(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 August 2009 (20.08.2009)

PCT

(10) International Publication Number
WO 2009/102568 A1

(51) International Patent Classification:
C07D 403/14 (2006.01) *A61K 31/4178* (2006.01)
C07D 405/14 (2006.01) *A61P 31/14* (2006.01)

(21) International Application Number:
PCT/US2009/032830

(22) International Filing Date:
2 February 2009 (02.02.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/028,266 13 February 2008 (13.02.2008) US

(71) Applicant *(for all designated States except US)*: **BRISTOL-MYERS SQUIBB COMPANY** [US/US]; Route 206 and Province Line Road, Princeton, New Jersey 08543-4000 (US).

(72) Inventors; and

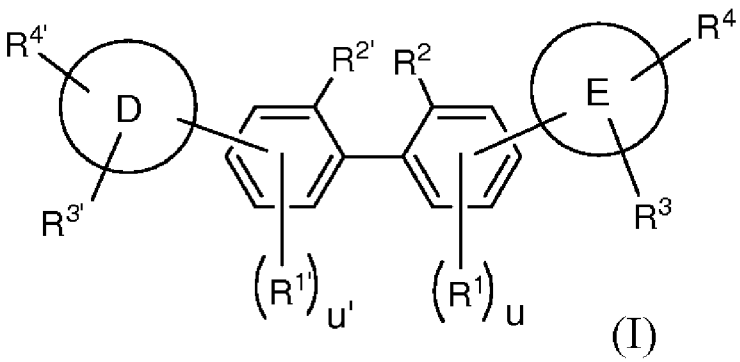
(75) Inventors/Applicants *(for US only)*: **BACHAND, Carol** [CA/CA]; 119 Place Mercure, Candiac, Québec J5R 1B1 (CA). **BELEMA, Makonen** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **DEON, Daniel, H.** [CA/CA]; 401-4905 Av. Colomb, Brossard, Québec J4Z 3T2 (CA). **GOOD, Andrew, C.** [US/US]; 52 High Hill Road, Wallingford, CT 06492 (US). **GOODRICH, Jason** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **JAMES, Clint, A.** [CA/CA]; 500 Boulevard Quinn, Longueuil, Québec J4H 2N4 (CA). **LAVOIE, Rico** [CA/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **LOPEZ, Omar, D.** [AR/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **MARTEL, Alain** [CA/CA]; 29 Rue Monette, Delson, Québec J5B 1G8 (CA). **MEANWELL, Nicholas, A.** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **NGUYEN, Van, N.** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **ROMINE, Jeffrey, Lee** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **RUEDIGER, Edward, H.** [CA/CA]; 133 St. Charles, Greenfield Park, Québec J4V 2K3 (CA). **SNYDER, Lawrence, B.** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **ST. LAURENT, Denis, R.** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **YANG, Fukang** [CN/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **LANGLEY, David, R.** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **WANG, Gan** [US/US]; c/o Bristol Myers Squibb Company, 5 Research Parkway, Wallingford, CT 06492 (US). **HAMANN, Lawrence, G.** [US/US]; 250 Massachusetts Avenue, Cambridge, MA 02139 (US).

(74) Agents: **MINGO, Pamela, A.** et al.; Bristol-Myers Squibb Company, P.O. Box 4000, Princeton, NJ 08543-4000 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG,

[Continued on next page]

(54) Title: CONFORMATIONALLY RESTRICTED BIPHENYL DERIVATIVES FOR USE AS HEPATITIS C VIRUS INHIBITORS



(I)

(57) Abstract: The present disclosure relates to compounds, compositions and methods for the treatment of hepatitis C virus (HCV) infection. Also disclosed are pharmaceutical compositions containing such compounds and methods for using these compounds in the treatment of HCV infection.

WO 2009/102568 A1

SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *with international search report (Art. 21(3))*