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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 March 2022 (17.03.2022)

WIPO | PCT

(10) International Publication Number
WO 2022/053693 A1

(51) International Patent Classification:
A61K 9/08 (2006.01) *A61P 31/14* (2006.01)
A61K 47/10 (2017.01)

(21) International Application Number:
PCT/EP2021/075134

(22) International Filing Date:
13 September 2021 (13.09.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
20196087.9 14 September 2020 (14.09.2020) EP

(71) Applicant: **PHILIP MORRIS PRODUCTS S.A.** [CH/CH]; Quai Jeanrenaud 3, CH-2000 Neuchâtel (CH).

(72) Inventors: **CALVINO, Florian Alexis**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH). **GUY, Philippe Alexandre**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH). **HOENG, Julia**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH). **KOLLI, Aditya Reddy**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH). **KUCZAJ, Arkadiusz**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH). **MAJEED, Shoaib**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH). **MAZUROV, Anatoly**; 3704 Timberoak Dr., Greensboro, Guilford, North Carolina 27410 (US). **PEITSCH, Manuel**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH). **SEMREN, Tanja Zivkovic**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH). **VAN DER TOORN, Marco**; Quai Jeanrenaud 3, 2000 Neuchâtel (CH).

(74) Agent: **ELLIS, Robin**; Reddie & Grose LLP, The White Chapel Building, 10 Whitechapel High Street, Greater London, London Greater London E1 8QS (GB).

(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,

(54) Title: PHARMACEUTICAL COMPOSITION COMPRISING CHLOROQUINE AND USES THEREOF

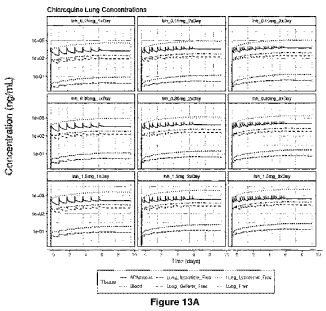


Figure 13A

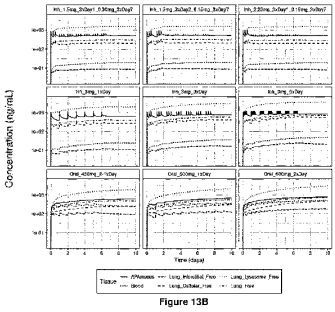


Figure 13B

(57) Abstract: The present invention relates to pharmaceutical compositions comprising chloroquine and uses thereof. More specifically, the invention relates to a pharmaceutical composition comprising chloroquine or pharmaceutically acceptable salts thereof for use in the treatment or prevention of a viral lung infection, preferably caused by Betacoronavirus, including but not limited to 2019-nCoV (coronavirus), SARS-CoV and Middle East respiratory syndrome CoV (MERS-CoV), wherein the pharmaceutical composition is administered by inhalation. The present invention provides an improved delivery into the lungs of a subject with minimum systemic exposure.

WO 2022/053693 A1

[Continued on next page]

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))*