

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number  
**WO 2005/074913 A3**

(51) International Patent Classification<sup>7</sup>: **A61K 31/335**

(21) International Application Number:

PCT/US2005/003800

(22) International Filing Date: 31 January 2005 (31.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/540,660 30 January 2004 (30.01.2004) US

(71) Applicant (for all designated States except US): **AN-GIOTECH INTERNATIONAL AG** [CH/CH]; Bundesplatz 1, CH-6304 Zug (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **AVELAR, Rui** [CA/CA]; 1989 King Edward Avenue West, Vancouver, British Columbia V6J 2W7 (CA). **LIGGINS, Richard, T.** [CA/CA]; 407 Lakeview Street, Coquitlam, British Columbia V3K 5K7 (CA). **TOLEIKIS, Philip, M.** [US/CA]; 8011 Laburnum Street, Vancouver, British Columbia V6P 5N8 (CA). **LOSS, Troy, A., E.** [CA/CA]; #3 - 1536 Eastern Avenue, North Vancouver, British Columbia V7L 3G1 (CA). **GRAVETT, David, M.** [CA/CA]; 616 West 21st Avenue, Vancouver, British Columbia V5Z 1Y8 (CA). **MAITI, Arpita** [CA/CA]; #211 - 2920 Ash Street, Vancouver, British Columbia V5Z 4A6 (CA).

(74) Agents: **LIN, Qing** et al.; Seed Intellectual Property Law Group PLLC, Suite 6300, 701 Fifth Avenue, Seattle, WA 98104-7092 (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, 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, 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:  
19 January 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: COMPOSITIONS AND METHODS FOR TREATING CONTRACTURE

(57) Abstract: A method for treating contracture is provided that includes administering to a patient in need thereof a composition that includes a therapeutic agent effective in treating contracture. Compositions, devices, and kits for use in treating contracture are also described.



WO 2005/074913 A3

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2005/003800

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 A61K31/335				
According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61K				
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, BIOSIS, EMBASE				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	US 2002/183380 A1 (HUNTER WILLIAM L) 5 December 2002 (2002-12-05) paragraphs [0161], [0165] -----	22-28, 57-185		
X	WO 98/24427 A (ANGIOTECH PHARMACEUTICALS, INC; HUNTER, WILLIAM, L) 11 June 1998 (1998-06-11) page 42, line 27 - page 43, line 23 -----	22-28, 57-185		
<input type="checkbox"/> Further documents are listed in the continuation of box C.				
<input checked="" type="checkbox"/> Patent family members are listed in annex.				
* Special categories of cited documents :				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;">                     "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                 </td> <td style="width: 50%; border: none; vertical-align: top;">                     "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.                      "&amp;" document member of the same patent family                 </td> </tr> </table>			"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
"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  <p style="text-align: center;">8 June 2005</p>	Date of mailing of the international search report  <p style="text-align: center;">JUN 11 2005</p>			
Name and mailing address of the ISA European Patent Office, P.B. 5318 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  <p style="text-align: center;">Cattell, James</p>			

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2005/003800

## 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:
  
2.  Claims Nos.: 1-21  
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:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
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.:  
1-28, 57-160 (partially), 161, 162-183 (partially), 184, 185

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

Continuation of Box II.2

Claims Nos.: 1-21

Claim 1 defines the problem of treating contracture. This problem is "solved" by the use of an "agent effective in treating contracture". This merely repeats the problem to be solved, rather than provide any technical solution. Likewise claims 2 to 21 are also void of any technical features which may solve the problem

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-28, 57-160(partially), 161, 162-183(partially) 184, 185

The use of a cell cycle inhibitor to treat contracture  
---

2. claims: 29, 30 57-161(partially) 163-183(partially)

The use of a phosphodiesterase III inhibitor to treat contracture  
---

3. claims: 31, 32 57-161(partially), 163-183(partially)

The use of a bisphosphonate to treat contracture  
---

4. claims: 33, 34, 57-161(partially), 163-183(partially)

The use of a macrolide antibiotic to treat contracture  
---

5. claims: 35, 36, 57-161(partially), 163-183(partially)

The use of a phosphodiesterase IV inhibitor to treat contracture  
---

6. claims: 37, 38, 57-161(partially), 163-183(partially)

The use of a p38 MAP kinase inhibitor to treat contracture  
---

7. claims: 39, 40, 57-161(partially), 163.183(partially)

The use of an ICE inhibitor to treat contracture  
---

8. claims: 41, 42, 57-161(partially), 163-183(partially)

The use of a phenothiazine to treat contracture  
---

9. claims: 43, 44, 57-161(partially), 163-183(partially)

The use of a cytokine modulator to treat contracture  
---

10. claims: 45 57-161(partially) 163-183 (partially)

The use of diacerein, doxycycline or leflunamide to treat contracture

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

---

11. claims: 46, 47, 57-161(partially) 163-183(partially)

The use of an NF  $\kappa$ B inhibitor to treat contracture

---

12. claims: 48, 49, 57-161(partially) 163-183(partially)

The use of an IMPDH inhibitor to treat contracture

---

13. claims: 50, 57-161(partially) 163-183(partially)

The use of an antioxidant to treat contracture

---

14. claims: 51, 52, 43, 54, 57-161(partially), 163-183(partially)

The use of an angiogenesis inhibitor to treat contracture

---

15. claims: 55, 57-161(partially) 162-183(partially)

The use of a cGMP stimulator to treat contracture

---

16. claims: 56, 57-161(partially) 163-183(partially)

The use of the various compounds of claim 56 to treat contracture.

---

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/003800

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002183380	A1	NONE	
WO 9824427	A	AT 246500 T	15-08-2003
		AT 241977 T	15-06-2003
		AT 201138 T	15-06-2001
		AU 735655 B2	12-07-2001
		AU 5113298 A	29-06-1998
		BR 9713673 A	31-10-2000
		CA 2273240 A1	11-06-1998
		CN 1246791 A	08-03-2000
		CN 1679937 A	12-10-2005
		DE 69704877 D1	21-06-2001
		DE 69704877 T2	15-11-2001
		DE 69722681 D1	10-07-2003
		DE 69722681 T2	13-05-2004
		DE 69724016 D1	11-09-2003
		DE 69724016 T2	17-06-2004
		DK 941089 T3	10-09-2001
		EP 0941089 A2	15-09-1999
		ES 2207451 T3	01-06-2004
		ES 2157601 T3	16-08-2001
		GR 3036364 T3	30-11-2001
		HK 1022270 A1	10-05-2002
		HK 1033422 A1	19-12-2003
		HK 1037320 A1	09-07-2004
		JP 3287852 B2	04-06-2002
		JP 2001503785 T	21-03-2001
		JP 2002226399 A	14-08-2002
		NO 992641 A	30-07-1999
		NZ 336094 A	31-08-2001
		NZ 512097 A	27-05-2005
		PT 941089 T	30-11-2001
		RU 2242974 C2	27-12-2004
		TW 562674 B	21-11-2003