(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 24 February 2005 (24.02.2005) (10) International Publication Number WO 2005/017571 A3

(51) International Patent Classification⁷: A61K 49/00

A61B 5/00,

(21) International Application Number:

PCT/US2004/024880

(22) International Filing Date: 2 August 2004 (02.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(**30**) **Priority Data:** 60/491,356

31 July 2003 (31.07.2003) US

(71) Applicant (for all designated States except US): SKY-MOON RESEARCH & DEVELOPMENT [US/US]; 3045 Park Boulevard, Palo Alto, CA 94306 (US).

- (71) Applicant and
- (72) Inventor: XIE, Jinchun [CN/US]; Skymoon Research & Development, 3045 Park Boulevard, Palo Alto, California 94306 (US).
- (74) Agent: VAN LOY, Michael, D.; 3045 Park Boulevard, Palo Alto, CA 94555 (US).

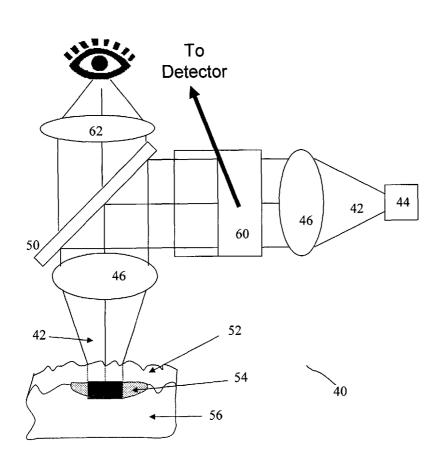
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,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

[Continued on next page]

(54) Title: OPTICAL IN VIVO ANALYTE PROBE USING EMBEDDED INTRADERMAL PARTICLES



(57) Abstract: A system and method of *in vivo* detection and quantification of one or more analytes. Small particles comprising a surface-active monolayer coating are embedded in the dermis. The surface-active monolayer acts to pre-concentrate the analyte by adsorbing the analyte from bulk solution. The concentrated analyte is more readily detected and quantified by one or more spectroscopic methods such as Raman spectroscopy.

WO 2005/017571 A3



 before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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

16 March 2006

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/24880

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61B 5/00; A61K 49/00 US CL : 600/310, 316		
According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed l U.S.: 600/310, 316, 312, 317, 322, 341, 342; 436/94,95,172;		
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)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category * Citation of document, with indication, where a		Relevant to claim No.
X US 6,485,703 B1 (COTE et al) 26 November 2002 (US 6,485,703 B1 (COTE et al) 26 November 2002 (26.11.2002), column 5, line 56 - column	
15, line 18; column 31, lines 35 - 64.		7 9 10
"		7,8,10
X US 5,615,673 A (BERGER et al) 01 April 1997 (01. thereof.	04.1997), Figure 1 and description	13, 14, 18, 19
	US 6,699,724 B1 (WEST et al) 02 March 2004 (02.03.2004), column 3, line 37 - column 7, line 6.	
	US 5,879,373 A (ROPER et al) 09 March 1999 (09.03.1999), column 2, line 28 - column 3,	
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	"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 published on or after the international filing date	"X" document of particular relevance; the cl considered novel or cannot be consider when the document is taken alone	laimed invention cannot be ed to involve an inventive step
"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 ci	when the document is combined
"O" document referring to an oral disclosure, use, exhibition or other means	with one or more other such documents obvious to a person skilled in the art	, such combination being
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent fa	amily
Date of the actual completion of the international search	Date of mailing of the international search report	
12 December 2005 (12.12.2005)	30 JAN 2006	
Name and mailing address of the ISA/US	Authorized officer	
Mail Stop PCT, Attn: ISA/US Commissioner for Patents	Eric F. Winakur Ougunia Illy	
P.O. Box 1450	Telephone No. 571/272-2975	
Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	1 refeptione (No. 3/1/2/2/29/5	
Form PCT/ISA/210 (second sheet) (April 2005)		