

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 August 2007 (16.08.2007)

PCT

(10) International Publication Number
WO 2007/092823 A3

(51) International Patent Classification:

A61K 8/97 (2006.01) A61K 8/49 (2006.01)
A61K 8/42 (2006.01) A61K 8/35 (2006.01)
A61Q 11/00 (2006.01) A61K 9/70 (2006.01)
A61K 8/34 (2006.01)

(21) International Application Number:

PCT/US2007/061640

(22) International Filing Date: 6 February 2007 (06.02.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/349,042 7 February 2006 (07.02.2006) US

(72) Inventor; and

(75) Inventor/Applicant (for US only): **BROWN, Dale G.**
[US/US]; 214 Shady Lane, Wharton, Texas 77488 (US).

(74) Agent: **LINEK, Ernest V.**; Banner & Witcoff, Ltd., 28
State Street, 28th Floor, Boston, Massachusetts 02109
(US).

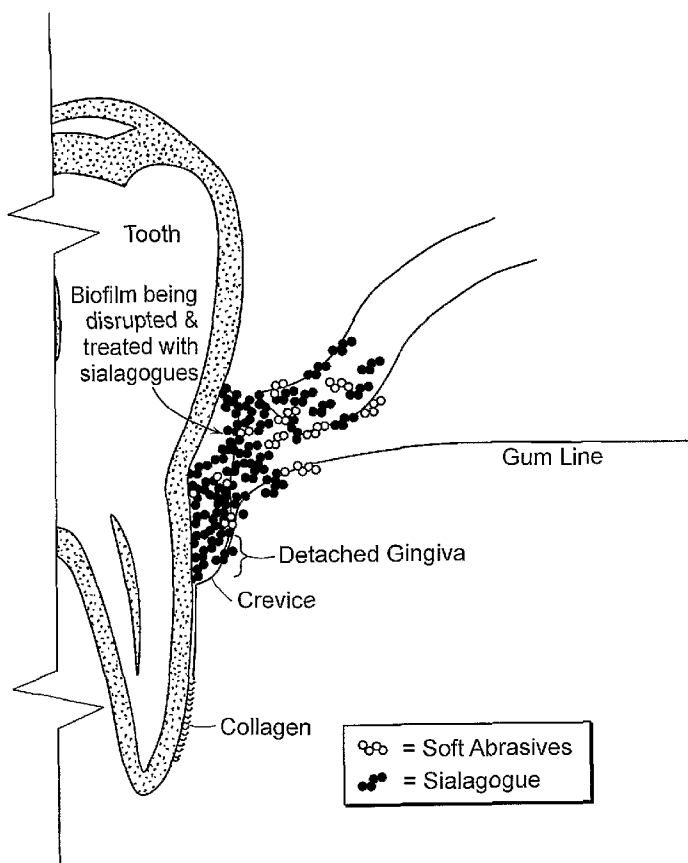
(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS,
JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS,
LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY,
MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,
RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): **WHITE-
HILL ORAL TECHNOLOGIES, INC.** [US/US]; 12701
Executive Drive, Suite 164, Strafford, Texas 77477 (US).

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: SIALAGOGUE COATINGS FOR INTERPROXIMAL DEVICES



(57) Abstract: Biofilm therapy interproximal devices coated with a sialagogue, a was/sialagogue, a surfactant/sialagogue, or an emulsion/sialagogue. Wherein said devices are suitable for: (c) controlling, disrupting and physically removing biofilms, while (d) increasing and prolonging saliva flow.

WO 2007/092823 A3



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,
RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

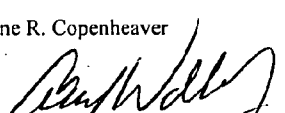
(88) Date of publication of the international search report:

10 July 2008

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2007/061640

A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. <i>A61K 8/97</i> (2006.01) <i>A61K 8/42</i> (2006.01) <i>A61Q 11/00</i> (2006.01) <i>A61K 8/34</i> (2006.01) <i>A61K 8/49</i> (2006.01) <i>A61K 8/35</i> (2006.01) <i>A61K 9/70</i> (2006.01)		
US CL. D28/65, 427/2.29, 427/2.31, 132/321, 132/323, 433/216, 424/443, 424/49, 424/58		
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)		
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) DERWENT (JAPIO, WPAT) CAPLUS MEDLINE (sialagogue, floss, toothpick, dental, tooth, teeth, interproximal, saliva, stimulate, prolong, increase, echinacea, jambu, zingerone eugenol) saliva, stimulate, prolong, increase, echinacea, jambu, zingerone eugenol))		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3,302,230 A (POPPELMANN, Å) 7 February 1967 (see the entire patent, in particular column 1 lines 36-66, column 2 lines 49-51 and column 3 lines 3-20)	1, 3, 10, 30, 32
Y	(see column 3)	13
X	WO 2003/054077 A1 (CEAPRO Inc.) 3 July 2003 (see the entire document, in particular page 9 lines 19-25, page 11 line 27 to page 12 line 5, page 15 lines 25-29, page 21 line 4 to page 22 line 2, example 7 and claims 30, 16-18 and 14)	1, 3-4, 6, 10, 14, 21, 30, 32-33
Y	(see page 21 lines 18-25)	11, 13
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> 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	"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	
"E" earlier application or patent but published on or after the international filing date	"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	
"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)	"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	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 18 December 2007	Date of mailing of the international search report 31 MAR 2008	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver Helpdesk: 571-272-4300 PCT OSP: 571-272-7774 	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2007/061640

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 1999/059427 A1 (SPI POLYOLS Inc & HERSHEY FOODS Corp) 25 Nov. 1999 (see the entire document, in particular page 2 lines 26-27 page 3 line2, page 5 lines 13-23, page 6 and claims 2, 7, 16-17, 31, 49, 64)	1, 30
Y	(see page 3 line 2, claim 16, page 5 lines 13-22)	11, 13
X	WO 1999/021425 A1 (MONELL CHEMICAL SENSES CENTER) 6 May 1999 (see the entire document, in particular page 7 lines 4-13, page 8 lines 10-12, and claim 7)	1, 30
X	Derwent Abstract Accession Number 2005-705403/73, Class P32, CN 1650821 A (LAN, Z.) 10 August 2005 Abstract	1, 30
X	Derwent Abstract Accession Number 2005-715427/74, Class P32, CN 1631331 A (LAN, Z.) 29 June 2005 Abstract	1, 30
X	US 2002/0054857 A1 (SHUCH <i>et al.</i>) 9 May 2002 (see the entire document, in particular paragraphs [0008] to [0010], [0072], claims 1-2, 12-16 and 26)	1, 30
Y	(see paragraph [0072])	19
X	US 2005/0048005 A1 (STOCKEL) 3 March 2005 (see the entire document, in particular the abstract and paragraphs [0004], [0031], [0048], and [0130] to [0138], claims 15 and 16)	1-2, 30-31
X	WO 1997/002273 A1 (THE PROCTER & GAMBLE COMPANY) 23 January 1997 (see the entire document, in particular page 2 line 26 to page 3 line 14, page 5 lines 8-9 and line 27, page 9 lines 24-37)	1, 30
X	WO 2003/061599 A2 (KALILI, T. K.) 31 July 2003 (see the entire document, in particular page 4 lines 20-21, page 8 lines 13-24, page 14 lines 6-29, claims 13, and 41-48)	1, 30
Y	(see page 8 lines 13-24)	11
X	WO 1995/030404 A1 (WHITEHILL ORAL TECHNOLOGIES Inc.) 16 November 1995 (see the entire document, in particular page 30 line 6, page 31 lines 16-18, Formula A on page 32, and claim 13)	1, 30
X	US 2002/0054858 A1 (LESKY <i>et al.</i>) 9 May 2002 (see the entire document, in particular paragraphs [0012] to [0020], examples 1 and 3, and claims 1-4 and 9-10)	1, 30
Y	(se paragraph [0010])	11

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2007/061640

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 2005/0265930 A1 (ERMAN <i>et al.</i>) 1 December 2005 (see the entire document, in particular paragraphs [0088], [0067] to [0068], [0073] and claims 1, 26, 35-36)	1, 30
X	US 2004/0115247 A1 (MELMAN) 17 June 2004 (see the entire document, in particular paragraphs [0002], [0011], [0015] to [0019], [0041] and claim 9)	1, 30
X	WO 2004/073671 A1 (Quest International Services B.V.) 2 September 2004 (see in particular page 4 last paragraph, page 3 lines 20 and 24, claims 1 and 8)	1, 30
X	US 5,165,913 A (HILL <i>et al.</i>) 24 November 1992 (see the entire document, in particular column 4 line 11 to column 5 line 65, column 14 line 25, column 17 lines 31-33, the examples and claims)	1, 3-10, 12, 14-16, 21, 24, 28-30, 32-33
Y	(see the entire document)	11, 13, 19
X	US 2004/0220151 A1 (PEYMAN) 4 November 2004 (see the entire document, in particular paragraphs [0018], [0022], [0038] to [0039], [0047] to [0048] and [0051])	1, 30
Y	(see paragraph [0051])	19
X	US 6,207,137 B1 (SHUCH <i>et al.</i>) 27 March 2001 (see the entire document, in particular column 1 line 48 to column 2 line 13, column 3 lines 20-24, column 8 lines 50-53 and claims 12-16)	1, 30
Y	(see column 8 lines 50-52)	19
X	US 2003/0178044 A1 (BROWN <i>et al.</i>) 25 September 2003 (see the entire document, in particular paragraphs [0011], [0049], [0094] to [0098], [0106], [0128])	1-8, 10, 12, 14-18, 24-28, 30-33
Y	(see the entire document)	11, 13, 19

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2007/061640

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. These particulars are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
US	3302230	BE	671636	CH	445444	DE	1532799
		GB	1083369	NL	6514044		
WO	03054077	AU	2002347165	CA	2467378	EP	1453909
		EP	1790687	US	2005031674		
WO	9959427	AU	40879/99	CA	2332458	EP	1079701
WO	9921425						
CN	1650821						
CN	1631331						
US	2002054857	AU	79643/98	CA	2441940	EP	1379223
		US	5925335	US	6207137	US	6503483
		WO	9856336	WO	02076433		
US	2005048005	US	2007053848				
WO	9702273	AU	62769/96	EP	0837862		
WO	03061599	US	2003157145				
WO	9530404	BR	9507681	CA	2190016	EP	0759739
		US	5711935				
US	2002054858	US	6589513				
US	2005265930	CN	1960644	EP	1750525	WO	2005117811
US	2004115247	US	6610276	US	2002156130		
WO	2004073671	EP	1605909	US	2006210491	EP	0506659
		US	4911927	US	5098711	US	5165913
		WO	9108716	WO	9108792	WO	9114412
US	5165913	EP	506659	US	4911927	US	50988711
		WO	9108716	WO	9108792	WO	9114412
US	2004220151	AU	60565/00	US	6436429	US	6726922
		US	7223416	US	2003031710	US	2004219110
		US	2005187199	US	2006058378	WO	0100153
US	6207137	AU	79643/98	CA	2441940	EP	1379223
		US	5925335	US	6503483	US	2002054857
		WO	9856336	WO	02076433		
US	2003178044	AU	27247/02	AU	86684/01	AU	86685/01
		AU	2002346699	AU	2003287347	AU	2003291664

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2007/061640

BR	215302	BR	312978	BR	316834
CA	2419651	CA	2419727	CA	2434416
CA	2442306	CA	2466696	CA	2488104
CA	2501195	EP	1311205	EP	1311206
EP	1359862	EP	1372523	EP	1474092
GB	2408690	GB	2411596	GB	2430885
HK	1077726	US	2002083956	US	2002128362
US	2002134398	US	2002134398	US	2002144704
US	2003035779	US	2003168077	US	2003178044
US	2003200983	US	2003225196	US	2004094181
US	2005226820	US	2006034782	US	2006112968
US	2006177384	US	2006201531	US	2006243297
US	2007107747	US	2007110681	US	2007181144
US	2007253915	WO	0215814	WO	0215815
WO	0245611	WO	02058585	WO	02080801
WO	03068173	WO	2004060186	WO	2004060198
WO	2006118666	WO	2007092823	WO	2007092823
WO	2007127673	WO	2007127674		

END OF ANNEX