



(51) International Patent Classification:

A61K 31/538 (2006.01) A61P 31/04 (2006.01)
A61K 38/14 (2006.01)

(21) International Application Number:

PCT/US2022/021922

(22) International Filing Date:

25 March 2022 (25.03.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/166,597 26 March 2021 (26.03.2021) US

(71) Applicant: **REGENERON PHARMACEUTICALS, INC.** [US/US]; 777 Old Saw Mill River Road, Tarrytown, NY 10591 (US).

(72) Inventors: **NITTOLI, Thomas**; c/o Regeneron Pharmaceuticals, Inc., 777 Old Saw Mill River Road, Tarrytown, NY 10591 (US). **ZUMSTEG, Anna**; 910 Simmons Avenue, Kirkwood, MO 63122 (US).

(74) Agent: **VAINBERG, Irina**; Troutman Pepper Hamilton Sanders LLP, 875 Third Avenue, New York, NY 10022 (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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, ST, 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, KM, 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))

(54) Title: RIFAMYCIN ANALOGS IN COMBINATION WITH VANCOMYCIN AND USES THEREOF

(57) Abstract: The disclosure relates to rifamycin analog compounds in combination with vancomycin, and pharmaceutical compositions and dosage forms comprising same, capable of inhibiting bacterial growth (e.g., *S. aureus* growth) and treating bacterial infections (e.g., *S. aureus* infections). The disclosure further relates to methods of use thereof to inhibit bacterial growth, treat bacterial infections, and treat disease with rifamycin analog compounds in combination with vancomycin. The disclosure further relates to methods of enhancing efficacy of rifamycin analog compounds and/or vancomycin.