

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
5 October 2006 (05.10.2006)

PCT

(10) International Publication Number  
WO 2006/105353 A3

(51) International Patent Classification:

A61B 19/00 (2006.01) A61B 17/00 (2006.01)  
A61B 1/018 (2006.01) A61B 1/07 (2006.01)

(21) International Application Number:

PCT/US2006/011790

(22) International Filing Date: 29 March 2006 (29.03.2006)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/667,390 31 March 2005 (31.03.2005) US

(71) Applicant (for all designated States except US): **CYTYC CORPORATION** [US/US]; 250 Campus Drive, The Campus At Marlborough, Marlborough, Massachusetts 01752 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KOTMEL, Robert** [US/US]; 116 Bloomfield Road, Burlingame, California 94010 (US). **SAMPSON, Russel, M.** [US/US]; 449 Ferne Avenue, Palo Alto, California 94306 (US). **SHEETS, Ellen** [—/US]; 257 Nashoba Road, Concord, Massachusetts 01742 (US).

(74) Agents: **GOREN, David, J.** et al.; Fish & Richardson PC, P.O. Box 1022, Minneapolis, MN 55440-1022 (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, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, 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, 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).

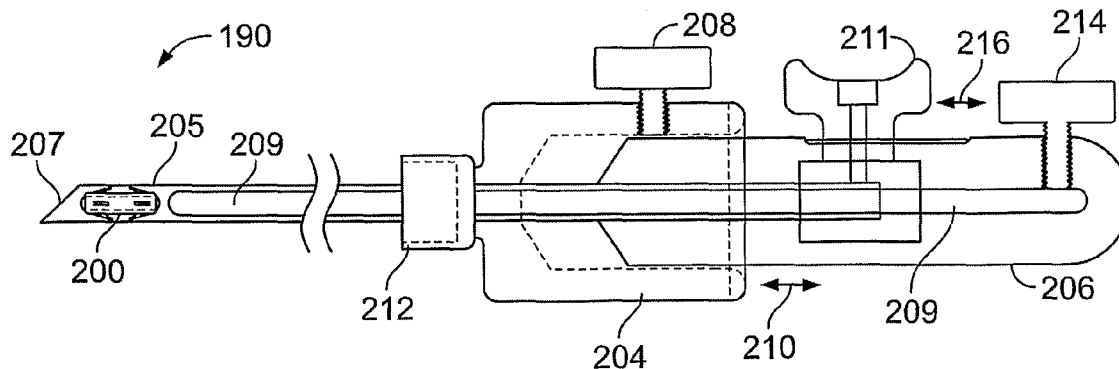
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
8 February 2007

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.

(54) Title: INTERNAL BIOPSY MARKING



(57) Abstract: A system and method for marking a tissue site are described. A marker (200) is deployed into or near the tissue site, where the marker can be later located using an imaging device external to the patient's body. After withdrawing the internal imaging device (100), the location of the marker can be identified using an external imaging device. Optionally, a biopsy of the internal tissue site can be performed based on the location of the marker.



WO 2006/105353 A3

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2006/011790

**A. CLASSIFICATION OF SUBJECT MATTER**  
 INV. A61B19/00 A61B1/018  
 ADD. A61B17/00 A61B1/07

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)  
 A61B

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, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/049489 A1 (FOERSTER SETH A ET AL) 3 March 2005 (2005-03-03)  figures 4,12,16,18,20 paragraphs [0017], [0018], [0020], [0022], [0024], [0025], [0052], [0053], [0059] - [0061], [0068], [0072], [0076] - [0078]	6-9,14, 15,18, 24-29,35
Y	-----	10-13, 16-23, 27,30,31
X	US 2003/199726 A1 (GATTO DOMINICK L) 23 October 2003 (2003-10-23) figures 1,3,4,8 paragraphs [0020], [0024], [0048] - [0050], [0060]	6-8,24, 35
	----- -/--	

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 document 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

3 August 2006

Date of mailing of the international search report

07. 12. 2006

Name and mailing address of the ISA/  
 European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Hübner, Jens

# INTERNATIONAL SEARCH REPORT

International application No PCT/US2006/011790
---

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 02/053036 A (SENORX, INC) 11 July 2002 (2002-07-11) figures 4B,4C page 3, line 11 - line 13 page 46, line 15 - line 22 -----	10,11
Y	US 2004/097981 A1 (SELIS JAMES E) 20 May 2004 (2004-05-20) figures 4-6,16 paragraphs [0002], [0038], [0060], [0062], [0082], [0090] -----	12,13, 16,17
Y	US 2005/063908 A1 (BURBANK FRED H ET AL) 24 March 2005 (2005-03-24) figures 2,7,10 paragraphs [0015], [0022], [0023], [0028], [0073], [0078] -----	18-21
Y	EP 1 163 888 A (INRAD, INC) 19 December 2001 (2001-12-19) figures 14,15 paragraphs [0042] - [0045] -----	19-21
Y	US 2005/033157 A1 (KLEIN DEAN A ET AL) 10 February 2005 (2005-02-10) paragraphs [0034], [0051] -----	22,23
Y	WO 97/29709 A (BIOSENSE, INC; ACKER, DAVID, E; GOVARI, ASSAF; FENSTER, MAIER; SHAPIRO) 21 August 1997 (1997-08-21) figure 2 page 15, line 15 - line 20 -----	27
Y	US 6 056 700 A (BURNEY ET AL) 2 May 2000 (2000-05-02) figure 17 column 7, line 22 - line 24 -----	30,31
A	US 2003/192557 A1 (KRAG DAVID ET AL) 16 October 2003 (2003-10-16) figures 24-33 paragraphs [0152], [0157], [0158] -----	8-23

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2006/011790
---

Patent document cited in search report	A1	Publication date	Patent family member(s)	Publication date
US 2005049489	A1	03-03-2005	NONE	
-----				
US 2003199726	A1	23-10-2003	NONE	
-----				
WO 02053036	A	11-07-2002	AU 2002231094 A1 CA 2445912 A1 EP 1351609 A2	16-07-2002 11-07-2002 15-10-2003
-----				
US 2004097981	A1	20-05-2004	NONE	
-----				
US 2005063908	A1	24-03-2005	US 2002188196 A1 US 2004193044 A1	12-12-2002 30-09-2004
-----				
EP 1163888	A	19-12-2001	CA 2351034 A1	16-12-2001
-----				
US 2005033157	A1	10-02-2005	WO 2005011512 A2	10-02-2005
-----				
WO 9729709	A	21-08-1997	AU 709081 B2 AU 1958997 A EP 0910300 A1 JP 2001500749 T	19-08-1999 02-09-1997 28-04-1999 23-01-2001
-----				
US 6056700	A	02-05-2000	US 6261243 B1	17-07-2001
-----				
US 2003192557	A1	16-10-2003	AU 3992199 A EP 1094752 A1 JP 2002514459 T WO 0239917 A1 WO 0239918 A1 US 2002143357 A1 US 6363940 B1 WO 9958065 A1 US 2001018594 A1 US 2002013596 A1	29-11-1999 02-05-2001 21-05-2002 23-05-2002 23-05-2002 03-10-2002 02-04-2002 18-11-1999 30-08-2001 31-01-2002
-----				

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2006/011790

## 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.: 1-5  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
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.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- 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: 6-31,35

A marker with means to be secured at or near a tissue site.  
---

2. claims: 32-34

A marker with a trail to the marker.  
---

3. claim: 36

An articulation/handle mechanism for the deployment system of the marker.  
---