



(51) International Patent Classification:

C07D 211/86 (2006.01) A61K 31/47 (2006.01)
 C07D 401/12 (2006.01) A61P 11/00 (2006.01)
 C07D 405/12 (2006.01) A61P 11/06 (2006.01)
 C07D 409/12 (2006.01) A61P 19/02 (2006.01)
 C07D 417/12 (2006.01) A61P 29/00 (2006.01)
 A61K 31/4422 (2006.01)

(21) International Application Number:

PCT/EP2009/067032

(22) International Filing Date:

14 December 2009 (14.12.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/203,467 23 December 2008 (23.12.2008) US

(71) Applicant (for all designated States except US): **F. HOFFMANN-LA ROCHE AG** [CH/CH]; Grenzacherstrasse 124, CH-4070 Basel (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BROTHERTON-PLEISS, Christine E.** [US/US]; 848 Stella Court, Sunnyvale, California 94087 (US). **CAROON, Joan Marie** [US/US]; 1938 Silverwood Avenue, Mountain View, California 94043 (US). **LOPEZ-TAPIA, Francisco Javier** [MX/US]; 9 Country Lane, Mahwah, New Jersey 07430 (US). **NITZAN, Dov** [US/US]; 791 Aurora Avenue, San Jose, California 95129 (US). **WALKER, Keith Adrian**

Murray [US/US]; 12798 Canario Way, Los Altos Hills, California 94022 (US).

(74) Agent: **HEIROTH, Ulrike**; Grenzacherstrasse 124, CH-4070 Basel (CH).

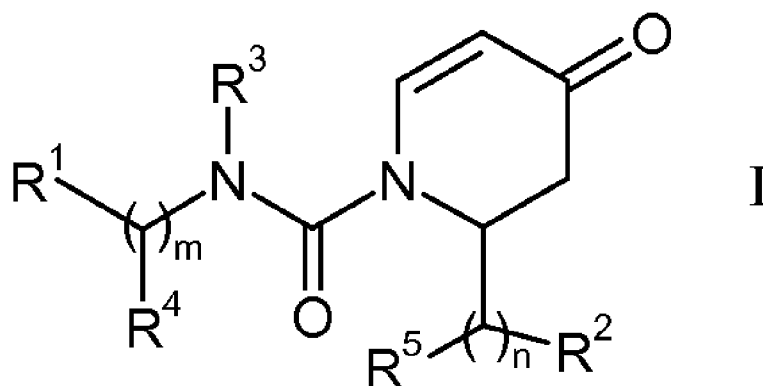
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, 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, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

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

(54) Title: DIHYDROPYRIDONE UREAS AS P2X₇ MODULATORS



(57) Abstract: Compounds of the formula (I) or pharmaceutically acceptable salts thereof, wherein m, n, R¹, R², R³, R⁴ and R⁵ are as defined herein. Also disclosed are methods of making the compounds and using the compounds for treatment of diseases associated with the P2X₇ purinergic receptor.