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Westmont Avenue, San Jose, CA 95130 (US). **ZHOU, Huchen** [CN/US]; Room 1001, Building 10, 50 Youqing Road, Shanghai 201100 (CN). **HERNANDEZ, Vincent, S.** [US/US]; 287 Gilchrist Lane, Watsonville, CA 95076 (US).

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(74) Agents: **ESKER, Todd** et al.; Morgan Lewis & Bockius LLP, Suite 700, 2 Palo Alto Square, 3000 El Camino Real, Palo Alto, CA 94306 (US).

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(71) Applicant (*for all designated States except US*): **ANACOR PHARMACEUTICALS, INC.** [US/US]; 1060 East Meadow Circle, Palo Alto, CA 94303-4230 (US).

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(72) Inventors; and

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(75) Inventors/Applicants (*for US only*): **BAKER, Stephen, J.** [GB/US]; 1568 Begen Avenue, Mountain View, CA 94040 (US). **SANDERS, Virginia** [US/US]; Apt. 4, 2895 Harrison Street, San Francisco, CA 94110 (US). **AKAMA, Tsutomu** [JP/US]; 832 Azure Street, Sunnyvale, CA 94087 (US). **BELLINGER-KAWAHARA, Carolyn** [US/US]; 15 Landa Lane, Redwood City, CA 94061 (US). **FREUND, Yvonne** [US/US]; 639 Paco Drive, Los Altos, CA 94024 (US). **MAPLES, Kirk, R.** [US/US]; 1195 San Moritz Drive, San Jose, CA 95132 (US). **PLATTNER, Jacob, J.** [US/US]; 1016 Amito Avenue, Berkeley, CA 94705 (US). **ZHANG, Yong-Kang** [US/US]; 5151

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(54) Title: BORON-CONTAINING SMALL MOLECULES AS ANTI-INFLAMMATORY AGENTS

(57) Abstract: Methods of treating anti-inflammatory conditions through the use of boron-containing small molecules are disclosed.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/62350

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A01N 55/08; A61K 31/69 (2008.01) USPC - 514/64 According to International Patent Classification (IPC) or to both national classification and IPC</p>		
<p>B. FIELDS SEARCHED</p>		
<p>Minimum documentation searched (classification system followed by classification symbols) USPC - 514/64</p>		
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 514/242, 380; 524/109 (see search terms below)</p>		
<p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST(USPT,PGPB,EPAB,JPAB); Google Search Terms Used: boron therapeutic compounds, Benzoxaborole, boron anti-inflammatory, diarylborinic acid, diazaborinine, cytokine</p>		
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,880,188 A (AUSTIN et al.) 09 March 1999 (09.03.1999) col 2, ln 15	1-39
Y	US 5,962,498 A (DRIEDGER et al.) 05 October 1999 (05.10.1999) abstract; col 6, ln 38- 41	1-39
Y	US 6,369,098 B1 (PERSHADSINGH et al.) 09 April 2002 (09.04.2002) Table IV-VIII	21-22
Y	US 2003/0032673 A1 (NAGY) 13 February 2003 (13.02.2003) para [0012]	23-24
Y	US 2005/0239170 A1 (HEDLEY et al.) 27 October 2005 (27.10.2005) para [0146]	25-26
Y	US 2006/0009386 A1 (STOSSEL et al.) 12 January 2006 (12.01.2006) para [0206]	32-34
Y	US 5,688,928 A (Stolowitz) 18 November 1997 (18.11.1997) col 5, ln 1-10	37-39
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>		
<p>* Special categories of cited documents:</p>		
<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>	
<p>Date of the actual completion of the international search</p> <p>16 April 2008 (16.04.2008)</p>		<p>Date of mailing of the international search report</p> <p>16 MAY 2008</p>
<p>Name and mailing address of the ISA/US</p> <p>Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>		<p>Authorized officer:</p> <p>Lee W. Young</p> <p>PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>

Form PCT/ISA/210 (second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/62350

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept under the PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional fees must be paid.

[In claim 8, formula VI is written as 'IV', this is treated as 'VI']

Group I, claims 1-11, 13-36 are drawn to a method of treating an inflammatory related disease in a human or an animal, said method comprising administering to the human or animal a therapeutically effective amount of a compound (e.g. formula I, III, IV, V, VI).

Group II, claims 1-2, 12, 17, 19, 21, 23, 25, 27, 29, 31-32, 34-35 are drawn to a method of treating an inflammatory related disease in a human or an animal, said method comprising administering to the human or the animal a therapeutically effective amount of a compound (e.g. a compound in claim 12, which is having 6/6 fused ring system different from the 5/6 ring system present in other formulas).

Group III, claims 37-39 are drawn to a method of treating an inflammatory related disease in a human or an animal, said method comprising administering to the human or the animal a therapeutically effective amount of a compound having a structure according to formula II.

I. This International Searching Authority considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated below:

There is no significant common structural element in the compounds of Groups I-III. For instance -O- (e.g. formula I, claim 1) is known, and thus clearly is not a contribution over the art. Thus, no special technical feature exists among the Groups, and hence Groups I-III lack unity of invention.

Group I is distinct from the other Groups because the latter do not require a compound of formula III, IV, V or VI.

Group II is distinct from the other Groups because the latter do not require a compound as claimed in claim 12.

Group III is distinct from the other Groups because the latter do not require a compound of formula II.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/62350

Box No. 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.:
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 No. 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 extra 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 additional fees, this Authority did not invite payment of additional fees.
- 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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (April 2007)

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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.

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