

(19) World Intellectual Property
Organization
International Bureau



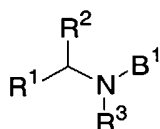
(43) International Publication Date
15 January 2004 (15.01.2004)

PCT

(10) International Publication Number
WO 2004/004657 A3

- (51) International Patent Classification⁷: **A61K 31/4015**, 31/496, 31/5377, C07D 207/36, 207/44, 403/06, 413/06
- (21) International Application Number: PCT/US2003/021371
- (22) International Filing Date: 9 July 2003 (09.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/394,548 9 July 2002 (09.07.2002) US
60/399,248 29 July 2002 (29.07.2002) US
- (71) Applicant: **BRISTOL-MYERS SQUIBB COMPANY** [US/US]; P. O. Box 4000, Route 206 and Provinceline Road, Princeton, NJ 08543-4000 (US).
- (72) Inventors: **WALKER, Michael, A.**; 76 Ivy Way, Durham, CT 06422 (US). **MA, Zhuping**; 250 South Elizabeth Way, Apt. #1124, Chandler, AZ 85225 (US). **NAIDU, B., Narasimhulu**; 12 Skeetfield Point Road, Durham, CT 06422 (US). **SORENSEN, Margaret, E.**; 27 Harrison St., Apt. 13, Meriden, CT 06450 (US). **PENDRI, Annapurna**; 54 Aspen Drive, Glastonbury, CT 06073 (US). **BANVILLE, Jacques**; 1209 Girard, St-Hubert, Québec J4T 1H3 (CA). **PLAMONDON, Serge**; 705 du Cabestan, Ste-Catherine, Québec J0L 1E0 (CA). **REMILLARD, Roger**; 13 des Cedres, Napierville, Québec J0L 1L0 (CA).
- (74) Agents: **EPPERSON, James** et al.; Bristol-Myers Squibb Company, P.O. Box 4000, Princeton, NJ 08543-4000 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, 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, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (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 patent (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:
4 November 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: HIV INTEGRASE INHIBITORS



(57) Abstract: The present invention describes novel compounds of Formula (I) which inhibit HIV integrase. The invention also describes compositions and treatments of AIDS or ARC by using these compounds.

WO 2004/004657 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/21371

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : A61K 31/4015, 31/496, 31/5377; C07D 207/36, 207/44, 403/06, 413/06.
 US CL : 514/235.5, 254.01, 423; 544/141, 372; 548/537.
 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)
 U.S. : 514/235.5, 254.01, 423; 544/141, 372; 548/537.

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 practicable, search terms used)
 CAS ONLINE STRUCTURE SEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,727,275 B2 (ZOU et al.) 27 April 2004 (27.04.2004) .	1-11

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	"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	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 23 August 2004 (23.08.2004)	Date of mailing of the international search report 31 AUG 2004
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. (703) 305-3230	Authorized officer Emily Bernhardt <i>Emily Bernhardt</i> Telephone No. (571) 272-2717