

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

9900229-7
1908



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C07F 9/6561, A61K 31/675, C07F 9/6512		A1	(11) International Publication Number: WO 98/04569
			(43) International Publication Date: 5 February 1998 (05.02.98)
(21) International Application Number: PCT/US97/13244		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 25 July 1997 (25.07.97)		Published With international search report.	
(30) Priority Data: 08/686,838 ✓ 26 July 1996 (26.07.96) US 60/022,708 ✓ 26 July 1996 (26.07.96) US			
(71) Applicant: GILEAD SCIENCES, INC. [US/US]; 333 Lakeside Drive, Foster City, CA 94404 (US).			
(72) Inventors: ARIMILLI, Murty, N.; 4789 Ridgewood Drive, Fremont, CA 94555 (US). CUNDY, Kenneth, C.; 3802 Naughton Avenue, Belmont, CA 94002 (US). DOUGHERTY, Joseph, P.; 856 Castro Street, San Francisco, CA 94114 (US). KIM, Choung, U.; 1750 Elizabeth Street, San Carlos, CA 94070 (US). OLTYAI, Reza; 116 Victory Circle, San Ramon, CA 94583 (US). STELLA, Valentino, J.; 1324 Lawrence Avenue, Lawrence, KS 66049 (US).			
(74) Agents: MUENCHAU, Daryl, D. et al.; Gilead Sciences, Inc., 333 Lakeside Drive, Foster City, CA 94404 (US).			
(54) Title: NUCLEOTIDE ANALOGS			
(57) Abstract			
Novel compounds are provided that comprise esters of antiviral phosphonmethoxy nucleotide analogs with carbonates and/or carbamates having the structure $-OC(R^2)_2OC(O)X(R)_a$, wherein R^2 independently is H, C_1-C_{12} alkyl, aryl, alkenyl, alkynyl, alkenylaryl, alkynylaryl, alkaryl, arylalkynyl, arylalkenyl or arylalkyl which is unsubstituted or is substituted with halo, azido, nitro or OR^3 in which R^3 is C_1-C_{12} alkyl; X is N or O; R is independently H, C_1-C_{12} alkyl, aryl, alkenyl, alkynyl, alkenylaryl, alkynylaryl, alkaryl, arylalkynyl, arylalkenyl or arylalkyl which is unsubstituted or is substituted with halo, azido, nitro, -O-, -N-, -NR⁴-, -N(R⁴)₂- or OR^3, R⁴ independently is -H or C_1-C_8 alkyl, provided that at least one R is not H; and a is 1 or 2, with the proviso that when a is 2 and X is N, (a) two R groups can be taken together to form a carbocycle or oxygen-containing heterocycle, or (b) one R additionally can be OR^3. The compounds are useful as intermediates for the preparation of antiviral compounds or oligonucleotides, or are useful for administration directly to patients for antiviral therapy or prophylaxis. Embodiments are particularly useful when administered orally.			