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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 August 2021 (19.08.2021)

WIPO | PCT

(10) International Publication Number
WO 2021/161982 A1

(51) International Patent Classification:
A61K 31/4709 (2006.01) *A61P 3/04* (2006.01)
A61P 1/00 (2006.01) *A61P 3/10* (2006.01)
A61P 1/04 (2006.01)

(21) International Application Number:
PCT/JP2021/004733

(22) International Filing Date:
09 February 2021 (09.02.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2020-020398 10 February 2020 (10.02.2020) JP

(71) Applicant: **OTSUKA PHARMACEUTICAL CO., LTD.** [JP/JP]; 2-9, Kanda Tsukasa-machi, Chiyoda-ku, Tokyo, 1018535 (JP).

(72) Inventors: **SEKI, Toyokazu**; c/o OTSUKA PHARMACEUTICAL CO., LTD., 3-2-27, Otedori, Chuo-ku, Osaka-shi, Osaka, 5400021 (JP). **NAKASHIMA, Takako**; c/o OTSUKA PHARMACEUTICAL CO., LTD., 3-2-27, Otedori, Chuo-ku, Osaka-shi, Osaka, 5400021 (JP). **FUJII, Kazuyuki**; c/o OTSUKA PHARMACEUTICAL CO., LTD., 3-2-27, Otedori, Chuo-ku, Osaka-shi, Osaka, 5400021 (JP). **TAKAGI, Hiroko**; c/o OTSUKA PHARMACEUTICAL CO., LTD., 3-2-27, Otedori, Chuo-ku, Osaka-shi, Osaka, 5400021 (JP). **CHEN, Xiuhao**; c/o OTSUKA PHARMACEUTICAL CO., LTD., 3-2-27, Otedori, Chuo-ku, Osaka-shi, Osaka, 5400021 (JP).

(74) Agent: **YAMAO, Norihito** et al.; AOYAMA & PARTNERS, Umeda Hankyu Bldg. Office Tower, 8-1, Kakuda-cho, Kita-ku, Osaka-shi, Osaka, 5300017 (JP).

(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, 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).

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

WO 2021/161982 A1

(54) Title: NOVEL MODIFYING REAGENTS FOR THE PRESENCE RATIO OF INTESTINAL MICROFLORA

(57) Abstract: The present invention relates to a pharmaceutical composition for improving intestinal flora, comprising a quinolone compound as an active ingredient.