

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 October 2005 (20.10.2005)

PCT

(10) International Publication Number
WO 2005/096784 A3

- (51) International Patent Classification:
A61K 31/53 (2006.01) C07D 253/08 (2006.01)
- (21) International Application Number:
PCT/US2005/012057
- (22) International Filing Date: 7 April 2005 (07.04.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/561,237 8 April 2004 (08.04.2004) US
60/643,439 12 January 2005 (12.01.2005) US
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:
US 60/561,237 (CIP)
Filed on 8 April 2004 (08.04.2004)
US 60/643,439 (CIP)
Filed on 12 January 2005 (12.01.2005)
- (71) Applicant (for all designated States except US): **TARGE-GEN, INC.** [US/US]; 9393 Towne Centre Drive, Suite 120, San Diego, CA 92121 (US).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): **NORONHA, Glenn** [US/US]; 4860 Baroque Terrace, Oceanside, CA 92057 (US). **BARRETT, Kathy** [US/US]; 3056F Via Alicante Drive, La Jolla, CA 92037 (US). **CAO, Jianguo** [CN/US]; 11984 Rancho Bernardo Road, #b, San Diego, CA 92128-2077 (US). **GRITZEN, Colleen** [US/US]; 222 Paseo Marguerita, Vista, CA 92084 (US). **GONG, Xianchang** [CN/US]; 9505 Genesee Avenue, Apt. 524, San Diego, CA 92121 (US). **HOOD, John** [US/US]; 10831 Vereda Sol del Dios, San Diego, CA 92130 (US). **MAK, Chi Ching** [CN/US]; 12057 World Trade Drive, #3, San Diego, CA 92128 (US). **MCPHERSON, Andrew** [US/US]; 9596 ViaPereza, San Diego, CA 92129

(US). **PATHAK, Ved, Prakash** [US/US]; 4140-157 Via Candidiz, San Diego, CA 92130 (US). **RENICK, Joel** [US/US]; 4464 College Avenue, San Diego, CA 92115 (US). **SOLL, Richard** [US/US]; 5519 Caminito Mundano, San Diego, CA 92130 (US). **SPLITTGERBER, Ute** [DE/US]; 4800 La Cruz Drive, La Mesa, CA 91941 (US). **WRASIDLO, Wolfgang** [US/US]; 307 Prospect Street, La Jolla, Ca 92037 (US). **ZENG, Binqi** [CA/US]; 15058-D Via Hondonado, San Diego, 92129 (US). **ZHAO, Ningning** [CN/US]; 17835 Ardisia Court, San Diego, CA 92127 (US). **DNEPROVSKAIA, Elena** [RU/US]; 5371 Renaissance Avenue, San Diego, CA 92127 (US).

(74) Agent: **HAILE, Lisa, A.**; DLA Piper Rudnick Gray Cary US LLP, 4365 Executive Drive, Suite 1100, San Diego, CA 92121-2133 (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, KM, 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 (patent), UZ, VC, VN, YU, ZA, ZM, ZW.

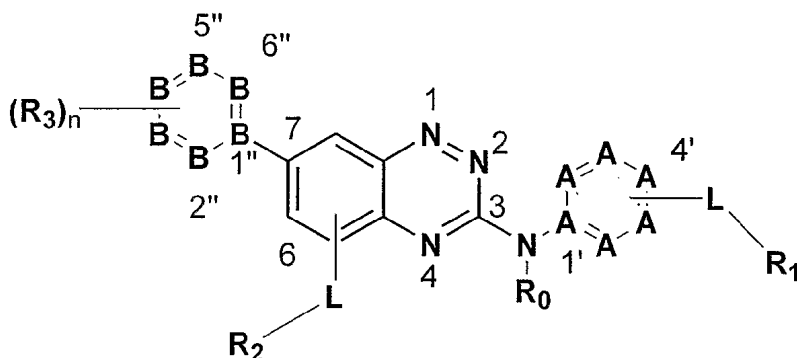
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, 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

(88) Date of publication of the international search report:
19 February 2009

(54) Title: BENZOTRIAZINE INHIBITORS OF KINASES



(I)

(57) Abstract: The invention provides benzotriazine compounds having formula (I). The benzotriazine compounds of the invention are capable of inhibiting kinases, such members of the Src kinase family, and various other specific receptor and non-receptor kinases.

WO 2005/096784 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/12057

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC: A61K 31/53(2006.01);C07D 253/08(2006.01)</p> <p>USPC: 514/242;544/183 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) U.S. : 514/242; 544/183</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)</p>														
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 2004/0167198 A1 (WRASIDLO et al) 26 August 2004, see entire document.</td> <td>1, 5-7</td> </tr> <tr> <td>---</td> <td></td> <td></td> </tr> <tr> <td>Y</td> <td></td> <td>1; 5-7, 21-22, 32, 41, 45, 55, 59, 66, 74</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 2004/0167198 A1 (WRASIDLO et al) 26 August 2004, see entire document.	1, 5-7	---			Y		1; 5-7, 21-22, 32, 41, 45, 55, 59, 66, 74
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.												
X	US 2004/0167198 A1 (WRASIDLO et al) 26 August 2004, see entire document.	1, 5-7												

Y		1; 5-7, 21-22, 32, 41, 45, 55, 59, 66, 74												
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.</p>														
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"Z" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"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	"Z" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed			
"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	"Z" document member of the same patent family													
"P" document published prior to the international filing date but later than the priority date claimed														
<p>Date of the actual completion of the international search 16 July 2008 (16.07.2008)</p>		<p>Date of mailing of the international search report 02 SEP 2008</p>												
<p>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. (571) 273-3201</p>		<p>Authorized officer Thomas Dunn Telephone No. 571-272-1700</p> 