



- (51) International Patent Classification:
C07D 471/14 (2006.01)
- (21) International Application Number:
PCT/US2012/060971
- (22) International Filing Date:
19 October 2012 (19.10.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/549,784 21 October 2011 (21.10.2011) US
61/692,431 23 August 2012 (23.08.2012) US
- (71) Applicant: GLAXOSMITHKLINE LLC [US/US]; One Franklin Plaza, 200 North 16th Street, Philadelphia, PA 19102 (US).
- (72) Inventors; and
- (71) Applicants : BANKA, Anna, Lindsey [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). BOTYANSZKI, Janos [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). BURROUGHS, Eric, Gregory [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). CATALANO, John, George [US/US]; C/O GLAXOS-

MITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **CHERN, Wendy, Huang** [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **DICKSON, Hamilton, D.** [ZA/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **GARTLAND, Margaret, J.** [GB/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **HAMATAKE, Robert** [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **HOFLAND, Hans** [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **KEICHER, Jesse, Daniel** [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **MOORE, Christopher, Brooks** [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **SHOTWELL, John, Bradford** [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **TALLANT, Matthew, David** [US/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **THERRIEN, Jean-Philippe** [CA/US]; C/O GLAXOSMITHKLINE,

[Continued on next page]

- (54) Title: COMPOUNDS AND METHODS FOR ENHANCING INNATE IMMUNE RESPONSES

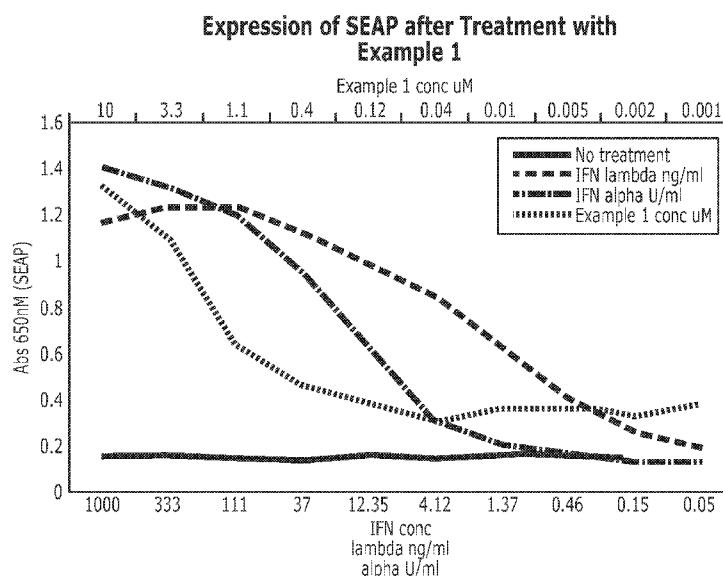


Figure 1

- (57) Abstract: Provided are certain compounds and pharmaceutically acceptable salts thereof, their pharmaceutical compositions, their methods of preparation, and their use for treating viral infections.



Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). **YOU, Shihyun** [KR/US]; C/O GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US).

(74) **Agents:** **THOMAS, Robert, Steve** et al.; GLAXOSMITHKLINE, Global Patents, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (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, BN, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, 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, RS, SE, SI, SK, SM, 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))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*