-83. 30 September 2008 (30-09-2008). *whole document*	1-32	Y	WO 2005/000324 (HOLLADAY et al) 6 January 2005 (06-01-2005) *whole document*	1-32	Y	WO 2002/085299 A1 (BURREL et al). 31 October 2002(31-10-2002). *whole document*	1-23	Y	US 2003/0185889 (YAN et al.) 3 October 2003 (03-10-2003). *whole document*	1-23	Y	US 5437858 (HUNGERBACH et al.) 1 August 1995 (01-08-1995). *whole document*	1-23	Y	US 5340850 (SHIMASUE) 23 August 1994 (23-08-1994). *whole document*	24-27	Y	JP 9323912 (UCHIDA SHINJI et al) 16 December 1997 (12-16-1997). *abstract*	24-27
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[X] Further documents are listed in the continuation of Box C. [X] See patent family annex. <table border="1"> <tbody> <tr> <td>* Special categories of cited documents :</td> <td>"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</td> </tr> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent but published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td></td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </tbody> </table>			* Special categories of cited documents :	"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	"A" document defining the general state of the art which is not considered to be of particular relevance	"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	"E" earlier application or patent but published on or after the international filing date	"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	"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)	"&" document member of the same patent family	"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													
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Date of the actual completion of the international search February 2, 2011 (25-01-2011)		Date of mailing of the international search report 2 February 2011 (02-02-2011)																								
Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001-819-953-2476		Authorized officer ADAM MACKENZIE (819) 994-6514																								

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of the 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. ☒ Claim Nos. : 1-24

because they relate to subject matter not required to be searched by this Authority, namely :

Claims 1-24 are directed to methods for treatment of the human or animal body by surgery or therapy which the International Search Authority is not required to search. However, this Authority has carried out a search based on the alleged effects or purposes/of silver hydrosol in the field of dental surgery and dental health. No search was carried out on surgical steps.

2. ☒ Claim Nos. : 32

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 :

Claim 32 does not comply with Article 6 of the PCT because there is no support in the present description for the subject matter of this claim. The various elements of the claim are not defined in the description with embodiments. However, a search of the general idea of using silver hydrosol in topical cleansing or healing formulations was carried out.

3. ☐ Claim 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 :

The claims are directed to a plurality of inventive concepts as follows:

Group A - Claims 1-27 are directed to methods of dental surgery and treatment employing silver hydrosol .

Group B - Claims 28-29 are directed to a method of improving an air filtration device employing silver hydrosol.

Group C - Claims 30-31 are directed to a method of treating gloves, using silver hydrosol.

Group D - Claim 32 is directed to an article for cleansing the skin, comprising fabric, and a solution of silver hydrosol and other components

These claims are different technologies. Silver hydrosol is a known composition and its antimicrobial effects are well-known in the art, and

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 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 claim 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 claim 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.

INTERNATIONAL SEARCH REPORT

International application No.
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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X	CN 2797369Y (CHEN RULIN). 19 July 2006 (19-07-2006). *abstract*	30-31
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T	Zheng, et al. "The use of BMP-2 coupled Nanosilver PLGA composite grafts to induce bone repair in grossly infected segmental defects." Biomaterials. 31 (2010) pp. 9293-9300. 22 September 2010 (22-09-2010)	27

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