

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

(19) World Intellectual Property  
Organization

International Bureau

(43) International Publication Date  
14 September 2023 (14.09.2023)



(10) International Publication Number  
**WO 2023/172818 A1**

(51) International Patent Classification:

A61K 31/38 (2006.01) C07D 333/02 (2006.01)  
A61K 31/381 (2006.01) A61K 31/33 (2006.01)  
C07D 333/00 (2006.01)

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).

(21) International Application Number:

PCT/US2023/062994

(22) International Filing Date:

22 February 2023 (22.02.2023)

Published:

— with international search report (Art. 21(3))

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/318,281 09 March 2022 (09.03.2022) US

(71) Applicant: **KIORA PHARMACEUTICALS GMBH**  
[AT/AT]; Reisnerstraße 34/1, 1030 Vienna (AT).

(71) Applicant (for EG only): **KIORA PHARMACEUTICALS, INC** [US/US]; 1371 E 2100 S, Suite 200, Salt Lake City, Utah 84105 (US).

(72) Inventors: **SPERL, Stefan**; Stauraczgasse 7/15, 1050 Wien (AT). **PLASSER, Lisa**; Gumpendorferstraße 41/12, 1060 Wien (AT). **SULEIMAN, Osama**; 250 Cambridge Science Park, Milton Road, Cambridge CB4 0WE (GB). **SCOTT, Christopher Daniel**; 250 Cambridge Science Park, Milton Road, Cambridge CB4 0WE (GB). **DEL RIO GANCEDO, Susana**; 250 Cambridge Science Park, Milton Road, Cambridge CB4 0WE (GB). **HARRIS, Joseph Stephen**; 250 Cambridge Science Park, Milton Road, Cambridge CB4 0WE (GB).

(74) Agent: **WOODHOUSE, Scott M.**; MEDLER FERRO WOODHOUSE & MILLS PLLC, 8201 Greensboro Drive, Suite 1060, McLean, Virginia 22102 (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, 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,

(54) Title: POLYMORPHS OF A DIHYDROOROTATE DEHYDROGENASE (DHOD) INHIBITOR

(57) Abstract: The present disclosure provides polymorphs of 3-(2,3,5,6-tetrafluoro-3'-trifluoromethoxy-biphenyl-4-ylcarbamoyl)-thiophene-2-carboxylic acid, and methods of making such polymorphs. The present disclosure further provides pharmaceutical compositions and kits comprising polymorphs of the invention, and methods of treating, preventing, or ameliorating a disease or condition comprising administering a polymorph of the invention.

WO 2023/172818 A1