

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 September 2004 (02.09.2004)

PCT

(10) International Publication Number
WO 2004/073765 A3

- (51) International Patent Classification:
A61F 9/00 (2006.01) A61M 5/178 (2006.01)
- (21) International Application Number:
PCT/US2004/004643
- (22) International Filing Date:
18 February 2004 (18.02.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/447,971 18 February 2003 (18.02.2003) US
- (71) Applicant (for all designated States except US): **EYE-TECH PHARMACEUTICALS, INC.** [US/US]; 500 Seventh Avenue, 18th Floor, New York, NY 10018 (US).

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, 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, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BREEGI, Wisam** [US/US]; 120 Bedford Road, Woburn, MA 01801 (US). **CALIAS, Pericles** [US/US]; 39 Swains Pond Avenue, Melrose, MA 02176 (US). **ADAMIS, Anthony, P.** [US/US]; 15 Pond Circle, Boston, MA 02130 (US). **SHIMA, David** [US/US]; 603 Tremont Street #3, Boston, MA 02118 (US). **CUNNINGHAM, Ememett, T.** [US/US]; 210 East 65th Street #17, New York, NY 10021 (US).
- (74) Agent: **RAFA, Michael, J.**; Eyetech Pharmaceuticals, Inc., 3 Times Square, 12th Floor, New York, NY 10036 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

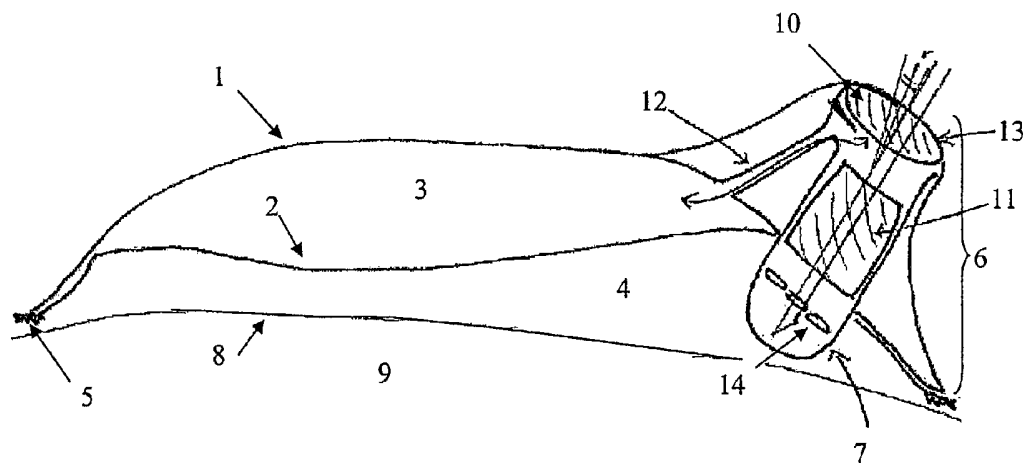
Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
20 July 2006

(15) Information about Corrections:
Previous Corrections:
see PCT Gazette No. 50/2004 of 9 December 2004
see PCT Gazette No. 44/2004 of 28 October 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: DRUG DELIVERY DEVICE AND SYRINGE FOR FILLING THE SAME



(57) Abstract: The invention relates to the field of drug delivery devices. More particularly, the invention relates to implantable, refillable drug delivery devices which provide for drug delivery over sustained time periods. The present invention has particular application for ophthalmic drug delivery applications.

WO 2004/073765 A3

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/004643

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61F9/00 A61M5/178

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)
A61F A61K A61M

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, CHEM ABS Data, MEDLINE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 210 368 B1 (ROGERS CHARLES R) 3 April 2001 (2001-04-03) column 3, line 3 - line 37 claims 1-31	1-26, 49-68
X	US 4 923 457 A (ELLINGSEN OLAV) 8 May 1990 (1990-05-08) column 2, line 45 - column 3, line 7 column 3, line 39 - column 4, line 20 claims 1,2	1-26, 49-68
X	US 5 085 656 A (POLASCHEGG HANS-DIETRICH) 4 February 1992 (1992-02-04) column 2, line 15 - line 29 column 3, line 28 - line 61 claims 1-20	1-26, 49-68

Further documents are listed in the continuation of box C.

Patent family members are listed in 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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

23 May 2006

Date of mailing of the international search report

06/06/2006

Name and mailing address of the ISA
European Patent Office, P.B. 5618 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Muller, S

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/004643

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.: —
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 49-68 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the composition.
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: 1-26,49-68 (entirely)

A device including: a) an outer layer, b) a reservoir, c) a pressure equalization element.

2. claims: 27-48 (entirely)

A syringe comprising: a) a barrel, b) a needle, c) a venting tube, d) a pressure source.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No PCT/US2004/004643

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 6210368	B1	03-04-2001	US	6542350 B1	01-04-2003
<hr style="border-top: 1px dashed black;"/>					
US 4923457	A	08-05-1990	AU	587877 B2	31-08-1989
			AU	6560586 A	28-05-1987
			BR	8605744 A	25-08-1987
			CA	1303798 C	23-06-1992
			DE	3688391 D1	09-06-1993
			DE	3688391 T2	02-12-1993
			DK	560186 A	23-05-1987
			EP	0223763 A1	27-05-1987
			FI	864760 A	23-05-1987
			JP	1828501 C	15-03-1994
			JP	62217974 A	25-09-1987
<hr style="border-top: 1px dashed black;"/>					
US 5085656	A	04-02-1992	DE	3915251 A1	22-11-1990
			EP	0401515 A2	12-12-1990
			ES	2075088 T3	01-10-1995
			JP	3001877 A	08-01-1991
			JP	3188689 B2	16-07-2001
<hr style="border-top: 1px dashed black;"/>					