



(51) International Patent Classification:
A61L 17/00 (2006.01) *A61L 17/14* (2006.01)
A61L 17/06 (2006.01)

(21) International Application Number:
PCT/US2008/082009

(22) International Filing Date:
31 October 2008 (31.10.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/984,322 31 October 2007 (31.10.2007) US

(71) Applicant (for all designated States except US): **AN-GIOTECH PHARMACEUTICALS, INC.** [CA/CA];
1618 Station Street, Vancouver, British Columbia V6A 1B6 (CA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **D'AGOSTINO, William L.** [US/US]; 19 Douglas Drive, Hamden, Connecticut 06518 (US).

(74) Agents: **MCMASTERS, David D.** et al.; P.O. Box 2840, North Bend, Washington 98045 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: COMBINING SYNTHETIC, NATURAL POLYMERS AND RECOMBINANT POLYMERS TO FORM MONOFILAMENT AND MULTIFILAMENT SELF-RETAINING SUTURES

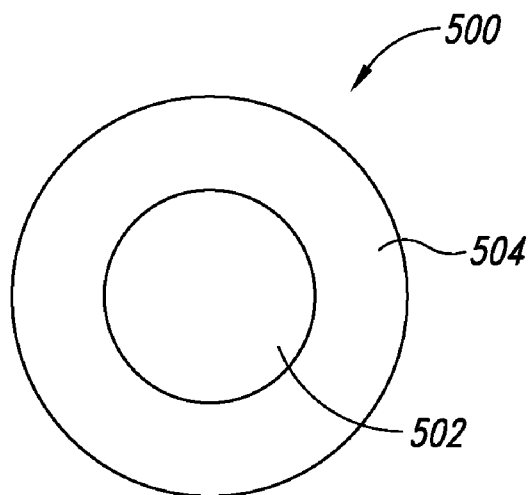


Fig. 5

(57) Abstract: The present invention combines synthetic, natural and recombinant polymers for making a self-retaining suture. In an embodiment of the present invention recombinant polyhydroxyalkanoate (rPHA) polymers and/or polyglycolic acid polymers are incorporated into the suture. In various embodiments of the invention, materials are incorporated into the suture to illicit a tissue response reaction. The tissue response reaction results in deposition of collagen around the tissue retainer in the tissue thereby increasing the retention of the tissue retainer in the tissue. In various embodiments of the invention, the core of the suture is made from a material that does not illicit a tissue response reaction. In various embodiments of the invention, the core can be chose to enhance elasticity and strength of the suture.

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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

8 April 2010

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/082009

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61L17/00 A61L17/06 A61L17/14

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)

A61L 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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 86/00020 A1 (BIORESEARCH INC [US]) 3 January 1986 (1986-01-03) page 3, paragraph 6 - paragraph 7 page 8, last paragraph - page 10, paragraph 1	1-40
A	US 6 867 248 B1 (MARTIN DAVID P [US] ET AL) 15 March 2005 (2005-03-15) column 4, line 5 - line 29 column 5, line 22 - column 6, line 63	1-40
A	US 2007/005110 A1 (COLLIER JOHN P [US] ET AL) 4 January 2007 (2007-01-04) page 1, paragraph 6	4-5, 13-30, 32-33, 35-37
	----- -/--	

☒ 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

9 February 2010

Date of mailing of the international search report

16/02/2010

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Dudás, Eszter

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/082009

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2006/138300 A2 (POLY MED INC [US]; SHALABY SHALABY W [US]; LINDSEY JAMES M III [US]) 28 December 2006 (2006-12-28) page 2, line 22 - page 4, line 11 -----	1-40

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/082009

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 8600020	A1	03-01-1986	EP 0182784 A1 JP 61502379 T	04-06-1986 23-10-1986
US 6867248	B1	15-03-2005	US 2003236320 A1	25-12-2003
US 2007005110	A1	04-01-2007	AU 2006266242 A1 CA 2613839 A1 CN 101296661 A EP 1895913 A1 JP 2009500074 T KR 20080039345 A WO 2007005296 A1	11-01-2007 11-01-2007 29-10-2008 12-03-2008 08-01-2009 07-05-2008 11-01-2007
WO 2006138300	A2	28-12-2006	EP 1890638 A2 US 2008089840 A1	27-02-2008 17-04-2008