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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
01 February 2024 (01.02.2024)

WIPO | PCT

(10) International Publication Number
WO 2024/026058 A1

(51) International Patent Classification:
A61P 9/00 (2006.01) *A61K 31/495* (2006.01)
C07D 471/04 (2006.01)

(21) International Application Number:
PCT/US2023/028919

(22) International Filing Date:
28 July 2023 (28.07.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PCT/CN2022/109030
29 July 2022 (29.07.2022) CN

(71) Applicant: **MYOKARDIA, INC.** [US/US]; 1000 Sierra Point Parkway, Brisbane, California 94005 (US).

(72) Inventors: **YU, Ying**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **ZHANG, David John**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **WANG, Juan**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **HUANG, Neal**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **LOUGHREY, Jonathan**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **SHARP, Lorraine**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **DALENS, Catherine**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **TAILLEZ, Franck**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **MENEGOTTO, Jerome**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **TUMMA, Harikirshna**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **WAN, Lin**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **WANG, Wei**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **YANG, Rongfei**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **LI, Jane**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US). **WANG, Ruiping**; 1000 Sierra Point Parkway, Bisbane, California 94005 (US). **LU, Yue**; 1000 Sierra Point Parkway, Brisbane, California 94005 (US).

(74) Agent: **CHIPOURAS, Andrew S.**; 650 Trade Centre Way, Suite 200, Kalamazoo, Michigan 49002 (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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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, ME, 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 2024/026058 A1

(54) Title: CRYSTALLINE FORMS OF (6S,7S)-6-FLUORO-7-(2-FLUORO-5-METHYLPHENYL)- 3-(TETRAHYDRO-2H-PYRAN-4-YL)-5,6,7,8-TETRAHYDROPYRIDO[2,3- D]PYRIMIDINE-2,4(LH,3H)-DIONE

(57) Abstract: The present invention provides crystalline forms of (6S,7S)-6-fluoro-7-(2-fluoro-5-methylphenyl)-3-(tetrahydro-2H-pyran-4-yl)-5,6,7,8-tetrahydropyrido[2,3-d]pyrimidine-2,4(1H,3H)-dione ("Compound I"). Also provided are related pharmaceutical compositions, methods of preparation, and methods of treating hypertrophic cardiomyopathy (HCM), heart failure with preserved ejection fraction (HFpEF), diastolic dysfunction, left ventricular hypertrophy, and other cardiac diseases.