

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
17 February 2022 (17.02.2022)



(10) International Publication Number
WO 2022/036060 A1

(51) International Patent Classification:

A61P 11/00 (2006.01) C07C 309/30 (2006.01)
A61K 31/4353 (2006.01) C07D 513/22 (2006.01)
C07C 309/29 (2006.01)

(21) International Application Number:

PCT/US2021/045691

(22) International Filing Date:

12 August 2021 (12.08.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/065,057 13 August 2020 (13.08.2020) US

(71) Applicant: VERTEX PHARMACEUTICALS INCORPORATED [US/US]; 50 Northern Avenue, Boston, Massachusetts 02210 (US).

(72) Inventors: IYEMPERUMAL, Satish Kumar; 50 Northern Avenue, Boston, Massachusetts 02210 (US). PERESYPKIN, Andrey; 50 Northern Avenue, Boston, Massachusetts 02210 (US). SHI, Yi; 50 Northern Avenue, Boston, Massachusetts 02210 (US). SHRESTHA, Muna; 50 Northern Avenue, Boston, Massachusetts 02210 (US).

(74) Agent: MCDONELL, Leslie A. et al.; Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, 901 New York Avenue, NW, Washington, District of Columbia 20001 (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, 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,

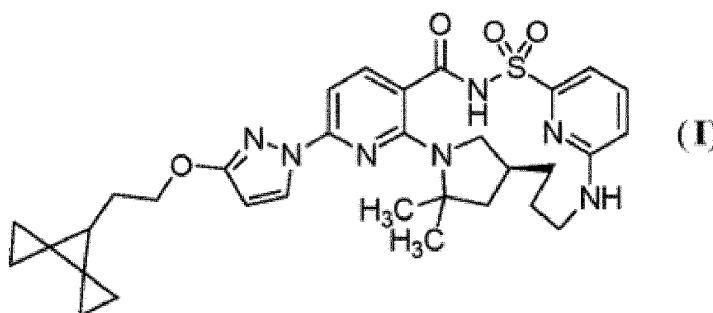
NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(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))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) Title: CRYSTALLINE FORMS OF CFTR MODULATORS



(57) Abstract: Crystalline forms of salts of Compound I are disclosed. Pharmaceutical compositions comprising the same, methods of treating cystic fibrosis using the same, and methods for making the same are also disclosed.



WO 2022/036060 A1