

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 July 2003 (03.07.2003)

PCT

(10) International Publication Number
WO 2003/053360 A3

(51) International Patent Classification⁷: **A61K 31/70**,
C07H 19/06

(74) Agent: **KNOWLES, Sherry, M.**; King & Spalding, 191
Peachtree Street, Atlanta, GA 30303-1763 (US).

(21) International Application Number:
PCT/US2002/040853

(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, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:
19 December 2002 (19.12.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/345,130 20 December 2001 (20.12.2001) US

(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, IE, IT, LU, MC, NL, PT, SE, SI, SK,
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(71) Applicants (*for all designated States except US*): **PHAR-**
MASSSETT LTD. [BB/BB]; The Financial Services Cen-
ter, Suite 111, Bishop's Court Hill, St. Michael, Barbados,
West Indies (BB). **BETH ISRAEL DEACONESS MED-**
ICAL CENTER [JP/US]; 330 Brookline Ave., Boston,
MA 02215 (US). **EMORY UNIVERSITY** [US/US]; 1380
South Oxford Road, Atlanta, GA 30322 (US).

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*

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **SCHINAZI, Ray-**
mond, F. [US/US]; 1524 Regency Walk Drive, Decatur,
GA 30033 (US). **SHI, Junxing** [CN/US]; 3345 McClure
Woods Drive, Duluth, GA 30096 (US). **FINGEROTH,**
Joyce, D. [US/US]; 64 Canterbury Drive, Sudbury, MA
01776 (US). **GUSTAFSON, Erik** [US/US]; 140 Plymouth
Drive #C, Norwood, MA 02062 (US).

(88) Date of publication of the international search report:
7 July 2005

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: TREATMENT OF EBV AND KHSV INFECTION AND ASSOCIATED ABNORMAL CELLULAR PROLIFERA-
TION

(57) Abstract: A method and composition for the treatment, prevention and/or prophylaxis of a host, and in particular, a human, infected with Epstein-Barr virus (EBV), is provided that includes administering an effective amount of a 5-substituted uracil nucleoside or its pharmaceutically acceptable salt or prodrug, optionally in a pharmaceutically acceptable diluent or excipient.



WO 2003/053360 A3

INTERNATIONAL SEARCH REPORT

International application No.



PCT/US02/40853

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61K 31/70; C07H 19/06 US CL : 514/50 ;536/28.53 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. : 514/50 ;536/28.53 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) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,681,933 A (CHU et al) 21 July 1987 (21.07.1987) see entire document.	1-81
Y	US 4,841,039 A (CHU et al.) 20 June 1989 (20.06.1989) see entire document.	1-81
Y	US 4,542,210 (SAKATA et al) 17 September 1985 (17.09.1985), columns 1-4.	1-81
Y	US 4,957,924 (BEAUCHAMP) 18 September 1990 (18.09.1990), see entire document.	1-81
X	US 5,356,882 (WALKER et al) 18 October 1994 (18.10.1994), columns 2-4.	1-81
X	US 5,565,438 (CHU et al) 15 October 1996 (15.10.1996), see entire document.	1-81
X	US 5,587,362 (CHU et al) 24 December 1996 (24.12.1996), see entire document.	1-81
X	US 6,022,876 (CHU et al) 8 February 2000 (08.02.2000), see entire document.	1-81
X	WATANABE et al., Synthesis of Antiviral Nucleosides: 5-Alkenyl-1-(2-deoxy-2-fluoro-B-D-arabinofuranosyl)uracils. J. Med. Chem.,1984 Vol.. 27, pp. 91-94.	1-81
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 application or patent 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 01 October 2003 (01.10.2003)		Date of mailing of the international search report 17 MAY 2005
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 <i>Mary J. Owens</i> Howard V Owens Telephone No. 703-308-1235

INTERNATIONAL SEARCH REPORT

PCT/US02/40853

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X 	YAO et al., Inhibition of Epstein-Barr Virus Replication by a NOvel L-Nucleoside, 2'Fluoro-5-methyl-B-L-arabinofuranosyluracil. Biochemical Pharmacology, Vol. 51, 1996, pp. 941-947.	1-81
X 	PAGANO. J. Epstein-Barr Virus: Therapy of Active and Latent Infection. Antiviral Chemotherapy, 1995.	1-81
X	RAHIM et al. Synthesis and Anti-Herpes Virus Activity of 2' -Deoxy-4' -Thiopyrimidine Nucleosides. J. Med. Chem., Vol. 39, 1996, pp. 789-95.	1-81

INTERNATIONAL SEARCH REPORT

PCT/US02/40853

Continuation of B. FIELDS SEARCHED Item 3:

CAPLUS
BIOSIS
WEST