

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 December 2005 (01.12.2005)

PCT

(10) International Publication Number
WO 2005/112895 A3

(51) International Patent Classification:
A61K 9/20 (2006.01) **A61B 5/103** (2006.01)

(21) International Application Number:
PCT/IL2005/000517

(22) International Filing Date: 19 May 2005 (19.05.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/572,466 20 May 2004 (20.05.2004) US

(71) Applicant (for all designated States except US): **V-TARGET TECHNOLOGIES LTD.** [IL/IL]; 2 HaEtgar Street, Carmel Building, 2nd Floor, 39032 Tirat Hacarmel (IL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ZILBERSTEIN, Yoel** [IL/IL]; 13 Zrubavel Street, 34671 Haifa (IL). **NAGLER, Michael** [IL/IL]; 4 Avshalom Haviv Street, 69495 Tel Aviv (IL). **ROUSSO, Benny** [IL/IL]; 12 Henri Bergson Street, 75801 Rishon LeZion (IL). **HALAHMI, Izhar** [IL/IL]; 4 Itzhak Ben-Zvi Street, 45100 Hod Hasharon (IL).

(74) Agent: **G. E. EHRLICH (1995) LTD.**; 11 Menachem Begin Street, 52 521 Ramat Gan (IL).

(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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, 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, 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:
1 June 2006

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: INGESTIBLE DEVICE PLATFORM FOR THE COLON

(57) Abstract: An ingestible pill platform for colon imaging is provided, designed to recognize its entry to the colon and expand in the colon, for improved imaging of the colon walls. On approaching the external anal sphincter muscle, the ingestible pill may contract or deform, for elimination. Colon recognition may be based on a structural image, based on the differences in diameters between the small intestine and the colon, and particularly, based on the semilunar fold structure, which is unique to the colon. Additionally or alternatively, colon recognition may be based on a functional image, based on the generally inflammatory state of the vermiform appendix. Additionally or alternatively, pH, flora, enzymes and (or) chemical analyses may be used to recognize the colon. The imaging of the colon walls may be functional, by nuclear-radiation imaging of radionuclide-labeled antibodies, or by optical-fluorescence-spectroscopy imaging of fluorescence-labeled antibodies. Additionally or alternatively, it may be structural, for example, by visual, ultrasound or MRI means. Due to the proximity to the colon walls, the imaging in accordance with the present invention is advantageous to colonoscopy or virtual colonoscopy, as it is designed to distinguish malignant from benign tumors and detect tumors even at their incipient stage, and overcome blood-pool background radioactivity.



WO 2005/112895 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL05/00517

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A61K 9/20(2006.01);A61B 5/103(2006.01)

USPC: 424/464;600/587

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)

U.S. : 424/464; 600/587

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 appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/0099310 A1 (KIMCHY et al) 25 July 2002 (25.07.2002), abstract; Figures 1-8; paragraphs 35-40, 87-100; claims 1-60.	1-39
A	Babiar et al. Radiological society of North America, "Camera Pill promising for Diagnosis of Small Bowel Disease," 06 January 2004; pages 1-3.	1-39
A	US 5,690,691 A (CHEN et al) 25 November 1997 (25.11.1997), see the whole document.	1-39
Y	US 6,115,635 A (BOURGEOIS) 05 September 2000 (05.09.2000), abstract; Figures 1 and 2; columns 2-10.	1-39
A	US 6,453,199 B1 (KOBOZEV) 19 September 2002 (17.09.2002), see the whole document.	1-39
A	US 6,516,213 B1 (NEVO) 04 February 2003 (04.02.2003), see the whole document.	1-39
A	US 6,607,301 B1 (GLUKHOVSKY et al) 19 August 2003 (19.08.2003), see the whole document.	1-39

☒ 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 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

11 March 2006 (11.03.2006)

Date of mailing of the international search report

20 APR 2006

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

BLESSING FUBARA

Telephone No. 571-272-1600

Janice Ford
for

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/IL05/00517**C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/0072784 A1 (SHEPPARD, JR. et al) 13 June 2002 (13.06.2002), abstract; Figures 1-3; paragraphs 26-53; Examples 1-5.	1-39
Y	US 2003/0191430 A1 (D'ANDREA et al) 09 October 2003 (09.10.2003), abstract; Figures 1-4; paragraphs 18-59.	1-39