

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 February 2003 (13.02.2003)

PCT

(10) International Publication Number
WO 2003/011106 A3

- (51) International Patent Classification⁷: **A61K 35/04**, C07K 16/00, C12P 21/08
- (21) International Application Number: PCT/US2002/022755
- (22) International Filing Date: 18 July 2002 (18.07.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/919,243 31 July 2001 (31.07.2001) US
- (71) Applicant (*for all designated States except US*): **MALLINCKRODT INC.** [US/US]; 675 McDonnell Boulevard, P.O. Box 5840, St. Louis, MO 63134 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **RAJAGOPALAN, Raghavan** [US/US]; 27030 Cedar Road, Beechwood, OH 44122 (US). **BUGAJ, Joseph, E.** [US/US]; 2916 Kettering Drive, St. Charles, MO 63303 (US). **ACHILEFU, Samuel, I.** [NG/US]; 3424 San Sevilla Court, St. Louis, MO 63044 (US). **DORSHOW, Richard, B.** [US/US]; 11977 Neihaus Lane, St. Louis, MO 63146 (US).
- (74) Agent: **BOONE, Jeffrey, S.**; 675 McDonnell Boulevard, P.O. Box 5840, St. Louis, MO 63134 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (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:
2 December 2004
- 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 IMAGE ANTIBODIES FOR OPTICAL IMAGING AND THERAPY

(57) Abstract: Compositions and methods using internal image antibodies for phot diagnosis and/or phototherapy. The internal image antibodies are conjugated with a photoactive molecule such as a dye or photosensitizer, to target specific regions, such as biological receptors the photoactive molecules are then activated for diagnosis or therapy. Advantageously, the internal image antibody is specific for a biological receptor, but does not require isolation of the receptor to prepare the antibody, and provides the desired specific ty and selectivity for targeted diagnosis for therapy.



WO 2003/011106 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/22755

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 35/04; C07K 16/00; C12P 21/08
US CL : 530/387.2, 391.3, 391.5

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. : 530/387.2, 391.3, 391.5

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)
MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS on STN

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,667,764 A (KOPIA et al) 16 September 1997 (16.09.1997), column 19, lines 13-62, column 11, line 1 bridging column 12, lines 1-38, claim 3 of '764.	1-66
Y	US 4,818,684 A (EDELMAN et al) 04 April 1989 (04.04.1989), column 13, line 64, claims 1-11 of '684.	1-2, 9-10, 17-18, 25-26, 33, 37, 43-44, 49-50, 55, and 61-63
A,E	US 6,648,704 A (RAJAGOPALAN et al) 26 November 2002 (26.11.2002), claims 1-16 of '704.	3-8, 16, 19-24, 38-42, 56-60 and 63



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

23 July 2004 (23.07.2004)

Date of mailing of the international search report

08 SEP 2004

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. (703) 305-3230

Authorized officer

Phuong Huynh

Telephone No. (571) 272-1600