Innovation, Sciences et Développement économique Canada
Office de la Propriété Intellectuelle du Canada

Innovation, Science and Economic Development Canada
Canadian Intellectual Property Office

CA 3079273 A1 2019/04/25

(21) 3 079 273

(12) DEMANDE DE BREVET CANADIEN
CANADIAN PATENT APPLICATION

(13) A1

(86) Date de dépôt PCT/PCT Filing Date: 2018/10/18
(87) Date publication PCT/PCT Publication Date: 2019/04/25
(85) Entrée phase nationale/National Entry: 2020/04/15
(86) N° demande PCT/PCT Application No.: US 2018/056428
(87) N° publication PCT/PCT Publication No.: 2019/079540
(30) Priorité/Priority: 2017/10/18 (US62/573,917)

(51) Cl.Int./Int.Cl. *C07D 239/42* (2006.01), *A61K 31/4709* (2006.01), *A61K 31/506* (2006.01), *C07D 401/12* (2006.01)

(71) Demandeur/Applicant:
EPIZYME, INC., US

(72) Inventeurs/Inventors:
CAMPBELL, JOHN EMMERSON, US;
DUNCAN, KENNETH WILLIAM, US;
MILLS, JAMES EDWARD JOHN, GB;
MUNCHHOF, MICHAEL JOHN, US

(74) Agent: BORDEN LADNER GERVAIS LLP

(54) Titre : COMPOSES HETEROCYCLIQUES SUBSTITUES PAR UNE AMINE, UTILISES COMME INHIBITEURS DE L'EHMT2, SELS DE CEUX-CI, ET LEURS METHODES DE SYNTHESE

(54) Title: AMINE-SUBSTITUTED HETEROCYCLIC COMPOUNDS AS EHMT2 INHIBITORS, SALTS THEREOF, AND METHODS OF SYNTHESIS THEREOF

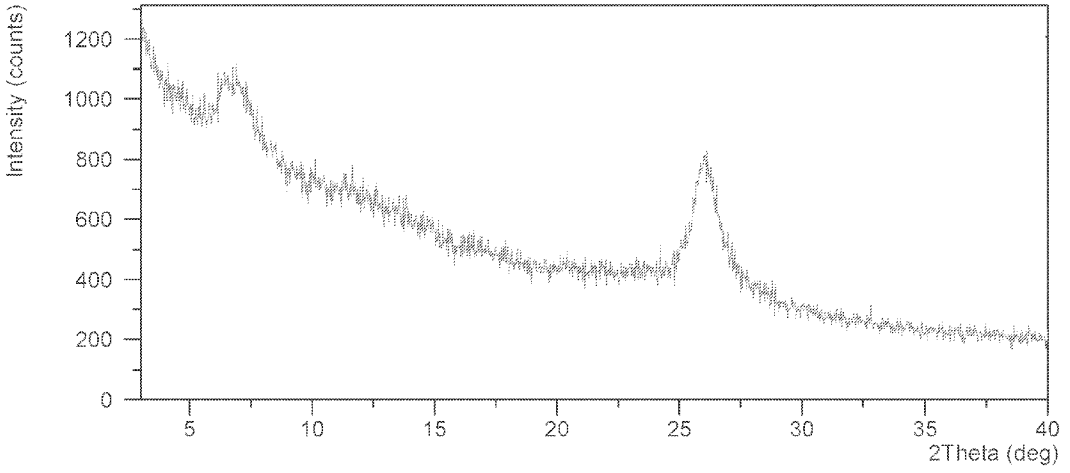


Figure 1A

(57) Abrégé/Abstract:
The present disclosure relates to amine-substituted heterocyclic compounds. The present disclosure also relates to pharmaceutical compositions containing these compounds and methods of treating a disorder (e.g., cancer) by administering an amine-substituted heterocyclic heterocyclic compound disclosed herein or a pharmaceutical composition thereof to subjects in need thereof. The present disclosure also relates to the use of such compounds for research or other non-therapeutic purposes.

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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 April 2019 (25.04.2019)

WIPO | PCT

(10) International Publication Number
WO 2019/079540 A1

(51) International Patent Classification:
C07D 239/42 (2006.01) *A61K 31/506* (2006.01)
A61K 31/4709 (2006.01) *C07D 401/12* (2006.01)

(21) International Application Number:
PCT/US2018/056428

(22) International Filing Date:
18 October 2018 (18.10.2018)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/573,917 18 October 2017 (18.10.2017) US

(71) Applicant: **EPIZYME, INC.** [US/US]; 400 Technology Square, 4th Floor, Cambridge, Massachusetts 02139 (US).

(72) Inventors: **CAMPBELL, John Emmerson**; 581 Mt. Auburn Street, Unit #1, Cambridge, Massachusetts 02138 (US). **DUNCAN, Kenneth William**; 105 Brian Lane, Westwood, Massachusetts 02090 (US). **MILLS, James Edward John**; Holly End, The Street, Worth, Deal Kent CT14 0DF (GB). **MUNCHHOF, Michael John**; 355 Frost Lane, Corvallis, Montana 59828 (US).

(74) Agent: **ERLACHER, Heidi** et al.; Cooley LLP, 1299 Pennsylvania Avenue, Suite 700, Washington, District of Columbia 20004 (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, 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, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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,

(54) Title: AMINE-SUBSTITUTED HETEROCYCLIC COMPOUNDS AS EHMT2 INHIBITORS, SALTS THEREOF, AND METHODS OF SYNTHESIS THEREOF

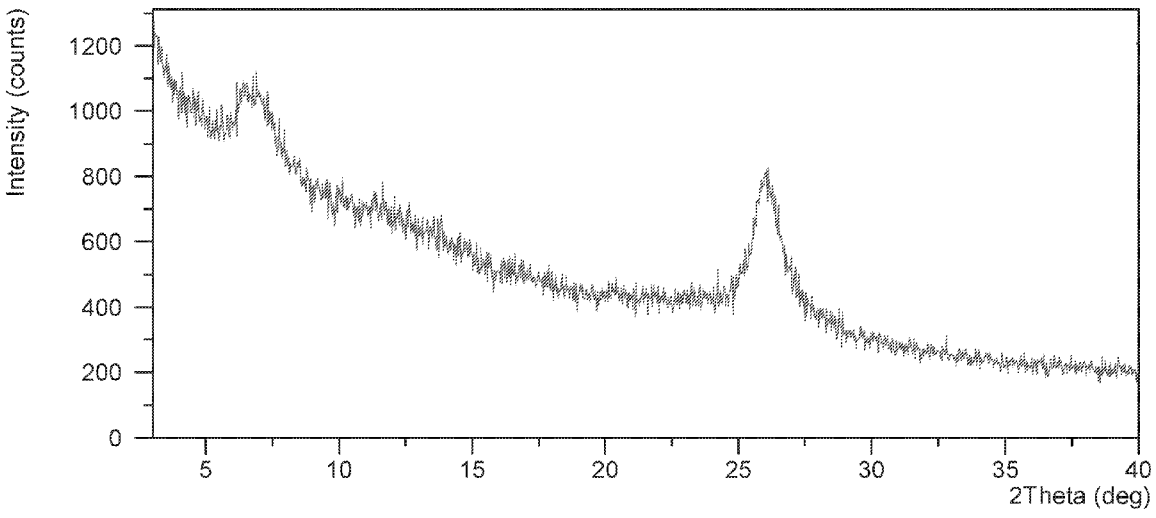


Figure 1A

(57) Abstract: The present disclosure relates to amine-substituted heterocyclic compounds. The present disclosure also relates to pharmaceutical compositions containing these compounds and methods of treating a disorder (e.g., cancer) by administering an amine-substituted heterocyclic heterocyclic compound disclosed herein or a pharmaceutical composition thereof to subjects in need thereof. The present disclosure also relates to the use of such compounds for research or other non-therapeutic purposes.

WO 2019/079540 A1

[Continued on next page]

WO 2019/079540 A1

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

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

DEMANDE OU BREVET VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVET COMPREND PLUS D'UN TOME.

CECI EST LE TOME 1 DE 2
CONTENANT LES PAGES 1 À 181

NOTE : Pour les tomes additionels, veuillez contacter le Bureau canadien des brevets

JUMBO APPLICATIONS/PATENTS

THIS SECTION OF THE APPLICATION/PATENT CONTAINS MORE THAN ONE VOLUME

THIS IS VOLUME 1 OF 2
CONTAINING PAGES 1 TO 181

NOTE: For additional volumes, please contact the Canadian Patent Office

NOM DU FICHIER / FILE NAME :

NOTE POUR LE TOME / VOLUME NOTE:

AMINE-SUBSTITUTED HETEROCYCLIC COMPOUNDS AS EHMT2 INHIBITORS, SALTS THEREOF, AND METHODS OF SYNTHESIS THEREOF

RELATED APPLICATION

[001] This application claims benefit of, and priority to, U.S. Application No. 62/573,917, filed on October 18, 2017, the entire content of which is incorporated herein by reference.

BACKGROUND

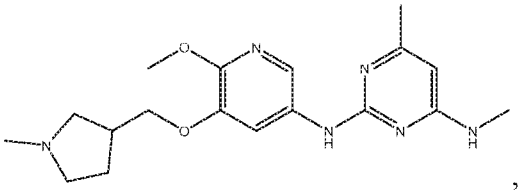
[002] Methylation of protein lysine residues is an important signaling mechanism in eukaryotic cells, and the methylation state of histone lysines encodes signals that are recognized by a multitude of proteins and protein complexes in the context of epigenetic gene regulation.

[003] Histone methylation is catalyzed by histone methyltransferases (HMTs), and HMTs have been implicated in various human diseases. HMTs can play a role in either activating or repressing gene expression, and certain HMTs (*e.g.*, euchromatic histone-lysine N-methyltransferase 2 or EHMT2, also called G9a) may methylate many nonhistone proteins, such as tumor suppressor proteins (*see*, *e.g.*, Liu *et al.*, *Journal of Medicinal Chemistry* 56:8931-8942, 2013 and Krivega *et al.*, *Blood* 126(5):665-672, 2015).

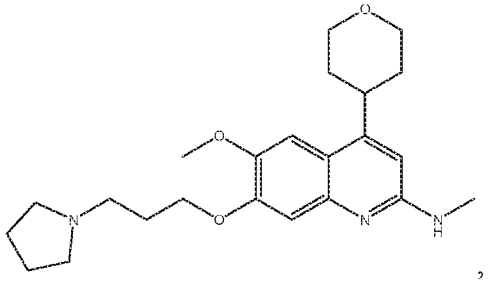
[004] Two related HMTs, EHMT1 and EHMT2, are overexpressed or play a role in diseases and disorders such as sickle cell anemia (*see*, *e.g.*, Renneville *et al.*, *Blood* 126(16): 1930–1939, 2015) and proliferative disorders (*e.g.*, cancers), and other blood disorders.

SUMMARY

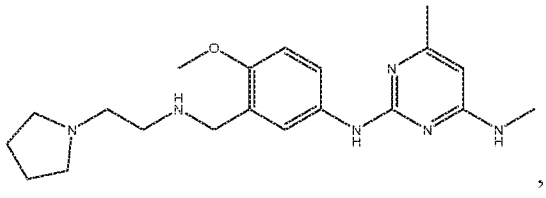
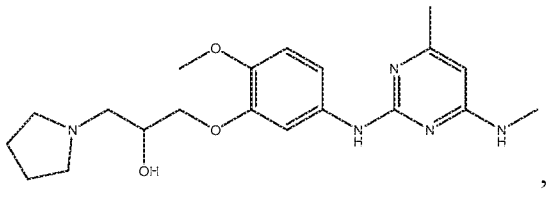
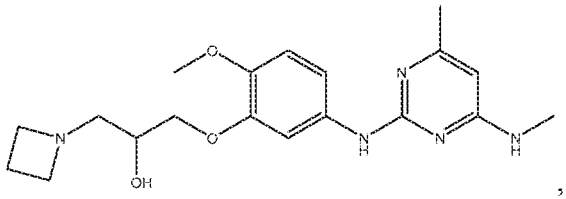
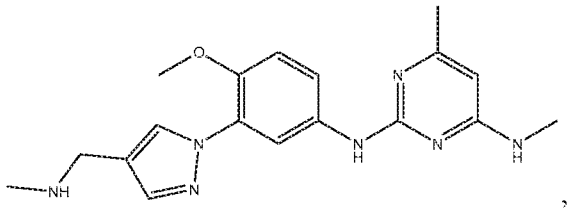
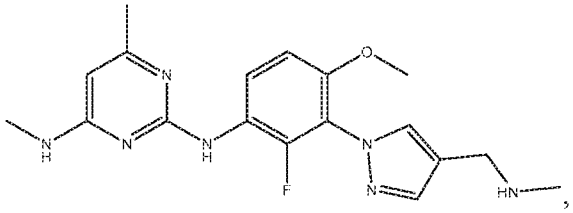
[005] In one aspect, the present disclosure provides, *inter alia*, compounds selected from the group consisting of



,



,


,

,

,

,

,

tautomers thereof, pharmaceutically acceptable salts thereof, and pharmaceutically acceptable salts of the tautomers.

[006] In some aspects, the present disclosure features pharmaceutical compositions comprising one or more pharmaceutically acceptable carriers and one or more of the compounds of the present disclosure.

[007] In some aspects, the present disclosure features a method of inhibiting one or more HMTs (e.g., EHMT1 and/or EHMT2). The method includes administering to a subject in need thereof a therapeutically effective amount of a compound of the present disclosure, or a tautomer thereof, or a pharmaceutically acceptable salt of the compound or the tautomer. In some embodiments, the subject has one or more disorders associated with the activity of one or more HMTs (e.g., EHMT1 and/or EHMT2), thereby benifiting from the inhibition of one or more HMTs (e.g., EHMT1 and/or EHMT2). In some embodiments, the subject has an EHMT-mediated disorder. In some embodiments, the subject has a disease, disorder, or condition that is mediated at least in part by the activity of one or both of EHMT1 and EHMT2.

[008] In some aspects, the present disclosure features a method of preventing or treating an EHMT-mediated disorder. The method includes administering to a subject in need thereof a therapeutically effective amount of a compound of the present disclosure, or a tautomer thereof, or a pharmaceutically acceptable salt of the compound or the tautomer. The EHMT-mediated disorder is a disease, disorder, or condition that is mediated at least in part by the activity of EHMT1 or EHMT2 or both. In some embodiments, the EHMT-mediated disorder is a blood

disease or disorder. In some embodiments, the EHMT-mediated disorder is selected from proliferative disorders (*e.g.*, cancers such as leukemia, hepatocellular carcinoma, prostate carcinoma, and lung cancer), addiction (*e.g.*, cocaine addiction), and mental retardation.

[009] In some embodiments, the EHMT-mediated disease or disorder comprises a disorder that is associated with gene silencing by one or more HMTs (e.g., EHMT1 and/or EHMT2). In some embodiments, EHMT-mediated disease or disorder is a blood disease or disorder associated with gene silencing by EHMT2.

[010] In some embodiments, the method comprises the step of administering to a subject having a disease or disorder associated with gene silencing by one or more HMTs (e.g., EHMT1 and/or EHMT2) a therapeutically effective amount of one or more compounds of the present disclosure, wherein the compound(s) inhibits histone methyltransferase activity of one or more HMTs (e.g., EHMT1 and/or EHMT2), thereby treating the disease or disorder.

[011] In some embodiments, the blood disease or disorder is selected from the group consisting of sickle cell anemia and beta-thalassemia.

[012] In some embodiments, the blood disease or disorder is hematological cancer.

[013] In some embodiments, the hematological cancer is acute myeloid leukemia (AML) or chronic lymphocytic leukemia (CLL).

[014] In some embodiments, the method further comprises the steps of performing an assay to detect the degree of histone methylation by one or more HMTs (e.g., EHMT1 and/or EHMT2) in a sample comprising blood cells from a subject in need thereof. In some embodiments, performing the assay to detect methylation of H3-K9 in the histone substrate comprises measuring incorporation of labeled methyl groups. In some embodiments, the labeled methyl groups are isotopically labeled methyl groups. In some embodiments, performing the assay to detect methylation of H3-K9 in the histone substrate comprises contacting the histone substrate with an antibody that binds specifically to dimethylated H3-K9.

[015] Unless otherwise stated, any description of a method of treatment includes use of the compounds to provide such treatment or prophylaxis as is described herein, as well as use of the compounds to prepare a medicament to treat or prevent such condition. The treatment includes treatment of human or non-human animals including rodents and other disease models. Methods described herein may be used to identify suitable candidates for treating or preventing EHMT-mediated disorders. For example, the disclosure also provides methods of identifying an inhibitor of EHMT1 or EHMT2 or both.

[016] In some aspects, the present disclosure features a method of inhibiting conversion of H3-K9 to dimethylated H3-K9. The method comprises the step of contacting a mutant EHMT, the wild-type EHMT, or both, with a histone substrate comprising H3-K9 and an effective amount of a compound of the present disclosure, wherein the compound inhibits histone methyltransferase activity of EHMT, thereby inhibiting conversion of H3-K9 to dimethylated H3-K9.

[017] In some aspects, the present disclosure features compounds disclosed herein for use in inhibiting one or both of EHMT1 and EHMT2 in a subject in need thereof.

[018] In some aspects, the present disclosure features compounds disclosed herein for use in preventing or treating an EHMT-mediated disorder in a subject in need thereof.

[019] In some aspects, the present disclosure features compounds disclosed herein for use in preventing or treating a blood disorder in a subject in need thereof.

[020] In some aspects, the present disclosure features compounds disclosed herein for use in preventing or treating a cancer in a subject in need thereof.

[021] In some aspects, the present disclosure features use of a compound of the present disclosure in the manufacture of a medicament for inhibiting one or both of EHMT1 and EHMT2 in a subject in need thereof.

[022] In some aspects, the present disclosure features use of a compound of the present disclosure in the manufacture of a medicament for preventing or treating an EHMT-mediated disorder in a subject in need thereof.

[023] In some aspects, the present disclosure features use of a compound of the present disclosure in the manufacture of a medicament for preventing or treating a blood disorder in a subject in need thereof.

[024] In some aspects, the present disclosure features use of a compound of the present disclosure in the manufacture of a medicament for preventing or treating a cancer in a subject in need thereof.

[025] Further, the compounds or methods described herein can be used for research (e.g., studying epigenetic enzymes) and other non-therapeutic purposes.

[026] In some embodiments, the compounds of the present disclosure do not show significant inhibitory activity towards a kinase. Absence of significant kinase inhibition can be determined by measuring IC50 values for one or more kinases of interest, wherein IC50 values greater than a certain reference value are indicative of low or no inhibitory activity towards a given kinase. For example, in some embodiment, the compounds of the present disclosure inhibit a kinase with an

enzyme inhibition IC_{50} value of about 100 nM or greater, 1 μM or greater, 10 μM or greater, 100 μM or greater, or 1000 μM or greater.

[027] In some embodiments, one or more of the compounds of the present disclosure inhibit a kinase with an enzyme inhibition IC_{50} value of about 1 mM or greater.

[028] In some embodiments, one or more of the compounds of the present disclosure inhibit a kinase with an enzyme inhibition IC_{50} value of 1 μM or greater, 2 μM or greater, 5 μM or greater, or 10 μM or greater, wherein the kinase is one or more of the following: AbI, AurA, CHK1, MAP4K, IRAK4, JAK3, EphA2, FGFR3, KDR, Lck, MARK1, MNK2, PKCb2, SIK, and Src.

[029] Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this disclosure belongs. In the specification, the singular forms also include the plural unless the context clearly dictates otherwise. Although methods and materials similar or equivalent to those described herein can be used in the practice or testing of the present disclosure, suitable methods and materials are described below. All publications, patent applications, patents and other references mentioned herein are incorporated by reference. The references cited herein are not admitted to be prior art to the claimed invention. In the case of conflict, the present specification, including definitions, will control. In addition, the materials, methods and examples are illustrative only and are not intended to be limiting. In the case of conflict between the chemical structures and names of the compounds disclosed herein, the chemical structures will control.

[030] Other features and advantages of the disclosure will be apparent from the following detailed description and claims.

Brief Descriptions Of Figures

[031] **Figure 1A** shows XRPD pattern of Compound 1R freebase Type A.

[032] **Figure 1B** shows XRPD pattern of Compound 1R freebase Type B.

[033] **Figure 2A** shows XRPD pattern of Compound 2 freebase Type A.

[034] **Figure 2B** shows XRPD overlay of Compound 2 freebase Type A before and after DVS.

[035] **Figure 3** shows XRPD pattern of Compound 3 freebase Type A.

[036] **Figure 4A** shows XRPD pattern of Compound 4R freebase Type A

[037] **Figure 4B** shows XRPD pattern of Compound 4R freebase Type B.

[038] **Figure 5A** shows XRPD pattern of Compound 5R freebase Type A.

[039] **Figure 5B** shows XRPD of Compound 5R freebase Type A, and XRPD of the compound after heating to 130 °C (freebase Type B).

[040] **Figure 5C** shows XRPD pattern of Compound 5R freebase Type B.

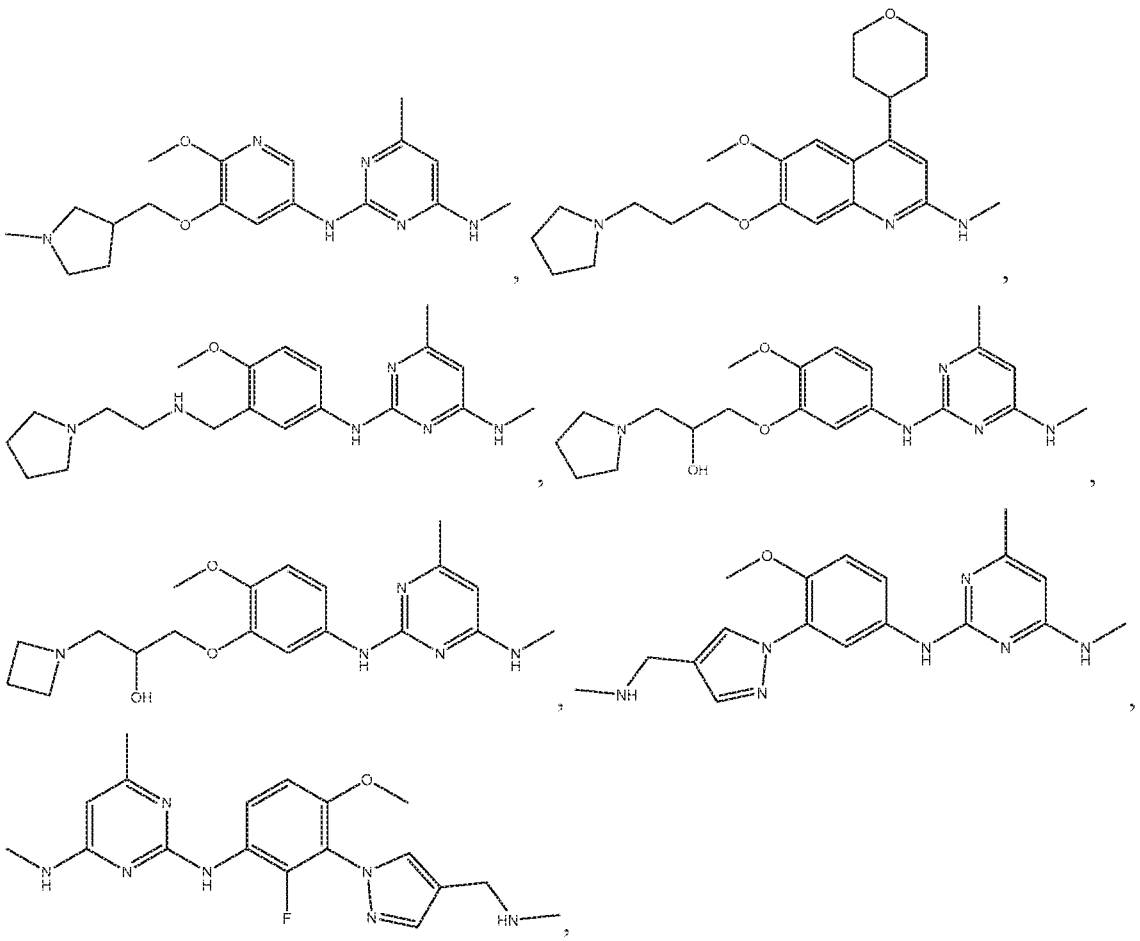
[041] **Figure 5D** shows XRPD overlay of Compound 5R freebase Type B before and after DVS.

[042] **Figure 6** shows XRPD pattern of Compound 6 freebase Type A.

DETAILED DESCRIPTION

[043] The present disclosure provides novel amine-substituted heterocyclic compounds, synthetic methods for making the compounds, pharmaceutical compositions containing them and various uses of the compounds.

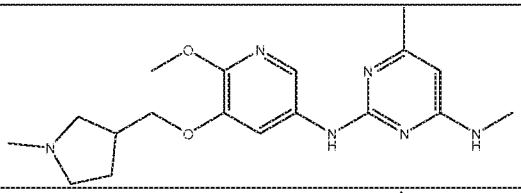
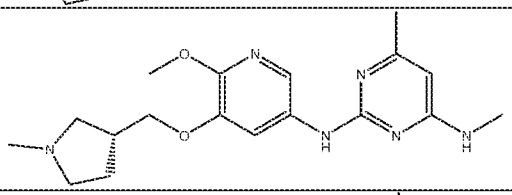
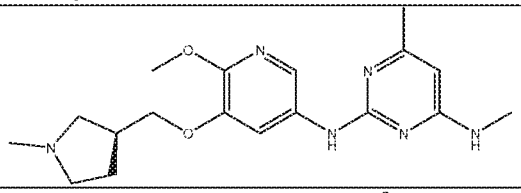
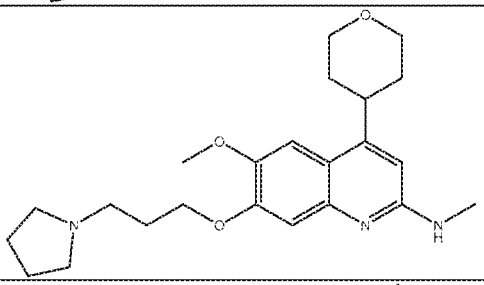
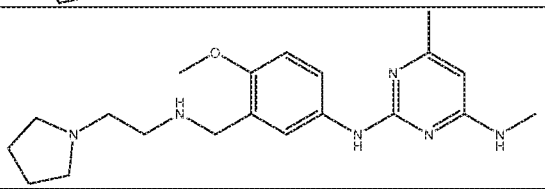
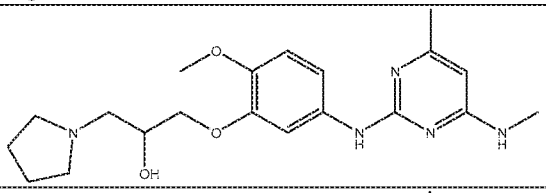
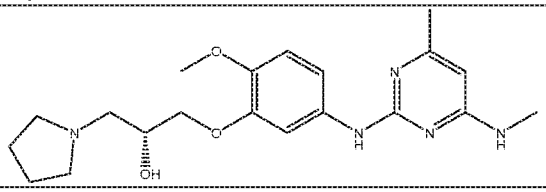
[044] In one aspect, the present disclosure provides a compound selected from the group consisting of

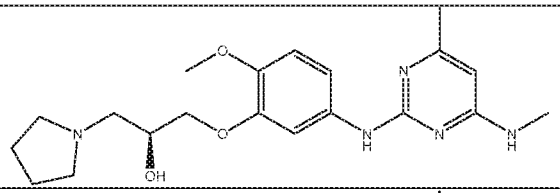
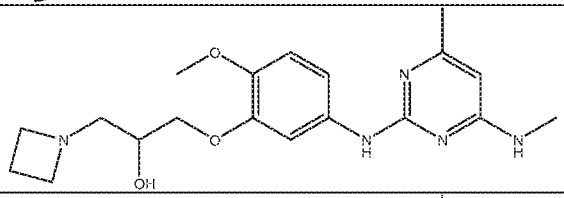
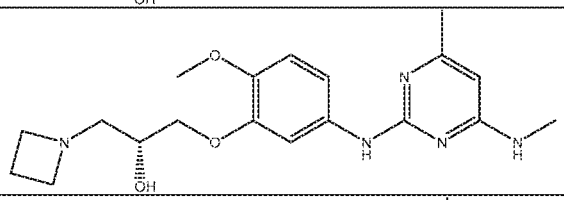
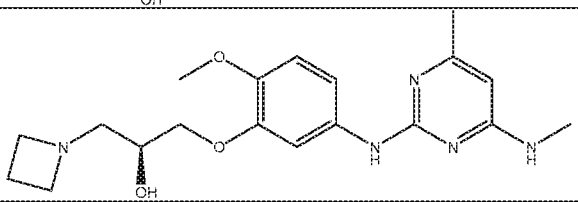
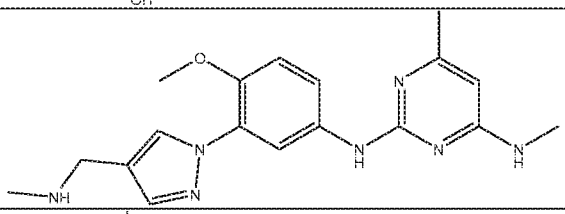
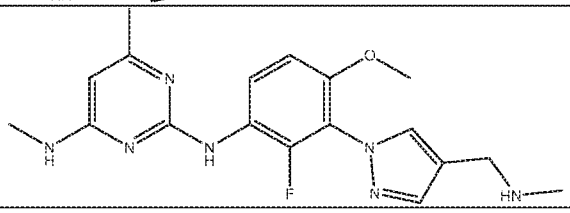


tautomers thereof, pharmaceutically acceptable salts thereof, and pharmaceutically acceptable salts of the tautomers.

[045] In some embodiments, the compound is selected from the compounds listed in Table 1, pharmaceutically acceptable salts thereof, and pharmaceutically acceptable salts of the tautomers.

Table 1

Compound No.	Structure
1	
1R	
1S	
2	
3	
4	
4R	

Compound No.	Structure
4S	
5	
5R	
5S	
6	
7	

[046] In some embodiments, the compound is selected from the compounds listed in Table 1.

[047] In some embodiments, the compound is a crystalline form of any one of the compounds listed in Table 1.

[048] In some embodiments, the compound (e.g., the crystalline form of any one of the compounds listed in Table 1) is an anhydrate (e.g., an anhydrate of any one of the compounds listed in Table 1).

[049] In some embodiments, the compound is selected from pharmaceutically acceptable salts of the compounds listed in Table 1.

[050] In some embodiments, the compound is a crystalline form of any one of the pharmaceutically acceptable salts of the compounds listed in Table 1.

[051] In some embodiments, the compound (e.g., the crystalline form of any one of the pharmaceutically acceptable salts of the compounds listed in Table 1) is an anhydrate (e.g., an anhydrate of any one of the pharmaceutically acceptable salts of the compounds listed in Table 1).

[052] In some embodiments, the compound is selected from hydrochloride salts, sulfate salts, glycolate salts, adipate salts, succinate salts, oxalate salts, phosphate salts, fumarate salts, hippurate salts, gentisate salts, and benzoate salts of the compounds listed in Table 1.

[053] In some embodiments, the compound is selected from hydrochloride salts of the compounds listed in Table 1.

[054] In some embodiments, the compound is a crystalline form of any one of the hydrochloride salts of the compounds listed in Table 1.

[055] In some embodiments, the compound is selected from sulfate salts of the compounds listed in Table 1.

[056] In some embodiments, the compound is a crystalline form of any one of the sulfate salts of the compounds listed in Table 1.

[057] In some embodiments, the compound is selected from glycolate salts of the compounds listed in Table 1.

[058] In some embodiments, the compound is a crystalline form of any one of the glycolate salts of the compounds listed in Table 1.

[059] In some embodiments, the compound is selected from adipate salts of the compounds listed in Table 1.

[060] In some embodiments, the compound is a crystalline form of any one of the adipate salts of the compounds listed in Table 1.

[061] In some embodiments, the compound is selected from succinate salts of the compounds listed in Table 1.

[062] In some embodiments, the compound is a crystalline form of any one of the succinate salts of the compounds listed in Table 1.

[063] In some embodiments, the compound is selected from oxalate salts of the compounds listed in Table 1.

[064] In some embodiments, the compound is a crystalline form of any one of the oxalate salts of the compounds listed in Table 1.

[065] In some embodiments, the compound is selected from phosphate salts of the compounds listed in Table 1.

[066] In some embodiments, the compound is a crystalline form of any one of the phosphate salts of the compounds listed in Table 1.

[067] In some embodiments, the compound is selected from fumarate salts of the compounds listed in Table 1.

[068] In some embodiments, the compound is a crystalline form of any one of the fumarate salts of the compounds listed in Table 1.

[069] In some embodiments, the compound is selected from hippurate salts of the compounds listed in Table 1.

[070] In some embodiments, the compound is a crystalline form of any one of the hippurate salts of the compounds listed in Table 1.

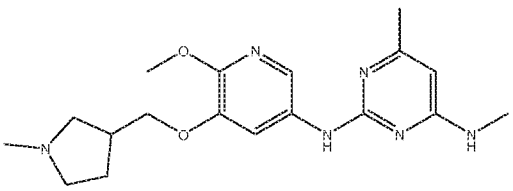
[071] In some embodiments, the compound is selected from gentisate salts of the compounds listed in Table 1.

[072] In some embodiments, the compound is a crystalline form of any one of the gentisate salts of the compounds listed in Table 1.

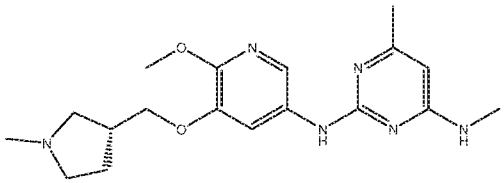
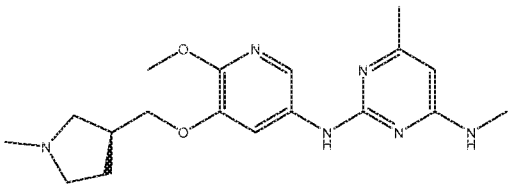
[073] In some embodiments, the compound is selected from benzoate salts of the compounds listed in Table 1.

[074] In some embodiments, the compound is a crystalline form of any one of the benzoate salts of the compounds listed in Table 1.

Compound 1

[075] In some embodiments, the compound is  (Compound 1), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[076] In some embodiments, the compound is Compound 1.

[077] In some embodiments, the compound is  (Compound 1R),  (Compound 1S), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[078] In some embodiments, the compound is Compound 1R or Compound 1S.

[079] In some embodiments, the compound is Compound 1R, a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[080] In some embodiments, the compound is Compound 1R.

[081] In some embodiments, the compound is a crystalline form of Compound 1R.

[082] In some embodiments, the crystalline form of Compound 1R is an anhydrate.

[083] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 1R.

[084] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 1R.

[085] In some embodiments, the crystalline form of the pharmaceutically acceptable salt of Compound 1R is an anhydrate.

[086] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 1R.

Compound 1R Freebase Type A

[087] In some embodiments, the compound is Compound 1R.

[088] In some embodiments, the compound is a crystalline form of Compound 1R.

[089] In some embodiments, the compound (e.g., the crystalline form of Compound 1R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 65 °C and about 105 °C, between about 70 °C and about 100 °C, between about 75 °C and about 95 °C, between about 84 °C and about 90 °C, or between about 86 °C and about 88 °C.

[090] In some embodiments, the compound (e.g., the crystalline form of Compound 1R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at at between about 180 °C and about 220 °C, between about 185 °C and about 215 °C, between about 190 °C and about 210 °C, between about 195 °C and about 205 °C, or between about 198 °C and about 200 °C.

[091] In some embodiments, the compound (e.g., the crystalline form of Compound 1R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 86.9 °C and/or at about 199.1 °C.

[092] In some embodiments, the compound (e.g., the crystalline form of Compound 1R) has an endothermic peak top temperature in modulated differential scanning calorimeter (mDSC) analysis at between about 190 °C and about 230 °C, between about 195 °C and about 225 °C, between about 200 °C and about 220 °C, between about 204 °C and about 212 °C, between about 206 °C and about 210 °C, or between about 207 °C and about 209 °C.

[093] In some embodiments, compound (e.g., the crystalline form of Compound 1R) has an endothermic peak top temperature in modulated differential scanning calorimeter (mDSC) analysis at about 208 °C.

Compound 1R Freebase Type B

[094] In some embodiments, the compound is Compound 1R.

[095] In some embodiments, the compound is a crystalline form of Compound 1R.

[096] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least one peak selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[097] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least two peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[098] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least three peaks selected from

6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[099] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least four peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0100] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least five peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0101] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least six peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0102] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least seven peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0103] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having one peak selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0104] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having two peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1,

11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0105] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having three peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0106] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having four peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0107] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having five peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0108] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having six peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0109] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having seven peaks selected from 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0110] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at 6.4±0.2, 11.8±0.2, 14.2±0.2, 18.21±0.2, 19.2±0.2, 25.7±0.2, 26.4±0.2, and 29.3±0.2 °2θ (e.g., 6.4±0.1, 11.8±0.1, 14.2±0.1, 18.21±0.1, 19.2±0.1, 25.7±0.1, 26.4±0.1, and 29.3±0.1 °2θ) using Cu Kα radiation.

[0111] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 25.5 to about 25.9, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[0112] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 14.0 to about 14.4, from about 25.5 to about 25.9, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[0113] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 14.0 to about 14.4, from about 18.0 to about 18.4, from about 25.5 to about 25.9, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[0114] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 14.0 to about 14.4, from about 18.0 to about 18.4, from about 19.0 to about 19.4, from about 25.5 to about 25.9, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[0115] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 11.6 to about 12.0, from about 14.0 to about 14.4, from about 18.0 to about 18.4, from about 19.0 to about 19.4, from about 25.5 to about 25.9, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[0116] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 11.6 to about 12.0, from about 14.0 to about 14.4, from about 18.0 to about 18.4, from about 19.0 to about 19.4, from about 25.5 to about 25.9, from about 26.2 to about 26.6, and from about 29.1 to about 29.5 °2θ using Cu Kα radiation.

[0117] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.5, from about 11.7 to about 11.9, from about 14.1 to about 14.3, from about 18.1 to about 18.3, from about 19.1 to about 19.3, from about 25.6 to about 25.8, from about 26.3 to about 26.5, and from about 29.2 to about 29.4 °2θ using Cu Kα radiation.

[0118] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at about 6.39, about 11.80, about 14.20, about 18.21, about 19.15, about 25.67, about 26.41, and about 29.31 °2θ using Cu Kα radiation.

[0119] In some embodiments, the compound (e.g., the crystalline form of Compound 1R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 200 °C and about 240 °C, between about 205 °C and about 235 °C, between about 210 °C and about 230 °C, between about 215 °C and about 227 °C, between about 219 °C and about 225 °C, or between about 221 °C and about 223 °C.

[0120] In some embodiments, the compound (e.g., the crystalline form of Compound 1R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 222.1 °C.

Compound 1R Hydrochloride Salt Type A

[0121] In some embodiments, the compound is a hydrochloride salt of Compound 1R.

[0122] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 1R.

[0123] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least one peak selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0124] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least two peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0125] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least three peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0126] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least four peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0127] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least five peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0128] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least six peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0129] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having at least seven peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0130] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having one peak selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0131] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having two peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0132] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having three peaks selected from 6.2±0.2,

7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0133] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having four peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0134] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having five peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0135] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having six peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0136] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having seven peaks selected from 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0137] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at 6.2±0.2, 7.2±0.2, 8.0±0.2, 8.8±0.2, 12.4±0.2, 13.3±0.2, 17.7±0.2, and 26.2±0.2 °2θ (e.g., 6.2±0.1, 7.2±0.1, 8.0±0.1, 8.8±0.1, 12.4±0.1, 13.3±0.1, 17.7±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0138] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2 and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0139] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 8.6 to about 9.0, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0140] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 7.8 to about

8.2, from about 8.6 to about 9.0, from from about 12.2 to about 12.6, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0141] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.0 to about 6.4, from about 7.8 to about 8.2, from about 8.6 to about 9.0, from from about 12.2 to about 12.6, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0142] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.0 to about 6.4, from about 7.0 to about 7.4, from about 7.8 to about 8.2, from about 8.6 to about 9.0, from from about 12.2 to about 12.6, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0143] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.0 to about 6.4, from about 7.0 to about 7.4, from about 7.8 to about 8.2, from about 8.6 to about 9.0, from from about 12.2 to about 12.6, from about 13.0 to about 13.4, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0144] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.0 to about 6.4, from about 7.0 to about 7.4, from about 7.8 to about 8.2, from about 8.6 to about 9.0, from from about 12.2 to about 12.6, from about 13.0 to about 13.4, from about 17.4 to about 17.8, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0145] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.3, from about 7.1 to about 7.3, from about 7.9 to about 8.1, from about 8.7 to about 8.9, from from about 12.3 to about 12.5, from about 13.1 to about 13.3, from about 17.5 to about 17.7, and from about 26.1 to about 26.3 °2θ using Cu Kα radiation.

[0146] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) is characterized by an XRPD pattern having a peak at about 6.19, about 7.22, about 8.00, about 8.83, about 12.42, about 13.26, about 17.65, and about 26.20 °2θ using Cu Kα radiation.

[0147] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) has an endothermic peak top temperature in differential scanning calorimeter

(DSC) analysis at between about 50 °C and about 90 °C, between about 60 °C and about 80 °C, between about 65 °C and about 78 °C, between about 70 °C and about 75 °C, or between about 72 °C and about 74 °C.

[0148] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 230 °C and about 270 °C, between about 235 °C and about 265 °C, between about 240 °C and about 260 °C, between about 245 °C and about 255 °C, or between about 249 °C and about 251 °C.

[0149] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 1R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 72.7 °C and/or at about 249.6 °C.

[0150] In some embodiments, the compound is Compound 1S, a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0151] In some embodiments, the compound is Compound 1S.

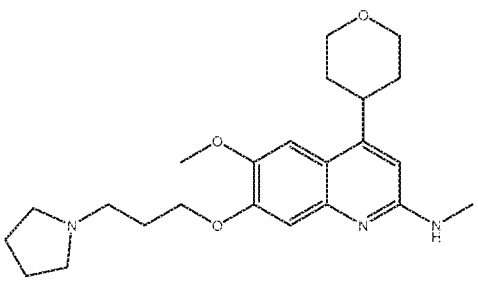
[0152] In some embodiments, the compound is a crystalline form of Compound 1S.

[0153] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 1S.

[0154] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 1S.

[0155] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 1S.

Compound 2

[0156] In some embodiments, the compound is  (Compound 2), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable

salt of the tautomer.

[0157] In some embodiments, the compound is Compound 2.

[0158] In some embodiments, the compound is a crystalline form of Compound 2.

[0159] In some embodiments, the crystalline form of Compound 2 is an anhydrate.

[0160] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 2.

[0161] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 2.

[0162] In some embodiments, the crystalline form of the pharmaceutically acceptable salt of Compound 2 is an anhydrate.

[0163] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 2.

Compound 2 Freebase Type A

[0164] In some embodiments, the compound is Compound 2.

[0165] In some embodiments, the compound is a crystalline form of Compound 2.

[0166] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having at least one peak selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0167] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having at least two peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0168] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having at least three peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0169] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having at least four peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0170] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having at least five peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0171] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having at least six peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0172] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having at least seven peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0173] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having one peak selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0174] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having two peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0175] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having three peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0176] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having four peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0177] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having five peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0178] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having six peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and a30.0±0.1 °2θ) using Cu Kα radiation.

[0179] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having seven peaks selected from 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0180] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at 8.0±0.2, 9.6±0.2, 12.6±0.2, 15.7±0.2, 16.0±0.2, 18.6±0.2, 19.2±0.2, 19.6±0.2, 23.2±0.2, and 30.0±0.2 °2θ (e.g., 8.0±0.1, 9.6±0.1, 12.6±0.1, 15.7±0.1, 16.0±0.1, 18.6±0.1, 19.2±0.1, 19.6±0.1, 23.2±0.1, and 30.0±0.1 °2θ) using Cu Kα radiation.

[0181] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 12.4 to about 12.8, and from about 19.4 to about 19.8 °2θ using Cu Kα radiation.

[0182] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 12.4 to about 12.8, from about 15.5 to about 15.9, and from about 19.4 to about 19.8 °2θ using Cu Kα radiation.

[0183] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 9.4 to about 9.8, from about 12.4 to about 12.8, from about 15.5 to about 15.9, and from about 19.4 to about 19.8 °2θ using Cu Kα radiation.

[0184] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 9.4 to about 9.8, from about 12.4 to about 12.8, from about 15.5 to about 15.9, from about 19.0 to about 19.4, and from about 19.4 to about 19.8 °2θ using Cu Kα radiation.

[0185] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 9.4 to about 9.8, from about 12.4 to about 12.8, from about 15.5 to about 15.9, from about 19.0 to about 19.4, from about 19.4 to about 19.8, and from about 29.8 to about 30.2 °2θ using Cu Kα radiation.

[0186] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 9.4 to about 9.8, from about 12.4 to about 12.8, from about 15.5 to about 15.9, from about 19.0 to about 19.4, from about 19.4 to about 19.8, from about 23.0 to about 23.4, and from about 29.8 to about 30.2 °2θ using Cu Kα radiation.

[0187] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 9.4 to about 9.8, from about 12.4 to about 12.8, from about 15.5 to about 15.9, from about 15.8 to about 16.2, from about 19.0 to about 19.4, from about 19.4 to about 19.8, from about 23.0 to about 23.4, and from about 29.8 to about 30.2 °2θ using Cu Kα radiation.

[0188] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.2, from about 9.4 to

about 9.8, from about 12.4 to about 12.8, from about 15.5 to about 15.9, from about 15.8 to about 16.2, from about 18.4 to about 18.8, from about 19.0 to about 19.4, from about 19.4 to about 19.8, from about 23.0 to about 23.4, and from about 29.8 to about 30.2 °2θ using Cu Kα radiation.

[0189] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at from about 7.9 to about 8.1, from about 9.5 to about 9.7, from about 12.5 to about 12.7, from about 15.6 to about 15.8, from about 15.9 to about 16.1, from about 18.5 to about 18.7, from about 19.1 to about 19.3, from about 19.5 to about 19.7, from about 23.1 to about 23.3, and from about 29.9 to about 30.1 °2θ using Cu Kα radiation.

[0190] In some embodiments, the compound (e.g., the crystalline form of Compound 2) is characterized by an XRPD pattern having a peak at about 7.98, about 9.56, about 12.59, about 15.68, about 15.97, about 18.62, about 19.18, about 19.57, about 23.19, and about 30.04 °2θ using Cu Kα radiation.

[0191] In some embodiments, the compound (e.g., the crystalline form of Compound 2) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 160 °C and about 200 °C, between about 165 °C and about 195 °C, between about 170 °C and about 190 °C, between about 175 °C and about 185 °C, between about 177 °C and about 183 °C, or between about 179 °C and about 181 °C.

[0192] In some embodiments, the compound (e.g., the crystalline form of Compound 2) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 180.4 °C.

Compound 2 Hydrochloride Salt Type A

[0193] In some embodiments, the compound is a hydrochloride salt of Compound 2.

[0194] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 2.

[0195] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having at least one peak selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0196] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having at least two peaks selected from

5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0197] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having at least three peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0198] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having at least four peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0199] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having at least five peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0200] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having at least six peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0201] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having at least seven peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0202] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having one peak selected from 5.3±0.2,

8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0203] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having two peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0204] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having three peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0205] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having four peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0206] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having five peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0207] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having six peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0208] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having seven peaks selected from 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0209] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at 5.3±0.2, 8.3±0.2, 9.9±0.2, 16.7±0.2, 17.5±0.2, 20.3±0.2, 25.1±0.2, and 27.0±0.2 °2θ (e.g., 5.3±0.1, 8.3±0.1, 9.9±0.1, 16.7±0.1, 17.5±0.1, 20.3±0.1, 25.1±0.1, and 27.0±0.1 °2θ) using Cu Kα radiation.

[0210] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.4 and from about 17.3 to about 17.7 °2θ using Cu Kα radiation.

[0211] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.4, from about 9.7 to about 10.1, and from about 17.3 to about 17.7 °2θ using Cu Kα radiation.

[0212] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.4, from about 9.7 to about 10.1, from about 17.3 to about 17.7, and from about about 20.1 to about 20.5 °2θ using Cu Kα radiation.

[0213] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.4, from about 8.1 to about 8.5, from about 9.7 to about 10.1, from about 17.3 to about 17.7, and from about about 20.1 to about 20.5 °2θ using Cu Kα radiation.

[0214] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.4, from about 8.1 to about 8.5, from about 9.7 to about 10.1, from about 16.5 to about 16.9, from about 17.3 to about 17.7, and from about about 20.1 to about 20.5 °2θ using Cu Kα radiation.

[0215] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.4, from about 8.1 to about 8.5, from about 9.7 to about 10.1, from about 16.5 to about 16.9, from about 17.3 to about 17.7, from about about 20.1 to about 20.5, and from about 26.8 to about 27.2 °2θ using Cu Kα radiation.

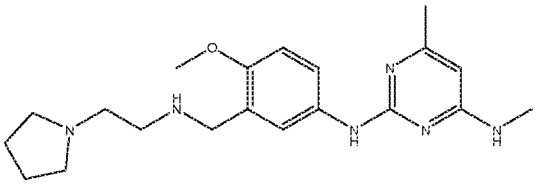
[0216] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.4, from about 8.1 to about 8.5, from about 9.7 to about 10.1, from about 16.5 to about 16.9, from about 17.3 to about 17.7, from about about 20.1 to about 20.5, from about 24.9 to about 25.3, and from about 26.8 to about 27.2 °2θ using Cu Kα radiation.

[0217] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at from about 5.2 to about 5.3, from about 8.2 to about 8.4, from about 9.8 to about 10.0, from about 16.6 to about 16.8, from

about 17.4 to about 17.6, from about about 20.2 to about 20.4, from about 25.0 to about 25.2, and from about 26.9 to about 27.1 °2θ using Cu Kα radiation.

[0218] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 2) is characterized by an XRPD pattern having a peak at about 5.29, about 8.32, about 9.87, about 16.67, about 17.51, about 20.30, about 25.10, and about 27.04 °2θ using Cu Kα radiation.

Compuond 3

[0219] In some embodiments, the compound is  (Compound 3), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0220] In some embodiments, the compound is Compound 3.

[0221] In some embodiments, the compound is a crystalline form of Compound 3.

[0222] In some embodiments, the crystalline form of Compound 3 is an anhydrate.

[0223] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 3.

[0224] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 3.

[0225] In some embodiments, the crystalline form of the pharmaceutically acceptable salt of Compound 3 is an anhydrate.

[0226] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 3.

Compound 3 Freebase Type A

[0227] In some embodiments, the compound is Compound 3.

[0228] In some embodiments, the compound is a crystalline form of Compound 3.

[0229] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having at least one peak selected from 6.3±0.2, 8.3±0.2,

12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0230] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having at least two peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0231] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having at least three peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0232] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having at least four peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0233] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having at least five peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0234] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having at least six peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0235] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having at least seven peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1,

8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0236] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having at least eight peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0237] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having one peak selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0238] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having two peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0239] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having three peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0240] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having four peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0241] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having five peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1,

12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0242] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having six peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0243] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having seven peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0244] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having eight peaks selected from 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0245] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at 6.3±0.2, 8.3±0.2, 12.4±0.2, 14.7±0.2, 15.9±0.2, 17.3±0.2, 23.1±0.2, 25.6±0.2, and 32.7±0.2 °2θ (e.g., 6.3±0.1, 8.3±0.1, 12.4±0.1, 14.7±0.1, 15.9±0.1, 17.3±0.1, 23.1±0.1, 25.6±0.1, and 32.7±0.1 °2θ)using Cu Kα radiation.

[0246] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 25.5 to about 25.7, and from about 32.6 to about 32.8 °2θ using Cu Kα radiation.

[0247] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 14.6 to about 14.8, from about 25.5 to about 25.7, and from about 32.6 to about 32.8 °2θ using Cu Kα radiation.

[0248] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 8.33 to

about 8.35, from about 14.6 to about 14.8, from about 25.5 to about 25.7, and from about 32.6 to about 32.8 °2θ using Cu Kα radiation.

[0249] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 8.33 to about 8.35, from about 14.6 to about 14.8, from about 15.8 to about 16.0, from about 25.5 to about 25.7, and from about 32.6 to about 32.8 °2θ using Cu Kα radiation.

[0250] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 8.33 to about 8.35, from about 12.3 to about 12.5, from about 14.6 to about 14.8, from about 15.8 to about 16.0, from about 25.5 to about 25.7, and from about 32.6 to about 32.8 °2θ using Cu Kα radiation.

[0251] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 8.33 to about 8.35, from about 12.3 to about 12.5, from about 14.6 to about 14.8, from about 15.8 to about 16.0, from about 23.0 to about 23.2, from about 25.5 to about 25.7, and from about 32.6 to about 32.8 °2θ using Cu Kα radiation.

[0252] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 8.33 to about 8.35, from about 12.3 to about 12.5, from about 14.6 to about 14.8, from about 15.8 to about 16.0, from about 17.2 to about 17.4, from about 23.0 to about 23.2, from about 25.5 to about 25.7, and from about 32.6 to about 32.8 °2θ using Cu Kα radiation.

[0253] In some embodiments, the compound (e.g., the crystalline form of Compound 3) is characterized by an XRPD pattern having a peak at about 6.27, about 8.34, about 12.41, about 14.73, about 15.94, about 17.28, about 23.07, about 25.64, and about 32.74 °2θ using Cu Kα radiation.

[0254] In some embodiments, the compound (e.g., the crystalline form of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 70 °C and about 110 °C, between about 75 °C and about 105 °C, between about 80 °C and about 100 °C, between about 90 °C and about 96 °C, or between about 92 °C and about 94 °C.

[0255] In some embodiments, the compound (e.g., the crystalline form of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 130 °C and about 170 °C, between about 135 °C and about 165 °C, between about 140 °C

and about 160 °C, between about 148 °C and about 155 °C, or between about 150 °C and about 153 °C.

[0256] In some embodiments, the compound (e.g., the crystalline form of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 93.2 °C and/or at about 151.6 °C.

Compound 3 Hydrochloride Salt Type A

[0257] In some embodiments, the compound is a hydrochloride salt of Compound 3.

[0258] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 3.

[0259] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least one peak selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0260] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least two peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0261] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least three peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0262] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least four peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0263] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least five peaks selected from

6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0264] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least six peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0265] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least seven peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0266] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having one peak selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0267] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having two peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0268] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having three peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0269] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having four peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1,

9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0270] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having five peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0271] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having six peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0272] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having seven peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0273] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at 6.8±0.2, 9.0±0.2, 11.8±0.2, 16.3±0.2, 25.1±0.2, 25.6±0.2, 26.3±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 16.3±0.1, 25.1±0.1, 25.6±0.1, 26.3±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0274] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, and from about 25.4 to about 25.8 °2θ using Cu Kα radiation.

[0275] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 25.4 to about 25.8, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0276] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about

7.0, from about 8.8 to about 9.2, from about 24.9 to about 25.3, from about 25.4 to about 25.8, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0277] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 24.9 to about 25.3, from about 25.4 to about 25.8, from about 26.1 to about 26.5, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0278] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 16.1 to about 16.5, from about 24.9 to about 25.3, from about 25.4 to about 25.8, from about 26.1 to about 26.5, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0279] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 16.1 to about 16.5, from about 24.9 to about 25.3, from about 25.4 to about 25.8, from about 26.1 to about 26.5, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0280] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.7 to about 6.9, from about 8.9 to about 9.1, from about 11.7 to about 11.9, from about 16.2 to about 16.4, from about 25.0 to about 25.2, from about 25.5 to about 25.7, from about 26.2 to about 26.4, and from about 27.5 to about 27.7 °2θ using Cu Kα radiation.

[0281] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at about 6.82, about 9.00, about 11.80, about 16.30, about 25.05, about 25.56, about 26.33, and about 27.61 °2θ using Cu Kα radiation.

[0282] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 75 °C and about 115 °C, between about 80 °C and about 100 °C, between about 85 °C and about 105 °C, between about 90 °C and about 100 °C, or between about 95 °C and about 96 °C.

[0283] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 95.5 °C.

Compound 3 Hydrochloride Salt Type B

[0284] In some embodiments, the compound is a hydrochloride salt of Compound 3.

[0285] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 3.

[0286] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least one peak selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0287] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least two peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0288] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least three peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0289] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least four peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0290] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least five peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and

30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0291] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least six peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0292] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least seven peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0293] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least eight peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0294] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having at least nine peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0295] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having one peak selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0296] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having two peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ

(e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0297] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having three peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0298] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having four peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0299] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having five peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0300] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having six peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0301] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having seven peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0302] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having eight peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ

(e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0303] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having nine peaks selected from 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0304] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at 11.8±0.2, 12.3±0.2, 16.9±0.2, 22.3±0.2, 23.1±0.2, 23.6±0.2, 25.3±0.2, 27.5±0.2, 28.1±0.2, and 30.1±0.2 °2θ (e.g., 11.8±0.1, 12.3±0.1, 16.9±0.1, 22.3±0.1, 23.1±0.1, 23.6±0.1, 25.3±0.1, 27.5±0.1, 28.1±0.1, and 30.1±0.1 °2θ) using Cu Kα radiation.

[0305] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 12.1 to about 12.5, from about 16.7 to about 17.0, and from about 25.1 to about 25.5 °2θ using Cu Kα radiation.

[0306] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 12.1 to about 12.5, from about 16.7 to about 17.0, from about 25.1 to about 25.5, and from about 27.3 to about 27.7 °2θ using Cu Kα radiation.

[0307] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 12.1 to about 12.5, from about 16.7 to about 17.0, from about 22.1 to about 22.5, from about 25.1 to about 25.5, and from about 27.3 to about 27.7 °2θ using Cu Kα radiation.

[0308] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from 11.5 to about 11.9, from about 12.1 to about 12.5, from about 16.7 to about 17.0, from about 22.1 to about 22.5, from about 25.1 to about 25.5, and from about 27.3 to about 27.7 °2θ using Cu Kα radiation.

[0309] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from 11.5 to about 11.9, from about 12.1 to about 12.5, from about 16.7 to about 17.0, from about 22.1 to about 22.5, from

about 25.1 to about 25.5, from about 27.3 to about 27.7, and from about 29.8 to about 30.2 °2θ using Cu Kα radiation.

[0310] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from 11.5 to about 11.9, from about 12.1 to about 12.5, from about 16.7 to about 17.0, from about 22.1 to about 22.5, from about 23.4 to about 23.8, from about 25.1 to about 25.5, from about 27.3 to about 27.7, and from about 29.8 to about 30.2 °2θ using Cu Kα radiation.

[0311] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from 11.5 to about 11.9, from about 12.1 to about 12.5, from about 16.7 to about 17.0, from about 22.1 to about 22.5, from about 23.4 to about 23.8, from about 25.1 to about 25.5, from about 27.3 to about 27.7, from about 27.9 to about 28.3, and from about 29.8 to about 30.2 °2θ using Cu Kα radiation.

[0312] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from 11.5 to about 11.9, from about 12.1 to about 12.5, from about 16.7 to about 17.0, from about 22.1 to about 22.5, from about 22.9 to about 23.3, from about 23.4 to about 23.8, from about 25.1 to about 25.5, from about 27.3 to about 27.7, from about 27.9 to about 28.3, and from about 29.8 to about 30.2 °2θ using Cu Kα radiation.

[0313] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at from 11.6 to about 11.8, from about 12.2 to about 12.4, from about 16.8 to about 16.9, from about 22.2 to about 22.4, from about 23.0 to about 23.2, from about 23.5 to about 23.7, from about 25.2 to about 25.4, from about 27.4 to about 27.6, from about 28.0 to about 28.2, and from about 29.9 to about 30.1 °2θ using Cu Kα radiation.

[0314] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) is characterized by an XRPD pattern having a peak at about 11.75, about 12.30, about 16.85, about 22.33, about 23.06, about 23.57, about 25.33, about 27.50, about 28.05, and about 30.06 °2θ using Cu Kα radiation.

[0315] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 235 °C and about 275 °C, between about 240 °C and about 270

°C, between about 245 °C and about 265 °C, between about 250 °C and about 260 °C, or between about 255 °C and about 257 °C.

[0316] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 256 °C.

Compound 3 Sulfate Salt Type A

[0317] In some embodiments, the compound is a sulfate salt of Compound 3.

[0318] In some embodiments, the compound is a crystalline form of a sulfate salt of Compound 3.

[0319] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least one peak selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0320] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least two peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0321] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least three peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0322] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least four peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0323] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least five peaks selected from

5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0324] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least six peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0325] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least seven peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0326] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least eight peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0327] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having at least nine peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0328] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having one peak selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0329] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having two peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ

(e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0330] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having three peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0331] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having four peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0332] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having five peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0333] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having six peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0334] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having seven peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0335] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having eight peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ

(e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0336] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having nine peaks selected from 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0337] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at 5.2±0.2, 10.9±0.2, 14.6±0.2, 18.3±0.2, 19.6±0.2, 20.9±0.2, 22.5±0.2, 24.2±0.2, 25.6±0.2, and 28.0±0.2 °2θ (e.g., 5.2±0.1, 10.9±0.1, 14.6±0.1, 18.3±0.1, 19.6±0.1, 20.9±0.1, 22.5±0.1, 24.2±0.1, 25.6±0.1, and 28.0±0.1 °2θ) using Cu Kα radiation.

[0338] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 14.4 to about 14.8, and from about 25.4 to about 25.8 °2θ using Cu Kα radiation.

[0339] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 14.4 to about 14.8, from about 20.7 to about 21.0, and from about 25.4 to about 25.8 °2θ using Cu Kα radiation.

[0340] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 10.7 to about 11.0, from about 14.4 to about 14.8, from about 20.7 to about 21.0, and from about 25.4 to about 25.8 °2θ using Cu Kα radiation.

[0341] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 10.7 to about 11.0, from about 14.4 to about 14.8, from about 18.1 to about 18.4, from about 20.7 to about 21.0, and from about 25.4 to about 25.8 °2θ using Cu Kα radiation.

[0342] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 10.7 to about 11.0, from about 14.4 to about 14.8, from about 18.1 to about 18.4, from

about 20.7 to about 21.0, from about 25.4 to about 25.8, and from about 27.8 to about 28.2 °2θ using Cu Kα radiation.

[0343] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 10.7 to about 11.0, from about 14.4 to about 14.8, from about 18.1 to about 18.4, from about 19.4 to about 19.8, from about 20.7 to about 21.0, from about 25.4 to about 25.8, and from about 27.8 to about 28.2 °2θ using Cu Kα radiation.

[0344] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 10.7 to about 11.0, from about 14.4 to about 14.8, from about 18.1 to about 18.4, from about 19.4 to about 19.8, from about 20.7 to about 21.0, from about 24.0 to about 24.4, from about 25.4 to about 25.8, and from about 27.8 to about 28.2 °2θ using Cu Kα radiation.

[0345] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 10.7 to about 11.0, from about 14.4 to about 14.8, from about 18.1 to about 18.4, from about 19.4 to about 19.8, from about 20.7 to about 21.0, from about 22.3 to about 22.7, from about 24.0 to about 24.4, from about 25.4 to about 25.8, and from about 27.8 to about 28.2 °2θ using Cu Kα radiation.

[0346] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.3, from about 10.8 to about 10.9, from about 14.5 to about 14.7, from about 18.2 to about 18.3, from about 19.5 to about 19.7, from about 20.8 to about 20.9, from about 22.4 to about 22.6, from about 24.1 to about 24.3, from about 25.5 to about 25.7, and from about 27.9 to about 28.1 °2θ using Cu Kα radiation.

[0347] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) is characterized by an XRPD pattern having a peak at about 5.22, about 10.85, about 14.60, about 18.25, about 19.63, about 20.88, about 22.52, about 24.24, about 25.58, and about 27.97 °2θ using Cu Kα radiation.

[0348] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 150 °C and about 190 °C, between about 155 °C and about 185 °C,

between about 160 °C and about 180 °C, between about 165 °C and about 175 °C, or between about 170 °C and about 172 °C;

[0349] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 200 °C and about 235 °C, between about 205 °C and about 230 °C, between about 210 °C and about 225 °C, between about 215 °C and about 220 °C, or between about 217 °C and about 218 °C;

[0350] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 205 °C and about 245 °C, between about 210 °C and about 240 °C, between about 215 °C and about 235 °C, between about 220 °C and about 230 °C, or between about 225 °C and about 227 °C.

[0351] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 255 °C and about 295 °C, between about 260 °C and about 290 °C, between about 265 °C and about 285 °C, between about 270 °C and about 280 °C, or between about 275 °C and about 276 °C.

[0352] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 170.9 °C, at about 217.3 °C, at about 226.4 °C, and/or at about 275.3 °C.

Compound 3 Glycolate Salt Type A

[0353] In some embodiments, the compound is a glycolate salt of Compound 3.

[0354] In some embodiments, the compound is a crystalline form of a glycolate salt of Compound 3.

[0355] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least one peak selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0356] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least two peaks selected from

6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0357] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least three peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0358] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least four peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0359] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least five peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0360] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least six peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0361] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least seven peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0362] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least eight peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and

27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0363] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having at least nine peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0364] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having one peak selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0365] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having two peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0366] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having three peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0367] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having four peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0368] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having five peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ

(e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0369] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having six peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0370] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having seven peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0371] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having eight peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0372] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having nine peaks selected from 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0373] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at 6.8±0.2, 9.0±0.2, 11.8±0.2, 13.2±0.2, 16.3±0.2, 20.4±0.2, 23.6±0.2, 25.0±0.2, 25.5±0.2, and 27.6±0.2 °2θ (e.g., 6.8±0.1, 9.0±0.1, 11.8±0.1, 13.2±0.1, 16.3±0.1, 20.4±0.1, 23.6±0.1, 25.0±0.1, 25.5±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[0374] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, and from about 24.8 to about 25.2 °2θ using Cu Kα radiation.

[0375] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, and from about 24.8 to about 25.2 °2θ using Cu Kα radiation.

[0376] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 24.8 to about 25.2, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0377] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 24.8 to about 25.2, from about 25.3 to about 25.7, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0378] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 16.1 to about 16.5, from about 24.8 to about 25.2, from about 25.3 to about 25.7, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0379] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 16.1 to about 16.5, from about 23.4 to about 23.8, from about 24.8 to about 25.2, from about 25.3 to about 25.7, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0380] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 12.9 to about 13.3, from about 16.1 to about 16.5, from about 23.4 to about 23.8, from about 24.8 to about 25.2, from about 25.3 to about 25.7, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0381] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 12.9 to about 13.3, from about 16.1 to about 16.5, from about 20.2 to about 20.6, from about 23.4 to about 23.8, from about

24.8 to about 25.2, from about 25.3 to about 25.7, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0382] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 12.9 to about 13.3, from about 16.1 to about 16.5, from about 20.2 to about 20.6, from about 23.4 to about 23.8, from about 24.8 to about 25.2, from about 25.3 to about 25.7, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[0383] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.7 to about 6.9, from about 8.9 to about 9.1, from about 11.7 to about 11.9, from about 13.0 to about 13.2, from about 16.2 to about 16.4, from about 20.3 to about 20.5, from about 23.5 to about 23.7, from about 24.9 to about 25.1, from about 25.4 to about 25.6, and from about 27.5 to about 27.7 °2θ using Cu Kα radiation.

[0384] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) is characterized by an XRPD pattern having a peak at about 6.81, about 9.00, about 11.77, about 13.15, about 16.28, about 20.44, about 23.63, about 25.02, about 25.52, and about 27.59 °2θ using Cu Kα radiation.

[0385] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 80 °C and about 115 °C, between about 85 °C and about 110 °C, between about 90 °C and about 105 °C, between about 95 °C and about 100 °C, or between about 97 °C and about 98 °C.

[0386] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 90 °C and about 130 °C, between about 95 °C and about 125 °C, between about 100 °C and about 120 °C, between about 105 °C and about 115 °C, or between about 111 °C and about 112 °C.

[0387] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 165 °C and about 205 °C, between about 170 °C and about 200 °C,

between about 175 °C and about 195 °C, between about 180 °C and about 190 °C, or between about 184 °C and about 185 °C.

[0388] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 235 °C and about 275 °C, between about 240 °C and about 270 °C, between about 245 °C and about 265 °C, between about 250 °C and about 260 °C, or between about 254 °C and about 255 °C.

[0389] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 97.4 °C, at about 111.5 °C, at about 184.7 °C, and/or at about 254.4 °C.

[0390] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 85 °C and about 125 °C, between about 90 °C and about 120 °C, between about 95 °C and about 115 °C, between about 100 °C and about 110 °C, or between about 103 °C and about 105 °C.

[0391] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 115 °C and about 150 °C, between about 120 °C and about 145 °C, between about 125 °C and about 140 °C, between about 130 °C and about 135 °C, or between about 132 °C and about 133 °C.

[0392] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 210 °C and about 250 °C, between about 215 °C and about 245 °C, between about 220 °C and about 240 °C, between about 225 °C and about 235 °C, or between about 231 °C and about 233 °C.

[0393] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 103.9 °C, at about 132.6 °C, and/or at about 231.9 °C.

Compound 3 Succinate Salt Type A

[0394] In some embodiments, the compound is a succinate salt of Compound 3.

[0395] In some embodiments, the compound is a crystalline form of a succinate salt of Compound 3.

[0396] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least one peak selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0397] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least two peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0398] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least three peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0399] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least four peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0400] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least five peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0401] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least six peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ

(e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0402] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least seven peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0403] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least eight peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0404] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having at least nine peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0405] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having one peak selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0406] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having two peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0407] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having three peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ

(e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0408] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having four peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0409] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having five peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0410] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having six peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0411] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having seven peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0412] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having eight peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0413] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having nine peaks selected from 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ

(e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0414] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at 6.8±0.2, 7.6±0.2, 9.0±0.2, 11.8±0.2, 14.8±0.2, 22.1±0.2, 23.3±0.2, 25.7±0.2, 27.3±0.2, and 32.7±0.2 °2θ (e.g., 6.8±0.1, 7.6±0.1, 9.0±0.1, 11.8±0.1, 14.8±0.1, 22.1±0.1, 23.3±0.1, 25.7±0.1, 27.3±0.1, and 32.7±0.1 °2θ) using Cu Kα radiation.

[0415] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 7.4 to about 7.8, and from about 25.5 to about 25.9 °2θ using Cu Kα radiation.

[0416] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 7.4 to about 7.8, from about 25.5 to about 25.9, and from about 32.5 to about 32.9 °2θ using Cu Kα radiation.

[0417] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 7.4 to about 7.8, from about 11.6 to about 12.0, from about 25.5 to about 25.9, and from about 32.5 to about 32.9 °2θ using Cu Kα radiation.

[0418] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 7.4 to about 7.8, from about 11.6 to about 12.0, from about 23.1 to about 23.5, from about 25.5 to about 25.9, and from about 32.5 to about 32.9 °2θ using Cu Kα radiation.

[0419] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 7.4 to about 7.8, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 23.1 to about 23.5, from about 25.5 to about 25.9, and from about 32.5 to about 32.9 °2θ using Cu Kα radiation.

[0420] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 7.4 to about 7.8, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from

about 23.1 to about 23.5, from about 25.5 to about 25.9, from about 27.1 to about 27.5, and from about 32.5 to about 32.9 °2θ using Cu Kα radiation.

[0421] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 7.4 to about 7.8, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 14.6 to about 15.0, from about 23.1 to about 23.5, from about 25.5 to about 25.9, from about 27.1 to about 27.5, and from about 32.5 to about 32.9 °2θ using Cu Kα radiation.

[0422] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 7.4 to about 7.8, from about 8.8 to about 9.2, from about 11.6 to about 12.0, from about 14.6 to about 15.0, from about 21.9 to about 22.2, from about 23.1 to about 23.5, from about 25.5 to about 25.9, from about 27.1 to about 27.5, and from about 32.5 to about 32.9 °2θ using Cu Kα radiation.

[0423] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at from about 6.7 to about 6.9, from about 7.5 to about 7.7, from about 8.9 to about 9.1, from about 11.7 to about 11.9, from about 14.7 to about 14.9, from about 22.0 to about 22.1, from about 23.2 to about 23.4, from about 25.6 to about 25.8, from about 27.2 to about 27.4, and from about 32.6 to about 32.8 °2θ using Cu Kα radiation.

[0424] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) is characterized by an XRPD pattern having a peak at about 6.84, about 7.56, about 8.98, about 11.77, about 14.79, about 22.05, about 23.31, about 25.69, about 27.32, and about 32.74 °2θ using Cu Kα radiation.

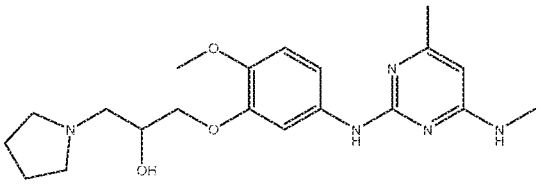
[0425] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 75 °C and about 110 °C, between about 80 °C and about 105 °C, between about 85 °C and about 100 °C, between about 90 °C and about 95 °C, or between about 92 °C and about 93 °C.

[0426] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 165 °C and about 200 °C, between about 170 °C and about 195 °C,

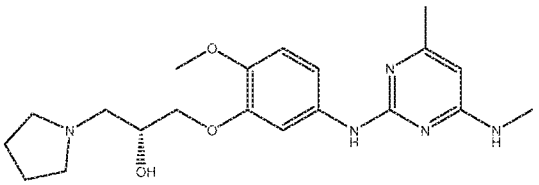
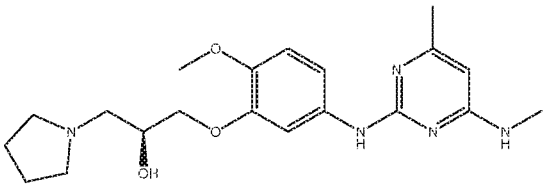
between about 175 °C and about 190 °C, between about 180 °C and about 185 °C, or between about 182 °C and about 183 °C.

[0427] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 3) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 92.4 °C and/or at about 182.2 °C.

Compound 4

[0428] In some embodiments, the compound is  (Compound 4), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0429] In some embodiments, the compound is Compound 4.

[0430] In some embodiments, the compound is  (Compound 4R),  (Compound 4S), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0431] In some embodiments, the compound is Compound 4R or Compound 4S.

[0432] In some embodiments, the compound is Compound 4R, a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0433] In some embodiments, the compound is 4R.

[0434] In some embodiments, the compound is a crystalline form of Compound 4R.

[0435] In some embodiments, the crystalline form of Compound 4R is an anhydrate.

[0436] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 4R.

[0437] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 4R.

[0438] In some embodiments, the crystalline form of the pharmaceutically acceptable salt of Compound 4R is an anhydrate.

[0439] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 4R.

Compound 4R Freebase Type A

[0440] In some embodiments, the compound is 4R.

[0441] In some embodiments, the compound is a crystalline form of Compound 4R.

[0442] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least one peak selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0443] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least two peaks selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0444] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least three peaks selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0445] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least four peaks selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0446] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least five peaks selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0447] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having one peak selected from 6.4±0.2, 7.2±0.2, 9.9±0.2,

13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0448] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having two peaks selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0449] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having three peaks selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0450] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having four peaks selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0451] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having five peaks selected from 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0452] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at 6.4±0.2, 7.2±0.2, 9.9±0.2, 13.3±0.2, 15.7±0.2, and 26.1±0.2 °2θ (e.g., 6.4±0.1, 7.2±0.1, 9.9±0.1, 13.3±0.1, 15.7±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0453] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 7.0 to about 7.4, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0454] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 7.0 to about 7.4, from about 13.1 to about 13.5, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0455] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 7.0 to

about 7.4, from about 13.1 to about 13.5, from about 15.5 to about 15.9, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0456] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.6, from about 7.0 to about 7.4, from about 9.7 to about 10.1, from about 13.1 to about 13.5, from about 15.5 to about 15.9, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0457] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.5, from about 7.1 to about 7.3, from about 9.8 to about 10.0, from about 13.2 to about 13.4, from about 15.6 to about 15.8, and from about 26.0 to about 26.2 °2θ using Cu Kα radiation.

[0458] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at about 6.40, about 7.17, about 9.86, about 13.31, about 15.71, and about 26.10 °2θ using Cu Kα radiation.

[0459] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 60 °C and about 100 °C, between about 65 °C and about 95 °C, between about 70 °C and about 90 °C, between about 74 °C and about 82 °C, or between about 77 °C and about 79 °C.

[0460] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 210 °C and about 250 °C, between about 215 °C and about 245 °C, between about 220 °C and about 240 °C, between about 225 °C and about 233 °C, or between about 228 °C and about 230 °C.

[0461] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 77.8 °C and/or at about 229.2 °C.

[0462] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in modulated differential scanning calorimeter (mDSC) analysis at between about 200 °C and about 240 °C, between about 205 °C and about 235°C, between about 210 °C and about 230 °C, between about 215 °C and about 225 °C, or between about 218 °C and about 220 °C.

[0463] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in modulated differential scanning calorimeter (mDSC) analysis at about 219.2 °C.

Compound 4R Freebase Type B

[0464] In some embodiments, the compound is 4R.

[0465] In some embodiments, the compound is a crystalline form of Compound 4R.

[0466] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least one peak selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0467] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least two peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0468] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least three peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0469] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least four peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0470] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least five peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0471] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least six peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0472] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least seven peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0473] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least eight peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0474] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least nine peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0475] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having one peak selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0476] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having two peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0477] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having three peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0478] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having four peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0479] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having five peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0480] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having six peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0481] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having seven peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0482] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having eight peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0483] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having nine peaks selected from 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0484] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at 6.3±0.2, 6.7±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.7±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0485] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.5 to about 6.9, and from about 9.0 to about 9.4 °2θ using Cu Kα radiation.

[0486] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.5 to about 6.9, from about 9.0 to about 9.4, and from about 12.9 to about 13.3 °2θ using Cu Kα radiation.

[0487] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.5 to about 6.9, from about 9.0 to about 9.4, from about 12.9 to about 13.3, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0488] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.5 to about 6.9, from about 9.0 to about 9.4, from about 12.9 to about 13.3, from about 19.9 to about 20.3, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0489] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.5 to about 6.9, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, from about 19.9 to about 20.3, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0490] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.5 to

about 6.9, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, from about 14.2 to about 14.6, from about 19.9 to about 20.3, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0491] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.5 to about 6.9, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, from about 14.2 to about 14.6, from about 19.9 to about 20.3, from about 21.8 to about 22.2, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0492] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.5 to about 6.9, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, from about 14.2 to about 14.6, from about 19.9 to about 20.3, from about 21.8 to about 22.2, from about 26.0 to about 26.4, and from about 26.9 to about 27.3 °2θ using Cu Kα radiation.

[0493] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 6.6 to about 6.8, from about 9.1 to about 9.3, from about 12.6 to about 12.8, from about 13.0 to about 13.2, from about 14.3 to about 14.5, from about 20.0 to about 20.2, from about 21.9 to about 22.1, from about 26.1 to about 26.3, and from about 27.0 to about 27.2 °2θ using Cu Kα radiation.

[0494] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at about 6.31, about 6.73, about 9.24, about 12.66, about 13.13, about 14.37, about 20.08, about 22.0, about 26.15, and about 27.05 °2θ using Cu Kα radiation.

[0495] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 60 °C and about 100 °C, between about 65 °C and about 95 °C, between about 70 °C and about 90 °C, between about 74 °C and about 82 °C, or between about 77 °C and about 79 °C.

[0496] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 185 °C and about 225 °C, between about 190 °C and about 220 °C, between about 195 °C and about 215 °C, between about 200 °C and about 210 °C, or between about 203 °C and about 206 °C.

[0497] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 77.5 °C and/or at about 204.6 °C.

Compound 4R Freebase Type C

[0498] In some embodiments, the compound is 4R.

[0499] In some embodiments, the compound is a crystalline form of Compound 4R.

[0500] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least one peak selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0501] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least two peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0502] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least three peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0503] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least four peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0504] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least five peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0505] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least six peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0506] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having one peak selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0507] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having two peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0508] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having three peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0509] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having four peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0510] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having five peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0511] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having six peaks selected from 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0512] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at 7.3±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, and 26.2±0.2 °2θ (e.g., 7.3±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0513] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.1 to about 7.5, from about about 13.1 to about 13.5, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0514] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.1 to about 7.5, from about 9.6 to about 10.0, from about about 13.1 to about 13.5, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0515] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.1 to about 7.5, from about 7.8 to about 8.2, from about 9.6 to about 10.0, from about about 13.1 to about 13.5, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0516] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.1 to about 7.5, from about 7.8 to about 8.2, from about 9.6 to about 10.0, from about 12.2 to about 12.6, from about about 13.1 to about 13.5, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0517] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.1 to about 7.5, from about 7.8 to about 8.2, from about 8.7 to about 9.1, from about 9.6 to about 10.0, from about 12.2 to about 12.6, from about about 13.1 to about 13.5, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0518] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.2 to about 7.4, from about 7.9 to about 8.1, from about 8.8 to about 9.0, from about 9.7 to about 9.9, from about 12.3 to about 12.5, from about about 13.2 to about 13.4, and from about 26.1 to about 26.3 °2θ using Cu Kα radiation.

[0519] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at about 7.26, about 7.96, about 8.80, about 9.82, about 12.40, about 13.31, and about 26.18 °2θ using Cu Kα radiation.

[0520] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 230 °C and about 270 °C, between about 235 °C and about 265 °C, between about 240 °C and about 260 °C, between about 245 °C and about 255 °C, or between about 247 °C and about 249 °C.

[0521] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 248.0 °C.

Compound 4R Hydrochloride Salt Type A

[0522] In some embodiments, the compound is a hydrochloride salt of Compound 4R.

[0523] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 4R.

[0524] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least one peak selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0525] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least two peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0526] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least three peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0527] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least four peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0528] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least five peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g.,

6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0529] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least six peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0530] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least seven peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0531] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having one peak selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0532] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having two peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0533] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having three peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0534] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having four peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1,

11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0535] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having five peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0536] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having six peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0537] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having seven peaks selected from 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0538] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at 6.3±0.2, 11.8±0.2, 14.5±0.2, 15.5±0.2, 19.4±0.2, 25.5±0.2, 26.3±0.2, and 29.4±0.2 °2θ (e.g., 6.3±0.1, 11.8±0.1, 14.5±0.1, 15.5±0.1, 19.4±0.1, 25.5±0.1, 26.3±0.1, and 29.4±0.1 °2θ) using Cu Kα radiation.

[0539] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 14.3 to about 14.7, and from about 25.3 to about 25.7 °2θ using Cu Kα radiation.

[0540] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 14.3 to about 14.7, and from about 25.3 to about 25.7 °2θ using Cu Kα radiation.

[0541] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 14.3 to about 14.7, from about 25.3 to about 25.7, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[0542] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 11.6 to about 12.0, from about 14.3 to about 14.7, from about 25.3 to about 25.7, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[0543] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 11.6 to about 12.0, from about 14.3 to about 14.7, from about 15.3 to about 15.7, from about 25.3 to about 25.7, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[0544] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 11.6 to about 12.0, from about 14.3 to about 14.7, from about 15.3 to about 15.7, from about 25.3 to about 25.7, from about 26.1 to about 26.5, and from about 29.2 to about 29.6 °2θ using Cu Kα radiation.

[0545] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 11.6 to about 12.0, from about 14.3 to about 14.7, from about 15.3 to about 15.7, from about 19.2 to about 19.6, from about 25.3 to about 25.7, from about 26.1 to about 26.5, and from about 29.2 to about 29.6 °2θ using Cu Kα radiation.

[0546] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 11.7 to about 11.9, from about 14.4 to about 14.6, from about 15.4 to about 15.6, from about 19.3 to about 19.5, from about 25.4 to about 25.6, from about 26.2 to about 26.4, and from about 29.3 to about 29.5 °2θ using Cu Kα radiation.

[0547] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at about 6.34, about 11.80, about 14.50, about 15.51, about 19.36, about 25.50, about 26.28, and about 29.38 °2θ using Cu Kα radiation.

[0548] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 55 °C and about 95 °C, between about 60 °C and about 90 °C,

between about 65 °C and about 85 °C, between about 70 °C and about 80 °C, or between about 75 °C and about 76 °C.

[0549] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 180 °C and about 220 °C, between about 185 °C and about 215 °C, between about 190 °C and about 210 °C, between about 195 °C and about 205 °C, or between about 198 °C and about 199 °C.

[0550] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 75.7 °C and/or at about 198.7 °C.

Compound 4R Hydrochloride Salt Type B

[0551] In some embodiments, the compound is a hydrochloride salt of Compound 4R.

[0552] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 4R.

[0553] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least one peak selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0554] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least two peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0555] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least three peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0556] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least four peaks selected from

7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0557] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least five peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0558] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least six peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0559] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least seven peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0560] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having at least eight peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0561] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having one peak selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0562] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having two peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1,

8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0563] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having three peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0564] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having four peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0565] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having five peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0566] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having six peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0567] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having seven peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0568] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having eight peaks selected from 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1,

8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0569] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at 7.2±0.2, 8.0±0.2, 8.8±0.2, 9.8±0.2, 12.4±0.2, 13.3±0.2, 14.4±0.2, 17.6±0.2, and 26.2±0.2 °2θ (e.g., 7.2±0.1, 8.0±0.1, 8.8±0.1, 9.8±0.1, 12.4±0.1, 13.3±0.1, 14.4±0.1, 17.6±0.1, and 26.2±0.1 °2θ) using Cu Kα radiation.

[0570] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.0 to about 7.4, from about 12.2 to about 12.6, and from about 13.1 to about 13.5 °2θ using Cu Kα radiation.

[0571] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.0 to about 7.4, from about 9.6 to about 10.0, from about 12.2 to about 12.6, and from about 13.1 to about 13.5 °2θ using Cu Kα radiation.

[0572] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.0 to about 7.4, from about 7.8 to about 8.2, from about 9.6 to about 10.0, from about 12.2 to about 12.6, and from about 13.1 to about 13.5 °2θ using Cu Kα radiation.

[0573] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.0 to about 7.4, from about 7.8 to about 8.2, from about 8.6 to about 9.0, from about 9.6 to about 10.0, from about 12.2 to about 12.6, and from about 13.1 to about 13.5 °2θ using Cu Kα radiation.

[0574] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.0 to about 7.4, from about 7.8 to about 8.2, from about 8.6 to about 9.0, from about 9.6 to about 10.0, from about 12.2 to about 12.6, from about 13.1 to about 13.5, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0575] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.0 to about 7.4, from about 7.8 to about 8.2, from about 8.6 to about 9.0, from about 9.6 to about 10.0, from about 12.2 to about 12.6, from about 13.1 to about 13.5, from about 17.4 to about 17.8, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0576] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.0 to about 7.4, from about 7.8 to about 8.2, from about 8.6 to about 9.0, from about 9.6 to about 10.0, from about 12.2 to about 12.6, from about 13.1 to about 13.5, about 14.2 to about 14.6, from about 17.4 to about 17.8, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0577] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 7.1 to about 7.3, from about 7.9 to about 8.1, from about 8.7 to about 8.9, from about 9.7 to about 9.9, from about 12.3 to about 12.5, from about 13.2 to about 13.4, about 14.3 to about 14.5, from about 17.5 to about 17.7, and from about 26.1 to about 26.3 °2θ using Cu Kα radiation.

[0578] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) is characterized by an XRPD pattern having a peak at about 7.20, about 7.95, about 8.77, about 9.78, about 12.37, about 13.26, about 14.41, about 17.60, and about 26.22 °2θ using Cu Kα radiation.

[0579] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 80 °C and about 120 °C, between about 85 °C and about 115 °C, between about 90 °C and about 110 °C, between about 95 °C and about 105 °C, or between about 99 °C and about 101 °C.

[0580] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 220 °C and about 260 °C, between about 225 °C and about 255 °C, between about 230 °C and about 250 °C, between about 235 °C and about 245 °C, or between about 239 °C and about 240 °C.

[0581] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 100 °C and/or at about 239.2 °C.

Compound 4R Succinate Salt Type A

[0582] In some embodiments, the compound is a succinate salt of Compound 4R.

[0583] In some embodiments, the compound is a crystalline form of a succinate salt of Compound 4R.

[0584] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least one peak selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0585] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least two peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0586] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least three peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0587] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least four peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0588] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least five peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0589] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least six peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0590] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least seven peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0591] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least eight peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0592] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having at least nine peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0593] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having one peak selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0594] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having two peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0595] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having three peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0596] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having four peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0597] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having five peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0598] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having six peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0599] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having seven peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0600] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having eight peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0601] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having nine peaks selected from 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0602] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at 6.3±0.2, 6.8±0.2, 9.2±0.2, 12.7±0.2, 13.1±0.2, 14.4±0.2, 20.1±0.2, 22.0±0.2, 26.2±0.2, and 27.1±0.2 °2θ (e.g., 6.3±0.1, 6.8±0.1, 9.2±0.1, 12.7±0.1, 13.1±0.1, 14.4±0.1, 20.1±0.1, 22.0±0.1, 26.2±0.1, and 27.1±0.1 °2θ) using Cu Kα radiation.

[0603] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.6 to about 7.0, and from about 9.0 to about 9.4 °2θ using Cu Kα radiation.

[0604] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.6 to about 7.0, from about 9.0 to about 9.4, and from about 12.9 to about 13.3 °2θ using Cu Kα radiation.

[0605] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.6 to about 7.0, from about 9.0 to about 9.4, from about 12.9 to about 13.3, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0606] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.6 to about 7.0, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0607] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.6 to about 7.0, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, from about 19.9 to about 20.3, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0608] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.6 to about 7.0, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, from about 14.2 to about 14.6, from about 19.9 to about 20.3, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0609] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.6 to about 7.0, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, from about 14.2 to about 14.6, from about 19.9 to about 20.3, from about 21.8 to about 22.2, and from about 26.0 to about 26.4 °2θ using Cu Kα radiation.

[0610] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.1 to about 6.5, from about 6.6 to about 7.0, from about 9.0 to about 9.4, from about 12.5 to about 12.9, from about 12.9 to about 13.3, from about 14.2 to about 14.6, from about 19.9 to about 20.3, from about 21.8 to about 22.2, from about 26.0 to about 26.4, and from about 26.9 to about 27.3 °2θ using Cu Kα radiation.

[0611] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at from about 6.2 to about 6.4, from about 6.7 to about 6.9, from about 9.1 to about 9.3, from about 12.6 to about 12.8, from about 13.0 to about 13.2, from about 14.3 to about 14.5, from about 20.0 to about 20.2, from about 21.9 to about 22.1, from about 26.1 to about 26.3, and from about 27.0 to about 27.2 °2θ using Cu Kα radiation.

[0612] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) is characterized by an XRPD pattern having a peak at about 6.31, about 6.79, about 9.24, about 12.66, about 13.13, about 14.37, about 20.08, about 22.00, about 26.15, and about 27.05 °2θ using Cu Kα radiation.

[0613] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 70 °C and about 110 °C, between about 75 °C and about 105 °C, between about 80 °C and about 100 °C, between about 85 °C and about 95 °C, or between about 88 °C and about 89 °C.

[0614] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 125 °C and about 165 °C, between about 130 °C and about 160 °C, between about 135 °C and about 155 °C, between about 140 °C and about 150 °C, or between about 146 °C and about 148 °C.

[0615] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 175 °C and about 215 °C, between about 180 °C and about 210 °C, between about 185 °C and about 205 °C, between about 190 °C and about 200 °C, or between about 193 °C and about 194 °C.

[0616] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 210 °C and about 250 °C, between about 215 °C and about 245 °C, between about 220 °C and about 240 °C, between about 225 °C and about 235 °C, or between about 231 °C and about 233 °C.

[0617] In some embodiments, the compound (e.g., the crystalline form of the succinate salt of Compound 4R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 88.7 °C, at about 147.0 °C, at about 193.6 °C, and/or at about 232.0 °C.

[0618] In some embodiments, the compound is Compound 4S, a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0619] In some embodiments, the compound is Compound 4S.

[0620] In some embodiments, the compound is a crystalline form of Compound 4S.

[0621] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 4S.

[0622] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 4S.

[0623] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 4S.

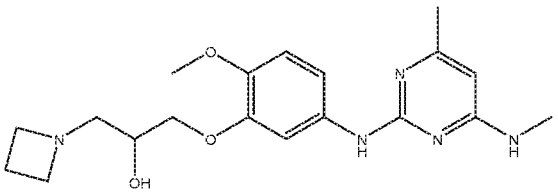
[0624] In some embodiments, the compound is a hydrochloride salt of Compound 4S.

[0625] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 4S.

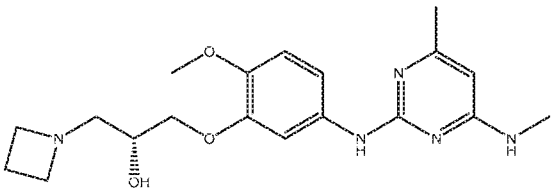
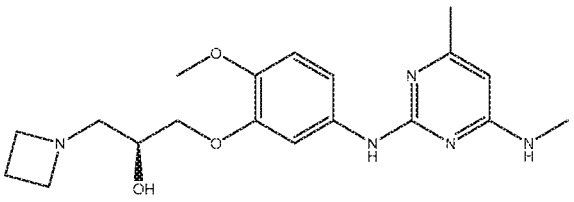
[0626] In some embodiments, the compound is a succinate salt of Compound 4R.

[0627] In some embodiments, the compound is a crystalline form of a succinate salt of Compound 4R.

Compound 5

[0628] In some embodiments, the compound is  (Compound 5), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0629] In some embodiments, the compound is Compound 5.

[0630] In some embodiments, the compound is  (Compound 5R),  (Compound 5S), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0631] In some embodiments, the compound is Compound 5R or Compound 5S.

[0632] In some embodiments, the compound is Compound 5R, a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[0633] In some embodiments, the compound is Compound 5R.

[0634] In some embodiments, the compound is a crystalline form of Compound 5R.

[0635] In some embodiments, the crystalline form of Compound 5R is an anhydrate.

[0636] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 5R.

[0637] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 5R.

[0638] In some embodiments, the crystalline form of the pharmaceutically acceptable salt of Compound 5R is an anhydrate.

[0639] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 5R.

Compound 5R Freebase Type A

[0640] In some embodiments, the compound is Compound 5R.

[0641] In some embodiments, the compound is a crystalline form of Compound 5R.

[0642] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0643] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0644] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0645] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0646] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0647] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having one peak selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0648] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 12.8±0.2, 13.4±0.2, 14.6±0.2,

17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0649] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0650] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0651] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0652] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at 12.8±0.2, 13.4±0.2, 14.6±0.2, 17.6±0.2, 20.9±0.2, and 23.9±0.2 °2θ (e.g., 12.8±0.1, 13.4±0.1, 14.6±0.1, 17.6±0.1, 20.9±0.1, and 23.9±0.1 °2θ) using Cu Kα radiation.

[0653] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.6 to about 13.0, from about 13.1 to about 13.6, and from about 20.7 to about 30.1 °2θ using Cu Kα radiation.

[0654] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.6 to about 13.0, from about 13.1 to about 13.6, from about 17.4 to about 17.8, and from about 20.7 to about 30.1 °2θ using Cu Kα radiation.

[0655] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.6 to about 13.0, from about 13.1 to about 13.6, from about 17.4 to about 17.8, from about 20.7 to about 30.1, and from about 23.8 to about 24.0 °2θ using Cu Kα radiation.

[0656] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.6 to about 13.0, from about 13.1

to about 13.6, from about 14.4 to about 14.8, from about 17.4 to about 17.8, from about 20.7 to about 30.1, and from about 23.8 to about 24.0 °2θ using Cu Kα radiation.

[0657] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.7 to about 12.9, from about 13.3 to about 13.5, from about 14.5 to about 14.7, from about 17.5 to about 17.7, from about 20.8 to about 30.0, and from about 23.7 to about 24.1 °2θ using Cu Kα radiation.

[0658] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at about 12.81, about 13.39, about 14.57, about 17.55, about 20.85, and about 23.91 °2θ using Cu Kα radiation.

[0659] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 90 °C and about 130 °C, between about 95 °C and about 125 °C, between about 100 °C and about 120 °C, between about 105 °C and about 115 °C, or between about 109 °C and about 112 °C.

[0660] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 120 °C and about 160 °C, between about 125 °C and about 155 °C, between about 130 °C and about 150 °C, between about 135 °C and about 145 °C, or between about 140 °C and about 142 °C.

[0661] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 110.5 °C and/or at about 141.0 °C.

Compound 5R Freebase Type B

[0662] In some embodiments, the compound is Compound 5R.

[0663] In some embodiments, the compound is a crystalline form of Compound 5R.

[0664] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0665] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 10.2±0.2, 12.5±0.2,

14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0666] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0667] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0668] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0669] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0670] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having one peak selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0671] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0672] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0673] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0674] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0675] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0676] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at 10.2±0.2, 12.5±0.2, 14.0±0.2, 17.8±0.2, 18.8±0.2, 19.3±0.2, and 24.6±0.2 °2θ (e.g., 10.2±0.1, 12.5±0.1, 14.0±0.1, 17.8±0.1, 18.8±0.1, 19.3±0.1, and 24.6±0.1 °2θ) using Cu Kα radiation.

[0677] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 13.8 to about 14.2, from about 17.6 to about 18.0, and from about 18.6 to about 19.0 °2θ using Cu Kα radiation.

[0678] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.3 to about 12.7, from about 13.8 to about 14.2, from about 17.6 to about 18.0, and from about 18.6 to about 19.0 °2θ using Cu Kα radiation.

[0679] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.3 to about 12.7, from about 13.8 to about 14.2, from about 17.6 to about 18.0, from about 18.6 to about 19.0, and about from about 19.1 to about 19.5 °2θ using Cu Kα radiation.

[0680] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.3 to about 12.7, from about 13.8 to about 14.2, from about 17.6 to about 18.0, from about 18.6 to about 19.0, from about 19.1 to about 19.5, and from about 24.4 to about 24.8 °2θ using Cu Kα radiation.

[0681] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 10.0 to about 10.4, from about 12.3 to about 12.7, from about 13.8 to about 14.2, from about 17.6 to about 18.0, from about 18.6 to about 19.0, from about 19.1 to about 19.5, and from about 24.4 to about 24.8 °2θ using Cu Kα radiation.

[0682] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 10.1 to about 10.3, from about 12.4 to about 12.6, from about 13.9 to about 14.1, from about 17.7 to about 17.9, from about 18.7 to about 18.9, from about 19.2 to about 19.4, and from about 24.5 to about 24.7 °2θ using Cu Kα radiation.

[0683] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at about 10.17, about 12.49, about 13.97, about 17.75, about 18.82, about 19.34, and about 24.56 °2θ using Cu Kα radiation.

[0684] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 120 °C and about 160 °C, between about 125 °C and about 155 °C, between about 130 °C and about 150 °C, between about 135 °C and about 145 °C, or between about 138 °C and about 141 °C.

[0685] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 139.5 °C.

Compound 5R Freebase Type C

[0686] In some embodiments, the compound is Compound 5R.

[0687] In some embodiments, the compound is a crystalline form of Compound 5R.

[0688] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0689] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 8.5±0.2, 12.9±0.2,

13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0690] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0691] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0692] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0693] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0694] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least seven peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0695] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least eight peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g.,

8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0696] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having at least nine peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0697] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having one peak selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0698] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0699] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0700] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0701] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1,

12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0702] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0703] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having seven peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0704] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having eight peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0705] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having nine peaks selected from 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0706] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at 8.5±0.2, 12.9±0.2, 13.6±0.2, 15.4±0.2, 16.0±0.2, 18.1±0.2, 21.3±0.2, 21.6±0.2, 22.9±0.2, and 24.8±0.2 °2θ (e.g., 8.5±0.1, 12.9±0.1, 13.6±0.1, 15.4±0.1, 16.0±0.1, 18.1±0.1, 21.3±0.1, 21.6±0.1, 22.9±0.1, and 24.8±0.1 °2θ) using Cu Kα radiation.

[0707] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.3 to about 8.7, from about 12.7 to about 13.1, and from about 21.4 to about 21.8 °2θ using Cu Kα radiation.

[0708] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.3 to about 8.7, from about 12.7 to about 13.1, from about 13.4 to about 13.8, and from about 21.4 to about 21.8 °2θ using Cu Kα radiation.

[0709] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.3 to about 8.7, from about 12.7 to about 13.1, from about 13.4 to about 13.8, from about 15.2 to about 15.6, and from about 21.4 to about 21.8 °2θ using Cu Kα radiation.

[0710] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.3 to about 8.7, from about 12.7 to about 13.1, from about 13.4 to about 13.8, from about 15.2 to about 15.6, from about 17.9 to about 18.3, and from about 21.4 to about 21.8 °2θ using Cu Kα radiation.

[0711] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.3 to about 8.7, from about 12.7 to about 13.1, from about 13.4 to about 13.8, from about 15.2 to about 15.6, from about 17.9 to about 18.3, from about 21.1 to about 21.5, and from about 21.4 to about 21.8 °2θ using Cu Kα radiation.

[0712] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.3 to about 8.7, from about 12.7 to about 13.1, from about 13.4 to about 13.8, from about 15.2 to about 15.6, from about 15.8 to about 16.2, from about 17.9 to about 18.3, from about 21.1 to about 21.5, and from about 21.4 to about 21.8 °2θ using Cu Kα radiation.

[0713] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.3 to about 8.7, from about 12.7 to about 13.1, from about 13.4 to about 13.8, from about 15.2 to about 15.6, from about 15.8 to about 16.2, from about 17.9 to about 18.3, from about 21.1 to about 21.5, from about 21.4 to about 21.8, and from about 22.7 to about 23.1 °2θ using Cu Kα radiation.

[0714] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.3 to about 8.7, from about 12.7 to about 13.1, from about 13.4 to about 13.8, from about 15.2 to about 15.6, from about 15.8 to about 16.2, from about 17.9 to about 18.3, from about 21.1 to about 21.5, from about 21.4 to about 21.8, from about 22.7 to about 23.1, and from about 24.6 to about 25.0 °2θ using Cu Kα radiation.

[0715] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.4 to about 8.6, from about 12.8 to about 13.0, from about 13.5 to about 13.7, from about 15.3 to about 15.5, from about 15.9 to about 16.1, from about 18.0 to about 18.2, from about 21.2 to about 21.4, from about 21.5 to about 21.7, from about 22.8 to about 23.0, and from about 24.7 to about 24.9 °2θ using Cu Kα radiation.

[0716] In some embodiments, the compound (e.g., the crystalline form of Compound 5R) is characterized by an XRPD pattern having a peak at about 8.48, about 12.86, about 13.55, about 15.41, about 16.01, about 18.14, about 21.32, about 21.63, about 22.87, and about 24.84 °2θ using Cu Kα radiation.

Compound 5R Sulfate Salt Type A

[0717] In some embodiments, the compound is a sulfate salt of Compound 5R.

[0718] In some embodiments, the compound is a crystalline form of a sulfate salt of Compound 5R.

[0719] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0720] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0721] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0722] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0723] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0724] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0725] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0726] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0727] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0728] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0729] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0730] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 6.8±0.2,

8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0731] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 6.8±0.2, 8.7±0.2, 14.0±0.2, 16.4±0.2, 23.5±0.2, 25.3±0.2, and 26.5±0.2 °2θ (e.g., 6.8±0.1, 8.7±0.1, 14.0±0.1, 16.4±0.1, 23.5±0.1, 25.3±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0732] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.5 to about 8.9, from about 13.8 to about 14.2, and from about 16.2 to about 16.6 °2θ using Cu Kα radiation.

[0733] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.5 to about 8.9, from about 13.8 to about 14.2, from about 16.2 to about 16.6, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0734] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 8.5 to about 8.9, from about 13.8 to about 14.2, from about 16.2 to about 16.6, from about 25.1 to about 25.5, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0735] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.5 to about 8.9, from about 13.8 to about 14.2, from about 16.2 to about 16.6, from about 25.1 to about 25.5, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0736] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 8.5 to about 8.9, from about 13.8 to about 14.2, from about 16.2 to about 16.6, from about 23.3 to about 23.7, from about 25.1 to about 25.5, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0737] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.7 to about 6.9, from about 8.6 to about 8.8, from about 13.9 to about 14.1, from about 16.3 to about 16.5, from about 23.4 to about 23.6, from about 25.2 to about 25.4, and from about 26.4 to about 26.6 °2θ using Cu Kα radiation.

[0738] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 6.77, about 8.65, about 13.95, about 16.42, about 23.49, about 25.29, and about 26.50 °2θ using Cu Kα radiation.

Compound 5R Glycolate Salt Type A

[0739] In some embodiments, the compound is a glycolate salt of Compound 5R.

[0740] In some embodiments, the compound is a crystalline form of a glycolate salt of Compound 5R.

[0741] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0742] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0743] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0744] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0745] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0746] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from

6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0747] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0748] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0749] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0750] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0751] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0752] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0753] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 6.5±0.2, 14.1±0.2, 17.8±0.2, 18.9±0.2, 24.7±0.2, 25.7±0.2, and 26.5±0.2 °2θ (e.g., 6.5±0.1, 14.1±0.1, 17.8±0.1, 18.9±0.1, 24.7±0.1, 25.7±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0754] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 17.6 to about 18.0, and from about 18.7 to about 19.1 °2θ using Cu Kα radiation.

[0755] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 17.6 to about 18.0, from about 18.7 to about 19.1, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0756] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 17.6 to about 18.0, from about 18.7 to about 19.1, from about 25.5 to about 25.9, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0757] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 17.6 to about 18.0, from about 18.7 to about 19.1, from about 24.5 to about 24.9, from about 25.5 to about 25.9, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0758] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 13.9 to about 14.3, from about 17.6 to about 18.0, from about 18.7 to about 19.1, from about 24.5 to about 24.9, from about 25.5 to about 25.9, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0759] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.4 to about 6.6, from about 14.0 to about 14.2, from about 17.7 to about 17.9, from about 18.8 to about 19.0, from about 24.6 to about 24.8, from about 25.6 to about 25.8, and from about 26.4 to about 26.6 °2θ using Cu Kα radiation.

[0760] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 6.52, about 14.06, about 17.83, about 18.94, about 24.69, about 25.67, and about 26.49 °2θ using Cu Kα radiation.

Compound 5R Fumarate Salt Type A

[0761] In some embodiments, the compound is a fumarate salt of Compound 5R.

[0762] In some embodiments, the compound is a crystalline form of a fumarate salt of Compound 5R.

[0763] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0764] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0765] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0766] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0767] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0768] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g.,

5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0769] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having at least seven peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0770] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0771] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0772] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0773] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0774] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1,

7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0775] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0776] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having seven peaks selected from 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0777] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 5.9±0.2, 7.7±0.2, 11.3±0.2, 11.9±0.2, 15.4±0.2, 18.4±0.2, 25.8±0.2, and 26.5±0.2 °2θ (e.g., 5.9±0.1, 7.7±0.1, 11.3±0.1, 11.9±0.1, 15.4±0.1, 18.4±0.1, 25.8±0.1, and 26.5±0.1 °2θ) using Cu Kα radiation.

[0778] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 7.5 to about 7.9, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0779] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 7.5 to about 7.9, from about 15.2 to about 15.6, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0780] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 7.5 to about 7.9, from about 15.2 to about 15.6, from about 25.6 to about 26.0, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0781] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 7.5 to about 7.9, from about 15.2 to about 15.6, from about 18.2 to about 18.6, from about 25.6 to about 26.0, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0782] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 7.5 to about 7.9, from about 11.7 to about 12.1, from about 15.2 to about 15.6, from about 18.2 to about 18.6, from about 25.6 to about 26.0, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0783] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 7.5 to about 7.9, from about 11.1 to about 11.5, from about 11.7 to about 12.1, from about 15.2 to about 15.6, from about 18.2 to about 18.6, from about 25.6 to about 26.0, and from about 26.3 to about 26.7 °2θ using Cu Kα radiation.

[0784] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.0, from about 7.6 to about 7.8, from about 11.2 to about 11.4, from about 11.8 to about 12.0, from about 15.3 to about 15.5, from about 18.3 to about 18.5, from about 25.7 to about 25.9, and from about 26.4 to about 26.6 °2θ using Cu Kα radiation.

[0785] In some embodiments, the compound (e.g., the crystalline form of the fumarate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 5.94, about 7.66, about 11.31, about 11.88, about 15.40, about 18.41, about 25.84, and about 26.47 °2θ using Cu Kα radiation.

Compound 5R Hippurate Salt Type A

[0786] In some embodiments, the compound is a hippurate salt of Compound 5R.

[0787] In some embodiments, the compound is a crystalline form of a hippurate salt of Compound 5R.

[0788] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0789] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from

6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0790] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0791] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0792] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0793] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0794] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0795] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0796] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0797] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0798] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0799] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0800] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 6.5±0.2, 9.7±0.2, 11.0±0.2, 13.0±0.2, 19.4±0.2, 23.6±0.2, and 26.1±0.2 °2θ (e.g., 6.5±0.1, 9.7±0.1, 11.0±0.1, 13.0±0.1, 19.4±0.1, 23.6±0.1, and 26.1±0.1 °2θ) using Cu Kα radiation.

[0801] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 12.8 to about 13.2, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0802] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 12.8 to about 13.2, from about 19.2 to about 19.6, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0803] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 12.8 to about 13.2, from about 19.2 to about 19.6, from about 23.4 to about 23.8, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0804] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 9.5 to about 9.9, from about 12.8 to about 13.2, from about 19.2 to about 19.6, from about 23.4 to about 23.8, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0805] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.3 to about 6.7, from about 9.5 to about 9.9, from about 10.8 to about 11.2, from about 12.8 to about 13.2, from about 19.2 to about 19.6, from about 23.4 to about 23.8, and from about 25.9 to about 26.3 °2θ using Cu Kα radiation.

[0806] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.4 to about 6.6, from about 9.6 to about 9.8, from about 10.9 to about 11.1, from about 12.9 to about 13.1, from about 19.3 to about 19.5, from about 23.5 to about 23.7, and from about 26.0 to about 26.2 °2θ using Cu Kα radiation.

[0807] In some embodiments, the compound (e.g., the crystalline form of the hippurate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 6.49, about 9.70, about 10.98, about 12.96, about 19.44, about 23.62, and about 26.07 °2θ using Cu Kα radiation.

Compound 5R Adipate Salt Type A

[0808] In some embodiments, the compound is an adipate salt of Compound 5R.

[0809] In some embodiments, the compound is a crystalline form of an adipate salt of Compound 5R.

[0810] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0811] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0812] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g.,

10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0813] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0814] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0815] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0816] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having at least seven peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0817] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0818] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1,

13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0819] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0820] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0821] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0822] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0823] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having seven peaks selected from 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0824] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 10.7±0.2, 13.1±0.2, 17.8±0.2, 18.8±0.2, 21.6±0.2, 22.9±0.2, 24.6±0.2, and 25.5±0.2 °2θ (e.g., 10.7±0.1, 13.1±0.1, 17.8±0.1, 18.8±0.1, 21.6±0.1, 22.9±0.1, 24.6±0.1, and 25.5±0.1 °2θ) using Cu Kα radiation.

[0825] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 21.4 to about 21.8, from about 22.7 to about 23.1, and from about 25.3 to about 25.7 °2θ using Cu Kα radiation.

[0826] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.9 to about 13.3, from about 21.4 to about 21.8, from about 22.7 to about 23.1, and from about 25.3 to about 25.7 °2θ using Cu Kα radiation.

[0827] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 12.9 to about 13.3, from about 17.6 to about 18.0, from about 21.4 to about 21.8, from about 22.7 to about 23.1, and from about 25.3 to about 25.7 °2θ using Cu Kα radiation.

[0828] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 10.5 to about 10.9, from about 12.9 to about 13.3, from about 17.6 to about 18.0, from about 21.4 to about 21.8, from about 22.7 to about 23.1, and from about 25.3 to about 25.7 °2θ using Cu Kα radiation.

[0829] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 10.5 to about 10.9, from about 12.9 to about 13.3, from about 17.6 to about 18.0, from about 18.6 to about 19.0, from about 21.4 to about 21.8, from about 22.7 to about 23.1, and from about 25.3 to about 25.7 °2θ using Cu Kα radiation.

[0830] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 10.5 to about 10.9, from about 12.9 to about 13.3, from about 17.6 to about 18.0, from about 18.6 to about 19.0, from about 21.4 to about 21.8, from about 22.7 to about 23.1, from about 24.4 to about 24.8, and from about 25.3 to about 25.7 °2θ using Cu Kα radiation.

[0831] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 10.6 to about 10.8, from about 13.0 to about 13.2, from about 17.7 to about 17.9, from about 18.7 to about 18.9, from about 21.5 to about 21.7, from about 22.8 to about 23.0, from about 24.5 to about 24.7, and from about 25.4 to about 25.6 °2θ using Cu Kα radiation.

[0832] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 10.66, about 13.06, about 17.78, about 18.84, about 21.55, about 22.89, about 24.55, and about 25.45 °2θ using Cu Kα radiation.

Compound 5R Gentisate Salt Type A

[0833] In some embodiments, the compound is a gentisate salt of Compound 5R.

[0834] In some embodiments, the compound is a crystalline form of a gentisate salt of Compound 5R.

[0835] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0836] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0837] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0838] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0839] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g.,

5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0840] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0841] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least seven peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0842] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least eight peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0843] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0844] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0845] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1,

7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0846] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0847] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0848] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0849] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having seven peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0850] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having eight peaks selected from 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0851] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 5.3±0.2, 7.7±0.2, 8.8±0.2, 9.3±0.2, 15.0±0.2, 16.2±0.2, 17.2±0.2, 21.2±0.2, and 25.3±0.2 °2θ (e.g., 5.3±0.1, 7.7±0.1, 8.8±0.1, 9.3±0.1, 15.0±0.1, 16.2±0.1, 17.2±0.1, 21.2±0.1, and 25.3±0.1 °2θ) using Cu Kα radiation.

[0852] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 9.1 to about 9.5, and from about 25.1 to about 25.5 °2θ using Cu Kα radiation.

[0853] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 8.6 to about 9.0, from about 9.1 to about 9.5, and from about 25.1 to about 25.5 °2θ using Cu Kα radiation.

[0854] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 7.5 to about 7.9, from about 8.6 to about 9.0, from about 9.1 to about 9.5, and from about 25.1 to about 25.5 °2θ using Cu Kα radiation.

[0855] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 7.5 to about 7.9, from about 8.6 to about 9.0, from about 9.1 to about 9.5, from about 16.0 to about 16.4, and from about 25.1 to about 25.5 °2θ using Cu Kα radiation.

[0856] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 7.5 to about 7.9, from about 8.6 to about 9.0, from about 9.1 to about 9.5, from about 16.0 to about 16.4, from about 17.0 to about 17.4, and from about 25.1 to about 25.5 °2θ using Cu Kα radiation.

[0857] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 7.5 to about 7.9, from about 8.6 to about 9.0, from about 9.1 to about 9.5, from about 14.8 to about 15.2, from about 16.0 to about 16.4, from about 17.0 to about 17.4, and from about 25.1 to about 25.5 °2θ using Cu Kα radiation.

[0858] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 7.5 to about 7.9, from about 8.6 to about 9.0, from about 9.1 to about 9.5, from about 14.8 to about 15.2, from about 16.0 to about 16.4, from about 17.0 to about 17.4, from about 21.1 to about 21.5, and from about 25.1 to about 25.5 °2θ using Cu Kα radiation.

[0859] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.2 to about 5.4, from about 7.6 to about 7.8, from about 8.7 to about 8.9, from about 9.2 to about 9.4, from about 14.9 to about 15.1, from about 16.1 to about 16.3, from about 17.1 to about 17.3, from about 21.2 to about 21.4, and from about 25.2 to about 25.4 °2θ using Cu Kα radiation.

[0860] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 5.25, about 7.66, about 8.84, about 9.34, about 14.97, about 16.22, about 17.15, about 21.25, and about 25.26 °2θ using Cu Kα radiation.

Compound 5R Gentisate Salt Type E

[0861] In some embodiments, the compound is a gentisate salt of Compound 5R.

[0862] In some embodiments, the compound is a crystalline form of a gentisate salt of Compound 5R.

[0863] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0864] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0865] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0866] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ

(e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0867] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0868] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0869] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least seven peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0870] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having at least eight peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0871] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0872] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g.,

6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0873] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0874] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0875] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0876] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0877] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having seven peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0878] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having eight peaks selected from 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g.,

6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0879] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 6.0±0.2, 9.1±0.2, 15.0±0.2, 17.7±0.2, 18.4±0.2, 20.7±0.2, 23.8±0.2, 25.8±0.2, and 26.6±0.2 °2θ (e.g., 6.0±0.1, 9.1±0.1, 15.0±0.1, 17.7±0.1, 18.4±0.1, 20.7±0.1, 23.8±0.1, 25.8±0.1, and 26.6±0.1 °2θ) using Cu Kα radiation.

[0880] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.2, from about 14.8 to about 15.2, and from about 18.2 to about 18.6 °2θ using Cu Kα radiation.

[0881] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.2, from about 8.9 to about 9.3, from about 14.8 to about 15.2, and from about 18.2 to about 18.6 °2θ using Cu Kα radiation.

[0882] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.2, from about 8.9 to about 9.3, from about 14.8 to about 15.2, from about 18.2 to about 18.6, and from about 20.5 to about 20.9 °2θ using Cu Kα radiation.

[0883] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.2, from about 8.9 to about 9.3, from about 14.8 to about 15.2, from about 18.2 to about 18.6, from about 20.5 to about 20.9, and from about 26.4 to about 26.8 °2θ using Cu Kα radiation.

[0884] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.2, from about 8.9 to about 9.3, from about 14.8 to about 15.2, from about 17.5 to about 17.9, from about 18.2 to about 18.6, from about 20.5 to about 20.9, and from about 26.4 to about 26.8 °2θ using Cu Kα radiation.

[0885] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.2, from about 8.9 to about 9.3, from about 14.8 to about 15.2, from about 17.5 to about 17.9, from

about 18.2 to about 18.6, from about 20.5 to about 20.9, from about 25.6 to about 26.0, and from about 26.4 to about 26.8 °2θ using Cu Kα radiation.

[0886] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.2, from about 8.9 to about 9.3, from about 14.8 to about 15.2, from about 17.5 to about 17.9, from about 18.2 to about 18.6, from about 20.5 to about 20.9, from about 23.6 to about 24.0, from about 25.6 to about 26.0, and from about 26.4 to about 26.8 °2θ using Cu Kα radiation.

[0887] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.1, from about 9.0 to about 9.2, from about 14.9 to about 15.1, from about 17.6 to about 17.8, from about 18.3 to about 18.5, from about 20.6 to about 20.8, from about 23.7 to about 23.9, from about 25.7 to about 25.9, and from about 26.5 to about 26.7 °2θ using Cu Kα radiation.

[0888] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 6.01, about 9.13, about 15.02, about 17.74, about 18.41, about 20.72, about 23.77, about 25.84, and about 26.62 °2θ using Cu Kα radiation.

[0889] In some embodiments, the compound (e.g., the crystalline form of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 160 °C and about 200 °C, between about 165 °C and about 195 °C, between about 170 °C and about 190 °C, between about 174 °C and about 185 °C, or between about 178 °C and about 180 °C.

[0890] In some embodiments, the compound (e.g., the crystalline form of the gentisate salt of Compound 5R) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 179 °C.

Compound 5R Benzoate Salt Type A

[0891] In some embodiments, the compound is a benzoate salt of Compound 5R.

[0892] In some embodiments, the compound is a crystalline form of a benzoate salt of Compound 5R.

[0893] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ

(e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0894] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0895] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0896] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0897] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0898] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0899] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least seven peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ

(e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0900] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least eight peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0901] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0902] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0903] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0904] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0905] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,.

5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0906] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0907] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having seven peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0908] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having eight peaks selected from 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0909] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 5.2±0.2, 9.7±0.2, 15.5±0.2, 18.3±0.2, 19.0±0.2, 21.3±0.2, 22.9±0.2, 23.7±0.2, and 26.9±0.2 °2θ (e.g,. 5.2±0.1, 9.7±0.1, 15.5±0.1, 18.3±0.1, 19.0±0.1, 21.3±0.1, 22.9±0.1, 23.7±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[0910] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 15.3 to about 15.7, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[0911] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 15.3 to about 15.7, from about 18.8 to about 19.2, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[0912] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5,

from about 15.3 to about 15.7, from about 18.8 to about 19.2, from about 21.1 to about 21.5, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[0913] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 9.5 to about 9.9, from about 15.3 to about 15.7, from about 18.8 to about 19.2, from about 21.1 to about 21.5, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[0914] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 9.5 to about 9.9, from about 15.3 to about 15.7, from about 18.8 to about 19.2, from about 21.1 to about 21.5, from about 22.7 to about 23.1, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[0915] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 9.5 to about 9.9, from about 15.3 to about 15.7, from about 18.8 to about 19.2, from about 21.1 to about 21.5, from about 22.7 to about 23.1, from about 23.5 to about 23.9, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[0916] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.5, from about 9.5 to about 9.9, from about 15.3 to about 15.7, from about 18.1 to about 18.5, from about 18.8 to about 19.2, from about 21.1 to about 21.5, from about 22.7 to about 23.1, from about 23.5 to about 23.9, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[0917] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.2 to about 5.4, from about 9.6 to about 9.8, from about 15.4 to about 15.6, from about 18.2 to about 18.4, from about 18.9 to about 19.1, from about 21.2 to about 21.4, from about 22.8 to about 23.0, from about 23.6 to about 23.8, and from about 26.8 to about 27.0 °2θ using Cu Kα radiation.

[0918] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 5.28, about 9.66, about 15.51, about 18.25, about 19.03, about 21.27, about 22.91, about 23.73, and about 26.93 °2θ using Cu Kα radiation.

Compound 5R Benzoate Salt Type B

[0919] In some embodiments, the compound is a benzoate salt of Compound 5R.

[0920] In some embodiments, the compound is a crystalline form of a benzoate salt of Compound 5R.

[0921] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0922] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0923] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0924] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0925] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0926] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0927] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 7.9±0.2,

10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0928] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0929] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0930] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0931] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 7.9±0.2, 10.1±0.2, 11.7±0.2, 17.2±0.2, 24.4±0.2, and 25.1±0.2 °2θ (e.g., 7.9±0.1, 10.1±0.1, 11.7±0.1, 17.2±0.1, 24.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0932] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 17.0 to about 17.4, from about 24.2 to about 24.6, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[0933] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 7.7 to about 8.1, from about 17.0 to about 17.4, from about 24.2 to about 24.6, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[0934] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 7.7 to about 8.1, from about 11.5 to about 11.9, from about 17.0 to about 17.4, from about 24.2 to about 24.6, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[0935] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 7.7 to about 8.1,

from about 9.9 to about 10.3, from about 11.5 to about 11.9, from about 17.0 to about 17.4, from about 24.2 to about 24.6, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[0936] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 7.8 to about 8.0, from about 10.0 to about 10.2, from about 11.6 to about 11.8, from about 17.1 to about 17.3, from about 24.3 to about 24.5, and from about 25.0 to about 25.2 °2θ using Cu Kα radiation.

[0937] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 7.90, about 10.08, about 11.71, about 17.19, about 24.44, and about 25.13 °2θ using Cu Kα radiation.

Compound 5R Benzoate Salt Type C

[0938] In some embodiments, the compound is a benzoate salt of Compound 5R.

[0939] In some embodiments, the compound is a crystalline form of a benzoate salt of Compound 5R.

[0940] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0941] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0942] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0943] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from

5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0944] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0945] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0946] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least seven peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0947] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least eight peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0948] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least nine peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0949] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ

(e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0950] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0951] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0952] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0953] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0954] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0955] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having seven peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ

(e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0956] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having eight peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0957] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having nine peaks selected from 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0958] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 5.5±0.2, 11.1±0.2, 14.3±0.2, 15.9±0.2, 16.7±0.2, 17.0±0.2, 17.5±0.2, 19.1±0.2, 24.4±0.2, and 24.9±0.2 °2θ (e.g., 5.5±0.1, 11.1±0.1, 14.3±0.1, 15.9±0.1, 16.7±0.1, 17.0±0.1, 17.5±0.1, 19.1±0.1, 24.4±0.1, and 24.9±0.1 °2θ) using Cu Kα radiation.

[0959] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.3 to about 5.7, from about 10.9 to about 11.3, and from about 24.2 to about 24.6 °2θ using Cu Kα radiation.

[0960] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.3 to about 5.7, from about 10.9 to about 11.3, from about 14.1 to about 14.5, and from about 24.2 to about 24.6 °2θ using Cu Kα radiation.

[0961] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.3 to about 5.7, from about 10.9 to about 11.3, from about 14.1 to about 14.5, from about 15.7 to about 16.1, and from about 24.2 to about 24.6 °2θ using Cu Kα radiation.

[0962] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.3 to about 5.7,

from about 10.9 to about 11.3, from about 14.1 to about 14.5, from about 15.7 to about 16.1, from about 24.2 to about 24.6, and from about 24.7 to about 25.1 °2θ using Cu Kα radiation.

[0963] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.3 to about 5.7, from about 10.9 to about 11.3, from about 14.1 to about 14.5, from about 15.7 to about 16.1, from about 18.9 to about 19.3, from about 24.2 to about 24.6, and from about 24.7 to about 25.1 °2θ using Cu Kα radiation.

[0964] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.3 to about 5.7, from about 10.9 to about 11.3, from about 14.1 to about 14.5, from about 15.7 to about 16.1, from about 17.3 to about 17.7, from about 18.9 to about 19.3, from about 24.2 to about 24.6, and from about 24.7 to about 25.1 °2θ using Cu Kα radiation.

[0965] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.3 to about 5.7, from about 10.9 to about 11.3, from about 14.1 to about 14.5, from about 15.7 to about 16.1, from about 16.8 to about 17.2, from about 17.3 to about 17.7, from about 18.9 to about 19.3, from about 24.2 to about 24.6, and from about 24.7 to about 25.1 °2θ using Cu Kα radiation.

[0966] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.3 to about 5.7, from about 10.9 to about 11.3, from about 14.1 to about 14.5, from about 15.7 to about 16.1, from about 16.5 to about 16.9, from about 16.8 to about 17.2, from about 17.3 to about 17.7, from about 18.9 to about 19.3, from about 24.2 to about 24.6, and from about 24.7 to about 25.1 °2θ using Cu Kα radiation.

[0967] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.4 to about 5.6, from about 11.0 to about 11.2, from about 14.2 to about 14.4, from about 15.8 to about 16.0, from about 16.6 to about 16.8, from about 16.9 to about 17.1, from about 17.4 to about 17.6, from about 19.0 to about 19.2, from about 24.3 to about 24.5, and from about 24.8 to about 25.0 °2θ using Cu Kα radiation.

[0968] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 5.51, about 11.10,

about 14.33, about 15.93, about 16.74, about 17.04, about 17.45, about 19.14, about 24.44, and about 24.86 °2θ using Cu Kα radiation.

Compound 5R Benzoate Salt Type E

[0969] In some embodiments, the compound is a benzoate salt of Compound 5R.

[0970] In some embodiments, the compound is a crystalline form of a benzoate salt of Compound 5R.

[0971] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0972] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0973] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0974] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0975] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0976] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0977] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0978] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0979] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 5.7±0.2, 6.2±0.2, 12.6±0.2, 15.4±0.2, and 25.1±0.2 °2θ (e.g., 5.7±0.1, 6.2±0.1, 12.6±0.1, 15.4±0.1, and 25.1±0.1 °2θ) using Cu Kα radiation.

[0980] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9, from about 6.1 to about 6.5, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[0981] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9, from about 6.1 to about 6.5, from about 12.4 to about 12.8, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[0982] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9, from about 6.1 to about 6.5, from about 12.4 to about 12.8, from about 15.2 to about 15.6, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[0983] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.6 to about 5.8, from about 6.2 to about 6.4, from about 12.5 to about 12.7, from about 15.3 to about 15.5, and from about 25.0 to about 25.2 °2θ using Cu Kα radiation.

[0984] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 5.69, about 6.25, about 12.57, about 15.36, and about 25.11 °2θ using Cu Kα radiation.

Compound 5R Benzoate Salt Type F

[0985] In some embodiments, the compound is a benzoate salt of Compound 5R.

[0986] In some embodiments, the compound is a crystalline form of a benzoate salt of Compound 5R.

[0987] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least one peak selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0988] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least two peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0989] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least three peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0990] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least four peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0991] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least five peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0992] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least six peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ

(e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0993] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least seven peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0994] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having at least eight peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0995] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having one peak selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0996] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having two peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0997] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having three peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0998] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having four peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g.,

6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[0999] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having five peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01000] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having six peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01001] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having seven peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01002] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having eight peaks selected from 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01003] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at 6.1±0.2, 12.3±0.2, 16.3±0.2, 18.3±0.2, 21.2±0.2, 22.2±0.2, 23.1±0.2, 24.4±0.2, and 26.3±0.2 °2θ (e.g., 6.1±0.1, 12.3±0.1, 16.3±0.1, 18.3±0.1, 21.2±0.1, 22.2±0.1, 23.1±0.1, 24.4±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01004] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.3, from about 12.1 to about 12.5, and from about 24.2 to about 24.6 °2θ using Cu Kα radiation.

[01005] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.3, from about 12.1 to about 12.5, from about 16.1 to about 16.5, and from about 24.2 to about 24.6 °2θ using Cu Kα radiation.

[01006] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.3, from about 12.1 to about 12.5, from about 16.1 to about 16.5, from about 18.1 to about 18.5, and from about 24.2 to about 24.6 °2θ using Cu Kα radiation.

[01007] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.3, from about 12.1 to about 12.5, from about 16.1 to about 16.5, from about 18.1 to about 18.5, from about 24.2 to about 24.6, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01008] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.3, from about 12.1 to about 12.5, from about 16.1 to about 16.5, from about 18.1 to about 18.5, from about 21.0 to about 21.4, from about 24.2 to about 24.6, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01009] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.3, from about 12.1 to about 12.5, from about 16.1 to about 16.5, from about 18.1 to about 18.5, from about 21.0 to about 21.4, from about 22.9 to about 23.3, from about 24.2 to about 24.6, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01010] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.3, from about 12.1 to about 12.5, from about 16.1 to about 16.5, from about 18.1 to about 18.5, from about 21.0 to about 21.4, from about 22.0 to about 22.4, from about 22.9 to about 23.3, from about 24.2 to about 24.6, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01011] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at from about 6.0 to about 6.2, from about 12.2 to about 12.4, from about 16.2 to about 16.4, from about 18.2 to about 18.4, from

about 21.1 to about 21.3, from about 22.1 to about 22.3, from about 23.0 to about 23.2, from about 24.3 to about 24.5, and from about 26.2 to about 26.4 °2θ using Cu Kα radiation.

[01012] In some embodiments, the compound (e.g., the crystalline form of the benzoate salt of Compound 5R) is characterized by an XRPD pattern having a peak at about 6.08, about 12.29, about 16.27, about 18.34, about 21.22, about 22.16, about 23.10, about 24.41, and about 26.25 °2θ using Cu Kα radiation.

[01013] In some embodiments, the compound is Compound 5S, a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[01014] In some embodiments, the compound is Compound 5S.

[01015] In some embodiments, the compound is a crystalline form of Compound 5S.

[01016] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 5S.

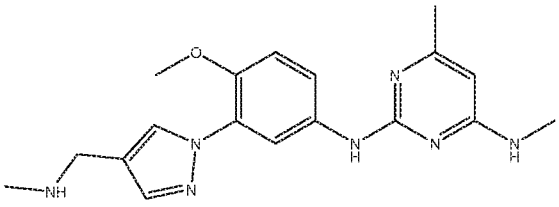
[01017] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 5S.

[01018] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 5S.

[01019] In some embodiments, the compound is a hydrochloride salt of Compound 5S.

[01020] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 5S.

Compound 6

[01021] In some embodiments, the compound is  (Compound 6), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[01022] In some embodiments, the compound is Compound 6.

[01023] In some embodiments, the compound is a crystalline form of Compound 6.

[01024] In some embodiments, the crystalline form of Compound 6 is an anhydrate.

[01025] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 6.

[01026] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 6.

[01027] In some embodiments, the crystalline form of the pharmaceutically acceptable salt of Compound 6 is an anhydrate.

[01028] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 6.

Compound 6 Freebase Type A

[01029] In some embodiments, the compound is Compound 6.

[01030] In some embodiments, the compound is a crystalline form of Compound 6.

[01031] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least one peak selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01032] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least two peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01033] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least three peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01034] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least four peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01035] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least five peaks selected from 4.5±0.2, 9.7±0.2,

10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01036] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least six peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01037] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having at least seven peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01038] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having one peak selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01039] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having two peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01040] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having three peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01041] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having four peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01042] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having five peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01043] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having six peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01044] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having seven peaks selected from 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01045] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at 4.5±0.2, 9.7±0.2, 10.5±0.2, 13.5±0.2, 15.3±0.2, 18.1±0.2, 24.3±0.2, and 25.8±0.2 °2θ (e.g., 4.5±0.1, 9.7±0.1, 10.5±0.1, 13.5±0.1, 15.3±0.1, 18.1±0.1, 24.3±0.1, and 25.8±0.1 °2θ) using Cu Kα radiation.

[01046] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 13.3 to about 13.7, and from about 25.6 to about 26.0 °2θ using Cu Kα radiation.

[01047] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 10.3 to about 10.7, from about 13.3 to about 13.7, and from about 25.6 to about 26.0 °2θ using Cu Kα radiation.

[01048] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 9.5 to about 9.9, from about 10.3 to about 10.7, from about 13.3 to about 13.7, and from about 25.6 to about 26.0 °2θ using Cu Kα radiation.

[01049] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 9.5 to about 9.9, from about 10.3 to about 10.7, from about 13.3 to about 13.7, from about 17.9 to about 18.3, and from about 25.6 to about 26.0 °2θ using Cu Kα radiation.

[01050] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 9.5 to about 9.9, from about 10.3 to about 10.7, from about 13.3 to about 13.7, from about 15.1 to about 15.5, from about 17.9 to about 18.3, and from about 25.6 to about 26.0 °2θ using Cu Kα radiation.

[01051] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 9.5 to about 9.9, from about 10.3 to about 10.7, from about 13.3 to about 13.7, from about 15.1 to about 15.5, from about 17.9 to about 18.3, from about 24.1 to about 24.5, and from about 25.6 to about 26.0 °2θ using Cu Kα radiation.

[01052] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at from about 4.4 to about 4.6, from about 9.6 to about 9.8, from about 10.4 to about 10.6, from about 13.4 to about 13.6, from about 15.2 to about 15.4, from about 18.0 to about 18.2, from about 24.2 to about 24.4, and from about 25.7 to about 25.9 °2θ using Cu Kα radiation.

[01053] In some embodiments, the compound (e.g., the crystalline form of Compound 4R) is characterized by an XRPD pattern having a peak at about 4.50, about 9.67, about 10.47, about 13.49, about 15.31, about 18.05, about 24.33, and about 25.77 °2θ using Cu Kα radiation.

[01054] In some embodiments, the compound (e.g., the crystalline form of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 175 °C and about 215 °C, between about 180 °C and about 210 °C, between about 185 °C and about 205 °C, between about 190 °C and about 200 °C, or between about 192 °C and about 195 °C.

[01055] In some embodiments, the compound (e.g., the crystalline form of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 200 °C and about 240 °C, between about 205 °C and about 235 °C, between about 210 °C and about 230 °C, between about 214 °C and about 225 °C, or between about 216 °C and about 219 °C.

[01056] In some embodiments, the compound (e.g., the crystalline form of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 193.6 °C and/or at about 217.6 °C.

Compound 6 Hydrochloride Salt Type A

[01057] In some embodiments, the compound is a hydrochloride salt of Compound 6.

[01058] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 6.

[01059] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least one peak selected from

5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01060] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least two peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01061] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least three peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01062] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least four peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01063] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least five peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01064] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least six peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01065] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least seven peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and

27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01066] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least eight peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01067] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having at least nine peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01068] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having one peak selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01069] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having two peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01070] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having three peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01071] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having four peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ

(e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01072] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having five peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01073] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having six peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01074] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having seven peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01075] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having eight peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01076] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having nine peaks selected from 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1, 9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01077] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at 5.3±0.2, 9.9±0.2, 10.8±0.2, 11.5±0.2, 19.7±0.2, 21.5±0.2, 24.1±0.2, 25.1±0.2, 27.1±0.2, and 27.6±0.2 °2θ (e.g., 5.3±0.1,

9.9±0.1, 10.8±0.1, 11.5±0.1, 19.7±0.1, 21.5±0.1, 24.1±0.1, 25.1±0.1, 27.1±0.1, and 27.6±0.1 °2θ) using Cu Kα radiation.

[01078] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 9.7 to about 10.1, from about 10.6 to about 11.0, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[01079] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 9.7 to about 10.1, from about 10.6 to about 11.0, from about 24.9 to about 25.3, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[01080] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 9.7 to about 10.1, from about 10.6 to about 11.0, from about 24.9 to about 25.3, from about 26.9 to about 27.3, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[01081] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 9.7 to about 10.1, from about 10.6 to about 11.0, from about 11.3 to about 11.7, from about 24.9 to about 25.3, from about 26.9 to about 27.3, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[01082] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 9.7 to about 10.1, from about 10.6 to about 11.0, from about 11.3 to about 11.7, from about 23.9 to about 24.3, from about 24.9 to about 25.3, from about 26.9 to about 27.3, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[01083] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 9.7 to about 10.1, from about 10.6 to about 11.0, from about 11.3 to about 11.7, from about 23.9 to about 24.3, from about 24.9 to about 25.3, from about 26.9 to about 27.3, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[01084] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 9.7 to about 10.1, from about 10.6 to about 11.0, from about 11.3 to about 11.7,

from about 21.3 to about 21.7, from about 23.9 to about 24.3, from about 24.9 to about 25.3, from about 26.9 to about 27.3, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[01085] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.0 to about 5.4, from about 9.7 to about 10.1, from about 10.6 to about 11.0, from about 11.3 to about 11.7, from about 19.5 to about 19.9, from about 21.3 to about 21.7, from about 23.9 to about 24.3, from about 24.9 to about 25.3, from about 26.9 to about 27.3, and from about 27.4 to about 27.8 °2θ using Cu Kα radiation.

[01086] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.1 to about 5.3, from about 9.8 to about 10.0, from about 10.7 to about 10.9, from about 11.4 to about 11.6, from about 19.6 to about 19.8, from about 21.4 to about 21.6, from about 24.0 to about 24.2, from about 25.0 to about 25.2, from about 27.0 to about 27.2, and from about 27.5 to about 27.7 °2θ using Cu Kα radiation.

[01087] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) is characterized by an XRPD pattern having a peak at about 5.24, about 9.85, about 10.75, about 11.48, about 19.67, about 21.48, about 24.09, about 25.12, about 27.05, and about 27.62 °2θ using Cu Kα radiation.

[01088] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 140 °C and about 180 °C, between about 145 °C and about 175 °C, between about 150 °C and about 170 °C, between about 155 °C and about 165 °C, or between about 159 °C and about 160 °C.

[01089] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 190 °C and about 230 °C, between about 195 °C and about 225 °C, between about 200 °C and about 220 °C, between about 205 °C and about 215 °C, or between about 207 °C and about 208 °C.

[01090] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 195 °C and about 235 °C, between about 200 °C and about 230

°C, between about 205 °C and about 225 °C, between about 210 °C and about 220 °C, or between about 216 °C and about 218 °C.

[01091] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 260 °C and about 300 °C, between about 265 °C and about 295 °C, between about 270 °C and about 290 °C, between about 275 °C and about 285 °C, or between about 277 °C and about 279 °C.

[01092] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 159.5 °C, at about 207.3 °C, at about 216.9 °C, and/or at about 278.1 °C.

Compound 6 Glycolate Salt Type A

[01093] In some embodiments, the compound is a glycolate salt of Compound 6.

[01094] In some embodiments, the compound is a crystalline form of a glycolate salt of Compound 6.

[01095] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having at least one peak selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01096] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having at least two peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01097] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having at least three peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01098] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having at least four peaks selected from

5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01099] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having at least five peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01100] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having at least six peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01101] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having at least seven peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01102] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having one peak selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01103] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having two peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01104] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having three peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1,

7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01105] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having four peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01106] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having five peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01107] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having six peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01108] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having seven peaks selected from 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01109] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at 5.7±0.2, 7.0±0.2, 10.3±0.2, 15.1±0.2, 16.1±0.2, 21.6±0.2, 25.8±0.2, and 27.7±0.2 °2θ (e.g., 5.7±0.1, 7.0±0.1, 10.3±0.1, 15.1±0.1, 16.1±0.1, 21.6±0.1, 25.8±0.1, and 27.7±0.1 °2θ) using Cu Kα radiation.

[01110] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9, from about 6.8 to about 7.2, and from about 25.6 to about 26.0 °2θ using Cu Kα radiation.

[01111] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9,

from about 6.8 to about 7.2, from about 25.6 to about 26.0, from about 27.5 to about 27.9 °2θ using Cu Kα radiation.

[01112] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9, from about 6.8 to about 7.2, from about 10.1 to about 10.5, from about 25.6 to about 26.0, from about 27.5 to about 27.9 °2θ using Cu Kα radiation.

[01113] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9, from about 6.8 to about 7.2, from about 10.1 to about 10.5, from about 21.4 to about 21.8, from about 25.6 to about 26.0, and from about 27.5 to about 27.9 °2θ using Cu Kα radiation.

[01114] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9, from about 6.8 to about 7.2, from about 10.1 to about 10.5, from about 14.9 to about 15.3, from about 21.4 to about 21.8, from about 25.6 to about 26.0, and from about 27.5 to about 27.9 °2θ using Cu Kα radiation.

[01115] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.5 to about 5.9, from about 6.8 to about 7.2, from about 10.1 to about 10.5, from about 14.9 to about 15.3, from about 15.9 to about 16.3, from about 21.4 to about 21.8, from about 25.6 to about 26.0, and from about 27.5 to about 27.9 °2θ using Cu Kα radiation.

[01116] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.6 to about 5.8, from about 6.9 to about 7.1, from about 10.2 to about 10.4, from about 15.0 to about 15.2, from about 16.0 to about 16.2, from about 21.5 to about 21.7, from about 25.7 to about 25.9, and from about 27.6 to about 27.8 °2θ using Cu Kα radiation.

[01117] In some embodiments, the compound (e.g., the crystalline form of the glycolate salt of Compound 6) is characterized by an XRPD pattern having a peak at about 5.71, about 7.04, about 10.25, about 15.12, about 16.07, about 21.64, about 25.79, and about 27.68 °2θ using Cu Kα radiation.

Compound 6 Adipate Salt Type A

[01118] In some embodiments, the compound is an adipate salt of Compound 6.

[01119] In some embodiments, the compound is a crystalline form of an adipate salt of Compound 6.

[01120] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least one peak selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01121] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least two peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01122] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least three peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01123] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least four peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01124] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least five peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01125] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least six peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1,

7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01126] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least seven peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01127] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having one peak selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01128] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having two peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01129] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having three peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01130] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having four peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01131] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having five peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1,

7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01132] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having six peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01133] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having seven peaks selected from 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01134] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at 5.8±0.2, 7.8±0.2, 10.5±0.2, 11.3±0.2, 14.4±0.2, 24.6±0.2, 25.6±0.2, and 26.3±0.2 °2θ (e.g., 5.8±0.1, 7.8±0.1, 10.5±0.1, 11.3±0.1, 14.4±0.1, 24.6±0.1, 25.6±0.1, and 26.3±0.1 °2θ) using Cu Kα radiation.

[01135] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 7.6 to about 8.0, from about 25.4 to about 25.8, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01136] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 7.6 to about 8.0, from about 11.1 to about 11.5, from about 25.4 to about 25.8, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01137] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 7.6 to about 8.0, from about 10.3 to about 10.7, from about 11.1 to about 11.5, from about 25.4 to about 25.8, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01138] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 7.6 to about 8.0, from about 10.3 to about 10.7, from about 11.1 to about 11.5, from about 14.2 to about 14.6, from about 25.4 to about 25.8, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01139] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.6 to about 6.0, from about 7.6 to about 8.0, from about 10.3 to about 10.7, from about 11.1 to about 11.5, from about 14.2 to about 14.6, from about 25.4 to about 25.8, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01140] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.6 to about 6.0, from about 7.6 to about 8.0, from about 10.3 to about 10.7, from about 11.1 to about 11.5, from about 14.2 to about 14.6, from about 24.4 to about 24.8, from about 25.4 to about 25.8, and from about 26.1 to about 26.5 °2θ using Cu Kα radiation.

[01141] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.7 to about 5.9, from about 7.7 to about 7.9, from about 10.4 to about 10.6, from about 11.2 to about 11.4, from about 14.3 to about 14.5, from about 24.5 to about 24.7, from about 25.5 to about 25.7, and from about 26.2 to about 26.4 °2θ using Cu Kα radiation.

[01142] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at about 5.82, about 7.76, about 10.51, about 11.26, about 14.35, about 24.63, about 25.59, and about 26.28 °2θ using Cu Kα radiation.

[01143] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 75 °C and about 115 °C, between about 80 °C and about 110 °C, between about 85 °C and about 105 °C, between about 90 °C and about 100 °C, or between about 96 °C and about 97 °C.

[01144] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 150 °C and about 190 °C, between about 155 °C and about 185 °C, between about 160 °C and about 180 °C, between about 165 °C and about 175 °C, or between about 171 °C and about 173 °C.

[01145] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 175 °C and about 215 °C, between about 180 °C and about 210 °C,

between about 185 °C and about 205 °C, between about 190 °C and about 200 °C, or between about 194 °C and about 196 °C.

[01146] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 96.5 °C, at about 172.2 °C, and/or at about 195.2 °C.

Compound 6 Adipate Salt Type B

[01147] In some embodiments, the compound is an adipate salt of Compound 6.

[01148] In some embodiments, the compound is a crystalline form of an adipate salt of Compound 6.

[01149] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least one peak selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01150] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least two peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01151] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least three peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01152] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least four peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01153] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least five peaks selected from

5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01154] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least six peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01155] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least seven peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01156] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least eight peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01157] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having at least nine peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01158] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having one peak selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01159] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having two peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ

(e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01160] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having three peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01161] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having four peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01162] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having five peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01163] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having six peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01164] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having seven peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01165] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having eight peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ

(e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01166] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having nine peaks selected from 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01167] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at 5.3±0.2, 6.0±0.2, 8.1±0.2, 11.6±0.2, 11.9±0.2, 14.7±0.2, 21.6±0.2, 24.0±0.2, 25.5±0.2, and 26.4±0.2 °2θ (e.g., 5.3±0.1, 6.0±0.1, 8.1±0.1, 11.6±0.1, 11.9±0.1, 14.7±0.1, 21.6±0.1, 24.0±0.1, 25.5±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01168] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 8.0 to about 8.2, from about 11.5 to about 11.7, and from about 25.4 to about 25.6 °2θ using Cu Kα radiation.

[01169] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 8.0 to about 8.2, from about 11.5 to about 11.7, from about 11.8 to about 12.0, and from about 25.4 to about 25.6 °2θ using Cu Kα radiation.

[01170] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.9 to about 6.1, from about 8.0 to about 8.2, from about 11.5 to about 11.7, from about 11.8 to about 12.0, and from about 25.4 to about 25.6 °2θ using Cu Kα radiation.

[01171] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.2 to about 5.3, from about 5.9 to about 6.1, from about 8.0 to about 8.2, from about 11.5 to about 11.7, from about 11.8 to about 12.0, and from about 25.4 to about 25.6 °2θ using Cu Kα radiation.

[01172] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.2 to about 5.3, from about 5.9 to about 6.1, from about 8.0 to about 8.2, from about 11.5 to about 11.7, from

about 11.8 to about 12.0, from about 23.9 to about 24.1, and from about 25.4 to about 25.6 °2θ using Cu Kα radiation.

[01173] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.2 to about 5.3, from about 5.9 to about 6.1, from about 8.0 to about 8.2, from about 11.5 to about 11.7, from about 11.8 to about 12.0, from about 23.9 to about 24.1, from about 25.4 to about 25.6, and from about 26.3 to about 26.5 °2θ using Cu Kα radiation.

[01174] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.2 to about 5.3, from about 5.9 to about 6.1, from about 8.0 to about 8.2, from about 11.5 to about 11.7, from about 11.8 to about 12.0, from about 14.6 to about 14.8, from about 23.9 to about 24.1, from about 25.4 to about 25.6, and from about 26.3 to about 26.5 °2θ using Cu Kα radiation.

[01175] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at from about 5.2 to about 5.3, from about 5.9 to about 6.1, from about 8.0 to about 8.2, from about 11.5 to about 11.7, from about 11.8 to about 12.0, from about 14.6 to about 14.8, from about 21.5 to about 21.7, from about 23.9 to about 24.1, from about 25.4 to about 25.6, and from about 26.3 to about 26.5 °2θ using Cu Kα radiation.

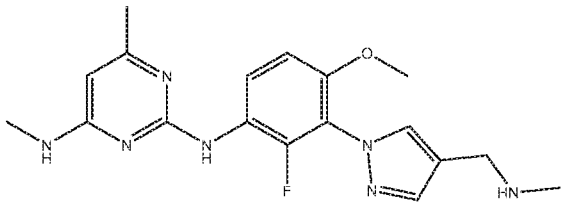
[01176] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) is characterized by an XRPD pattern having a peak at about 5.28, about 5.96, about 8.11, about 11.59, about 11.91, about 14.73, about 21.58, about 24.00, about 25.53, and about 26.36 °2θ using Cu Kα radiation.

[01177] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 140 °C and about 180 °C, between about 145 °C and about 175 °C, between about 150 °C and about 170 °C, between about 155 °C and about 165 °C, or between about 159 °C and about 160 °C.

[01178] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 170 °C and about 210 °C, between about 175 °C and about 205 °C, between about 180 °C and about 200 °C, between about 185 °C and about 195 °C, or between about 191 °C and about 193 °C.

[01179] In some embodiments, the compound (e.g., the crystalline form of the adipate salt of Compound 6) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 159.5 °C and/or at about 191.9 °C.

Compound 7

[01180] In some embodiments, the compound is  (Compound 7), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

[01181] In some embodiments, the compound is Compound 7.

[01182] In some embodiments, the compound is a crystalline form of Compound 7.

[01183] In some embodiments, the crystalline form of Compound 7 is an anhydrate.

[01184] In some embodiments, the compound is a pharmaceutically acceptable salt of Compound 7.

[01185] In some embodiments, the compound is a crystalline form of a pharmaceutically acceptable salt of Compound 7.

[01186] In some embodiments, the crystalline form of the pharmaceutically acceptable salt of Compound 7 is an anhydrate.

[01187] In some embodiments, the compound is a hydrochloride salt, sulfate salt, glycolate salt, adipate salt, succinate salt, oxalate salt, phosphate salt, fumarate salt, hippurate salt, gentisate salt, or benzoate salt of Compound 7.

Compound 7 Hydrochloride Salt Type A

[01188] In some embodiments, the compound is a hydrochloride salt of Compound 7.

[01189] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 7.

[01190] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least one peak selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and

26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01191] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least two peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01192] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least three peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01193] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least four peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01194] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least five peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01195] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least six peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01196] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least seven peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and

26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01197] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least eight peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01198] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least nine peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01199] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having one peak selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01200] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having two peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01201] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having three peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01202] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having four peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ

(e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01203] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having five peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01204] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having six peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01205] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having seven peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01206] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having eight peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01207] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having nine peaks selected from 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1, 9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01208] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at 6.8±0.2, 9.4±0.2, 12.1±0.2, 14.5±0.2, 15.0±0.2, 18.7±0.2, 24.2±0.2, 25.1±0.2, 25.6±0.2, and 26.8±0.2 °2θ (e.g., 6.8±0.1,

9.4±0.1, 12.1±0.1, 14.5±0.1, 15.0±0.1, 18.7±0.1, 24.2±0.1, 25.1±0.1, 25.6±0.1, and 26.8±0.1 °2θ) using Cu Kα radiation.

[01209] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 24.9 to about 25.3, and from about 26.6 to about 27.0 °2θ using Cu Kα radiation.

[01210] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 14.3 to about 14.7, from about 24.9 to about 25.3, and from about 26.6 to about 27.0 °2θ using Cu Kα radiation.

[01211] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 14.3 to about 14.7, from about 14.8 to about 15.2, from about 24.9 to about 25.3, and from about 26.6 to about 27.0 °2θ using Cu Kα radiation.

[01212] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 14.3 to about 14.7, from about 14.8 to about 15.2, from about 24.9 to about 25.3, from about 25.4 to about 25.8, and from about 26.6 to about 27.0 °2θ using Cu Kα radiation.

[01213] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 14.3 to about 14.7, from about 14.8 to about 15.2, from about 24.0 to about 24.4, from about 24.9 to about 25.3, from about 25.4 to about 25.8, and from about 26.6 to about 27.0 °2θ using Cu Kα radiation.

[01214] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 11.9 to about 12.3, from about 14.3 to about 14.7, from about 14.8 to about 15.2, from about 24.0 to about 24.4, from about 24.9 to about 25.3, from about 25.4 to about 25.8, and from about 26.6 to about 27.0 °2θ using Cu Kα radiation.

[01215] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 11.9 to about 12.3, from about 14.3 to about 14.7, from about 14.8 to about 15.2,

from about 18.5 to about 18.9, from about 24.0 to about 24.4, from about 24.9 to about 25.3, from about 25.4 to about 25.8, and from about 26.6 to about 27.0 °2θ using Cu Kα radiation.

[01216] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.6 to about 7.0, from about 9.2 to about 9.6, from about 11.9 to about 12.3, from about 14.3 to about 14.7, from about 14.8 to about 15.2, from about 18.5 to about 18.9, from about 24.0 to about 24.4, from about 24.9 to about 25.3, from about 25.4 to about 25.8, and from about 26.6 to about 27.0 °2θ using Cu Kα radiation.

[01217] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 6.7 to about 6.9, from about 9.3 to about 9.5, from about 12.0 to about 12.2, from about 14.4 to about 14.6, from about 14.9 to about 15.1, from about 18.6 to about 18.8, from about 24.1 to about 24.3, from about 25.0 to about 25.2, from about 25.5 to about 25.7, and from about 26.7 to about 26.9 °2θ using Cu Kα radiation.

[01218] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at about 6.8, about 9.4, about 12.1, about 14.5, about 15.0, about 18.7, about 24.2, about 25.1, about 25.6, and about 26.8 °2θ using Cu Kα radiation.

[01219] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 55 °C and about 95 °C, between about 60 °C and about 90 °C, between about 65 °C and about 85 °C, between about 70 °C and about 80 °C, or between about 76 °C and about 78 °C.

[01220] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 110 °C and about 150 °C, between about 115 °C and about 145 °C, between about 120 °C and about 140 °C, between about 125 °C and about 135 °C, or between about 127 °C and about 129 °C.

[01221] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 150 °C and about 190 °C, between about 155 °C and about 185

°C, between about 160 °C and about 180 °C, between about 165 °C and about 175 °C, or between about 169 °C and about 171 °C.

[01222] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 190 °C and about 230 °C, between about 195 °C and about 225 °C, between about 200 °C and about 220 °C, between about 205 °C and about 215 °C, or between about 209 °C and about 211 °C.

[01223] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 210 °C and about 250 °C, between about 215 °C and about 245 °C, between about 220 °C and about 240 °C, between about 225 °C and about 235 °C, or between about 231 °C and about 233 °C.

[01224] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 77.3 °C, at about 128.2 °C, at about 170.2 °C, at about 210.6 °C, and/or at about 231.7 °C.

Compound 7 Hydrochloride Salt Type B

[01225] In some embodiments, the compound is a hydrochloride salt of Compound 7.

[01226] In some embodiments, the compound is a crystalline form of a hydrochloride salt of Compound 7.

[01227] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least one peak selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01228] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least two peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01229] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least three peaks selected from

5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01230] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least four peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01231] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least five peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01232] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having at least six peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01233] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having one peak selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01234] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having two peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01235] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having three peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01236] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having four peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01237] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having five peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01238] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having six peaks selected from 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01239] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at 5.9±0.2, 8.3±0.2, 10.0±0.2, 11.7±0.2, 21.9±0.2, 25.1±0.2, and 26.9±0.2 °2θ (e.g., from 5.9±0.1, 8.3±0.1, 10.0±0.1, 11.7±0.1, 21.9±0.1, 25.1±0.1, and 26.9±0.1 °2θ) using Cu Kα radiation.

[01240] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 8.1 to about 8.5, from about 9.8 to about 10.2, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[01241] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 8.1 to about 8.5, from about 9.8 to about 10.2, and from about 24.9 to about 25.3 °2θ using Cu Kα radiation.

[01242] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 8.1 to about 8.5, from about 9.8 to about 10.2, from about 24.9 to about 25.3, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[01243] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 8.1 to about 8.5, from about 9.8 to about 10.2, from about 21.7 to about 22.1, from about 24.9 to about 25.3, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[01244] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 5.7 to about 6.1, from about 8.1 to about 8.5, from about 9.8 to about 10.2, from about 11.5 to about 11.9, from

about 21.7 to about 22.1, from about 24.9 to about 25.3, and from about 26.7 to about 27.1 °2θ using Cu Kα radiation.

[01245] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 5.8 to about 6.0, from about 8.2 to about 8.4, from about 9.9 to about 10.1, from about 11.6 to about 11.8, from about 21.8 to about 22.0, from about 25.0 to about 25.2, and from about 26.8 to about 27.0 °2θ using Cu Kα radiation.

[01246] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) is characterized by an XRPD pattern having a peak at about 5.9, about 8.3, about 10.0, about 11.7, about 21.9, about 25.1, and about 26.9 °2θ using Cu Kα radiation.

[01247] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 70°C and about 110 °C, between about 75 °C and about 105 °C, between about 80 °C and about 100 °C, between about 85 °C and about 95 °C, or between about 87 °C and about 89 °C.

[01248] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 100 °C and about 140 °C, between about 105 °C and about 135 °C, between about 110 °C and about 130 °C, between about 115 °C and about 125 °C, or between about 118 °C and about 120 °C.

[01249] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 190 °C and about 230 °C, between about 195 °C and about 225 °C, between about 200 °C and about 220 °C, between about 205 °C and about 215 °C, or between about 208 °C and about 210 °C.

[01250] In some embodiments, the compound (e.g., the crystalline form of the hydrochloride salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 87.8 °C, at about 118.6 °C, and/or at about 208.7 °C.

Compound 7 Oxalate Salt Type A

[01251] In some embodiments, the compound is an oxalate salt of Compound 7.

[01252] In some embodiments, the compound is a crystalline form of an oxalate salt of Compound 7.

[01253] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having at least one peak selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01254] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having at least two peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01255] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having at least three peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01256] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having at least four peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01257] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having at least five peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01258] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having at least six peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01259] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having one peak selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01260] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having two peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01261] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having three peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01262] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having four peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01263] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having five peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01264] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having six peaks selected from 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01265] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having a peak at 4.5±0.2, 8.7±0.2, 9.1±0.2, 9.7±0.2, 13.8±0.2, 24.9±0.2, and 25.4±0.2 °2θ (e.g., 4.5±0.1, 8.7±0.1, 9.1±0.1, 9.7±0.1, 13.8±0.1, 24.9±0.1, and 25.4±0.1 °2θ) using Cu Kα radiation.

[01266] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 8.5 to about 8.9, and from about 8.9 to about 9.3 °2θ using Cu Kα radiation.

[01267] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 8.5 to about 8.9, from about 8.9 to about 9.3, and from about 13.6 to about 13.8 °2θ using Cu Kα radiation.

[01268] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 8.5 to about 8.9, from about 8.9 to about 9.3, from about 13.6 to about 13.8, and from about 25.2 to about 25.6 °2θ using Cu Kα radiation.

[01269] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 8.5 to about 8.9, from about 8.9 to about 9.3, from about 9.4 to about 9.9, from about 13.6 to about 13.8, and from about 25.2 to about 25.6 °2θ using Cu Kα radiation.

[01270] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 4.3 to about 4.7, from about 8.5 to about 8.9, from about 8.9 to about 9.3, from about 9.4 to about 9.9, from about 13.6 to about 13.8, from about 24.7 to about 25.1, and from about 25.2 to about 25.6 °2θ using Cu Kα radiation.

[01271] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 4.4 to about 4.6, from about 8.6 to about 8.8, from about 9.0 to about 9.2, from about 9.6 to about 9.8, from about 13.7 to about 13.9, from about 24.8 to about 25.0, and from about 25.3 to about 25.5 °2θ using Cu Kα radiation.

[01272] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) is characterized by an XRPD pattern having a peak at about 4.5, about 8.7, about 9.1, about 9.7, about 13.8, about 24.9, and about 25.4 °2θ using Cu Kα radiation.

[01273] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 125 °C and about 165 °C, between about 130 °C and about 160 °C, between about 135 °C and about 155 °C, between about 140 °C and about 150 °C, or between about 143 °C and about 145 °C.

[01274] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 190 °C and about 230 °C, between about 195 °C and about 225 °C, between about 200 °C and about 220 °C, between about 205 °C and about 215 °C, or between about 210 °C and about 212 °C.

[01275] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 190 °C and about 230 °C, between about 195 °C and about 225 °C, between about 200 °C and about 220 °C, between about 205 °C and about 215 °C, or between about 208 °C and about 210 °C.

[01276] In some embodiments, the compound (e.g., the crystalline form of the oxalate salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at about 144.2 °C, at about 211.2 °C, and/or at about 208.7 °C.

Compound 7 Sulfate Salt Type A

[01277] In some embodiments, the compound is a sulfate salt of Compound 7.

[01278] In some embodiments, the compound is a crystalline form of a sulfate salt of Compound 7.

[01279] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least one peak selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01280] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least two peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01281] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least three peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01282] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least four peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2,

25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01283] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least five peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01284] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least six peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01285] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least seven peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01286] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least eight peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01287] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least nine peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01288] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having at least ten peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2,

25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01289] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having one peak selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01290] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having two peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01291] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having three peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01292] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having four peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01293] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having five peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01294] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having six peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and

26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01295] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having seven peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01296] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having eight peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01297] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having nine peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01298] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having ten peaks selected from 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01299] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at 13.1±0.2, 15.8±0.2, 17.9±0.2, 18.0±0.2, 18.9±0.2, 19.2±0.2, 19.7±0.2, 23.8±0.2, 25.1±0.2, 25.7±0.2, and 26.4±0.2 °2θ (e.g, 13.1±0.1, 15.8±0.1, 17.9±0.1, 18.0±0.1, 18.9±0.1, 19.2±0.1, 19.7±0.1, 23.8±0.1, 25.1±0.1, 25.7±0.1, and 26.4±0.1 °2θ) using Cu Kα radiation.

[01300] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 15.6 to about 16.0, from about 24.9 to about 25.3, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01301] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 15.6 to about 16.0, form about 17.7 to about 18.1, from about 24.9 to about 25.3, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01302] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 15.6 to about 16.0, form about 17.7 to about 18.1, from about 19.0 to about 19.4, from about 24.9 to about 25.3, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01303] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 15.6 to about 16.0, form about 17.7 to about 18.1, from about 19.0 to about 19.4, from about 19.5 to about 19.9, from about 24.9 to about 25.3, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01304] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 15.6 to about 16.0, form about 17.7 to about 18.1, from about 17.8 to about 18.2, from about 19.0 to about 19.4, from about 19.5 to about 19.9, from about 24.9 to about 25.3, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01305] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 15.6 to about 16.0, form about 17.7 to about 18.1, from about 17.8 to about 18.2, from about 18.7 to about 19.1, from about 19.0 to about 19.4, from about 19.5 to about 19.9, from about 24.9 to about 25.3, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01306] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 15.6 to about 16.0, form about 17.7 to about 18.1, from about 17.8 to about 18.2, from about 18.7 to about 19.1, from about 19.0 to about 19.4, from about 19.5 to about 19.9, from about 23.6 to about 24.0, from about 24.9 to about 25.3, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01307] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 15.6 to about 16.0, form about 17.7 to about 18.1, from about 17.8 to about 18.2, from about 18.7 to about 19.1, from about 19.0 to about 19.4, from about 19.5 to about 19.9, from about 23.6 to about 24.0, from

about 24.9 to about 25.3, from about 25.5 to about 25.9, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01308] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 12.9 to about 13.3, from about 15.6 to about 16.0, form about 17.7 to about 18.1, from about 17.8 to about 18.2, from about 18.7 to about 19.1, from about 19.0 to about 19.4, from about 19.5 to about 19.9, from about 23.6 to about 24.0, from about 24.9 to about 25.3, from about 25.5 to about 25.9, and from about 26.2 to about 26.6 °2θ using Cu Kα radiation.

[01309] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at from about 13.0 to about 13.2, from about 15.7 to about 15.9, form about 17.8 to about 18.0, from about 17.9 to about 18.1, from about 18.8 to about 19.0, from about 19.1 to about 19.3, from about 19.6 to about 19.8, from about 23.7 to about 23.9, from about 25.0 to about 25.2, from about 25.6 to about 25.8, and from about 26.3 to about 26.5 °2θ using Cu Kα radiation.

[01310] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) is characterized by an XRPD pattern having a peak at about 13.1, about 15.8, about 17.9, about 18.0, about 18.9, about 19.2, about 19.7, about 23.8, about 25.1, about 25.7, and about 26.4 °2θ using Cu Kα radiation.

[01311] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 95 °C and about 135 °C, between about 100 °C and about 130 °C, between about 105 °C and about 125 °C, between about 110 °C and about 120 °C, or between about 113 °C and about 115 °C.

[01312] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 130 °C and about 170 °C, between about 135 °C and about 165 °C, between about 140 °C and about 160 °C, between about 145 °C and about 155 °C, or between about 151 °C and about 153 °C.

[01313] In some embodiments, the compound (e.g., the crystalline form of the sulfate salt of Compound 7) has an endothermic peak top temperature in differential scanning calorimeter (DSC) analysis at between about 165 °C and about 205 °C, between about 170 °C and about 200 °C,

DEMANDE OU BREVET VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVET COMPREND PLUS D'UN TOME.

CECI EST LE TOME 1 DE 2
CONTENANT LES PAGES 1 À 181

NOTE : Pour les tomes additionels, veuillez contacter le Bureau canadien des brevets

JUMBO APPLICATIONS/PATENTS

THIS SECTION OF THE APPLICATION/PATENT CONTAINS MORE THAN ONE VOLUME

THIS IS VOLUME 1 OF 2
CONTAINING PAGES 1 TO 181

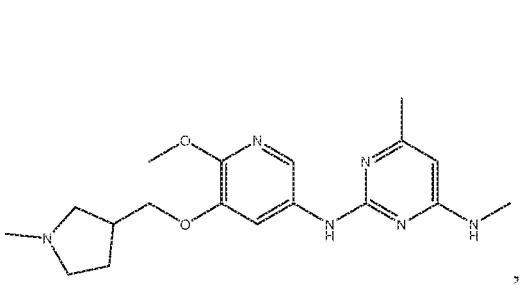
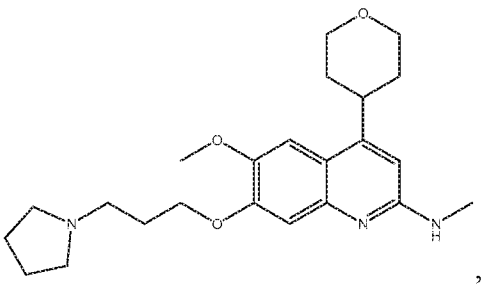
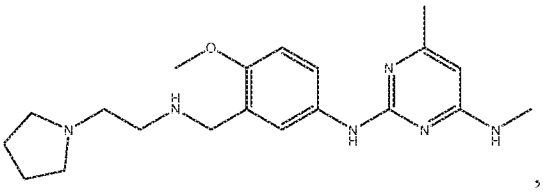
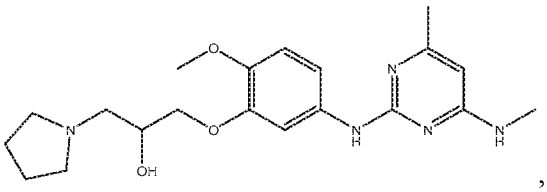
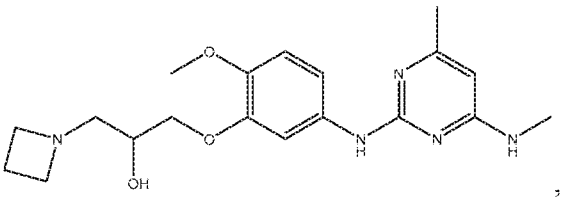
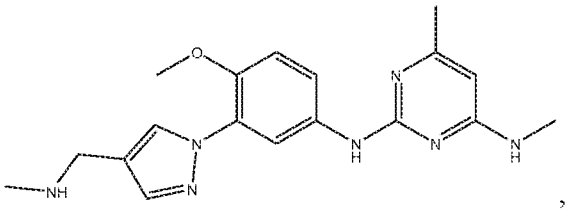
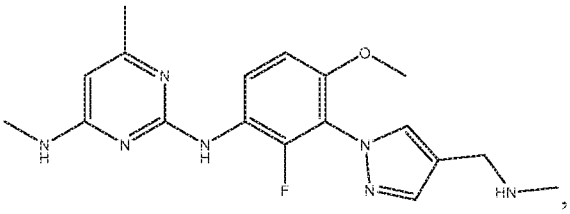
NOTE: For additional volumes, please contact the Canadian Patent Office

NOM DU FICHIER / FILE NAME :

NOTE POUR LE TOME / VOLUME NOTE:

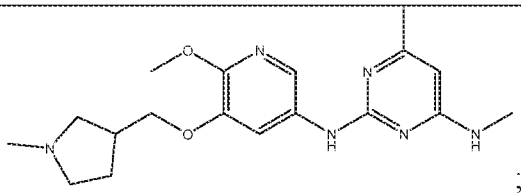
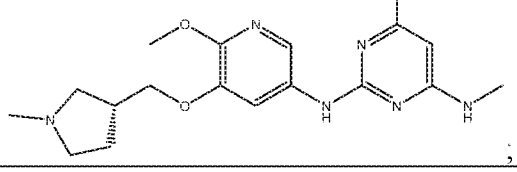
What is claimed is:

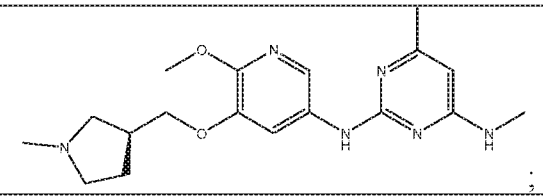
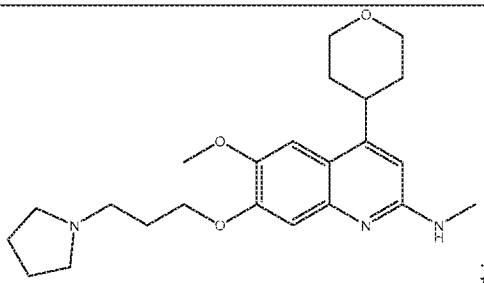
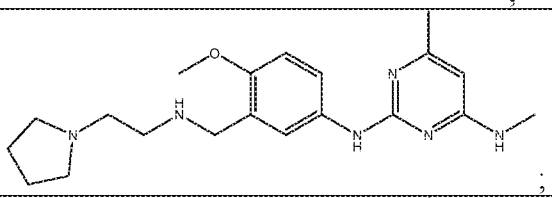
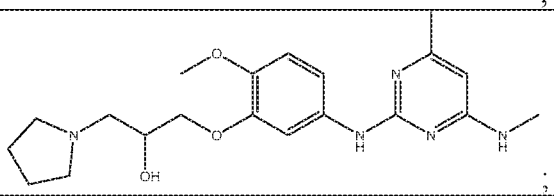
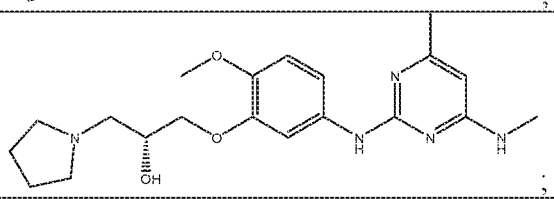
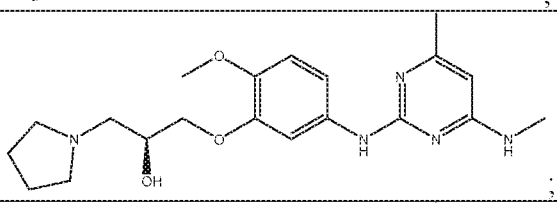
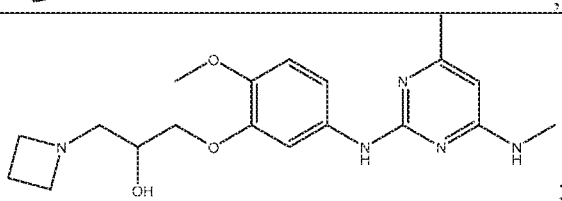
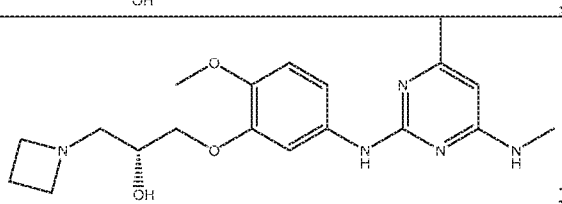
1. A compound being selected from

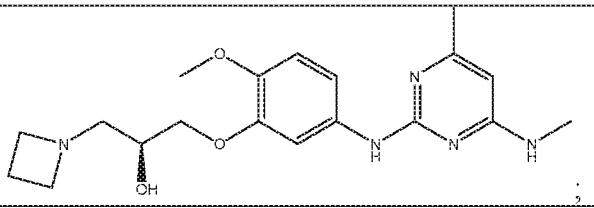
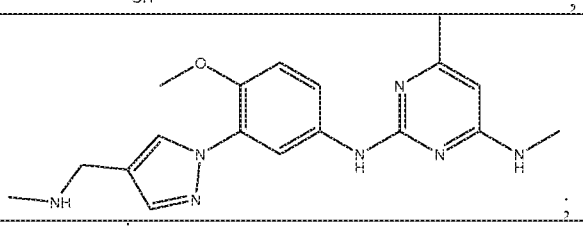
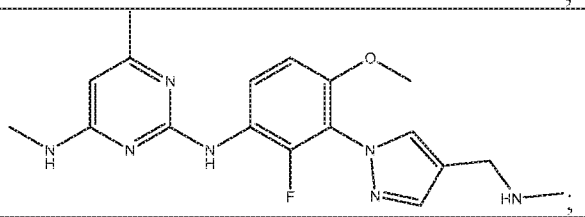

,

,

,

,

,

,

,

tautomers thereof, pharmaceutically acceptable salts thereof, and pharmaceutically acceptable salts of the tautomers.

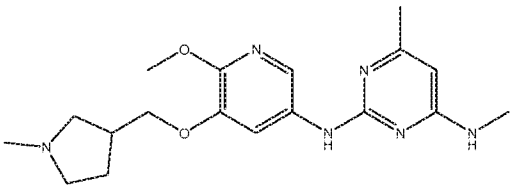
2. The compound of claim 1, being selected from:

Compound No.	Structure
1	 ;
1R	 ;

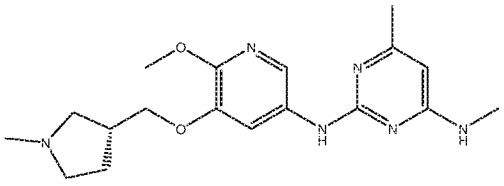
Compound No.	Structure
1S	
2	
3	
4	
4R	
4S	
5	
5R	

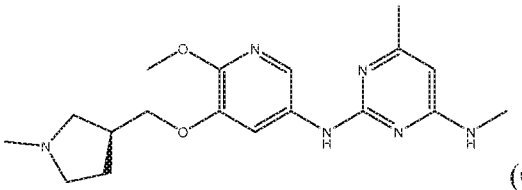
Compound No.	Structure
5S	
6	
7	

tautomers thereof, pharmaceutically acceptable salts thereof, and pharmaceutically acceptable salts of the tautomers.

3. The compound of claim 1 or claim 2, being  (Compound 1), a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

4. The compound of any one of the preceding claims, being

 (Compound 1R),

 (Compound 1S),

a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

5. The compound of any one of the preceding claims, being Compound 1R, a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

6. The compound of any one of the preceding claims, being Compound 1R.

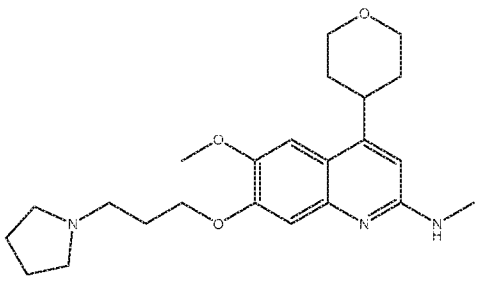
7. The compound of any one of the preceding claims, being a crystalline form of Compound 1R.

8. The compound of any one of the preceding claims, being a pharmaceutical salt of Compound 1R.

9. The compound of any one of the preceding claims, being a hydrochloride salt of Compound 1R.

10. The compound of any one of the preceding claims, being a crystalline form of a hydrochloride salt of Compound 1R.

11. The compound of claim 1 or claim 2, being



(Compound 2),

a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

12. The compound of any one of the preceding claims, being Compound 2.

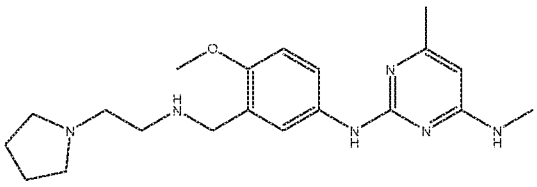
13. The compound of any one of the preceding claims, being a crystalline form of Compound 2.

14. The compound of any one of the preceding claims, being a pharmaceutical salt of Compound 2.

15. The compound of any one of the preceding claims, being a hydrochloride salt of Compound 2.

16. The compound of any one of the preceding claims, being a crystalline form of a hydrochloride salt of Compound 2.

17. The compound of claim 1 or claim 3, being



(Compound 3),

a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

18. The compound of any one of the preceding claims, being Compound 3.

19. The compound of any one of the preceding claims, being a crystalline form of Compound 3.

20. The compound of any one of the preceding claims, being a pharmaceutical salt of Compound 3.

21. The compound of any one of the preceding claims, being a hydrochloride salt of Compound 3.

22. The compound of any one of the preceding claims, being a crystalline form of a hydrochloride salt of Compound 3.

23. The compound of any one of the preceding claims, being a sulfate salt of Compound 3.

24. The compound of any one of the preceding claims, being a crystalline form of a sulfate salt of Compound 3.

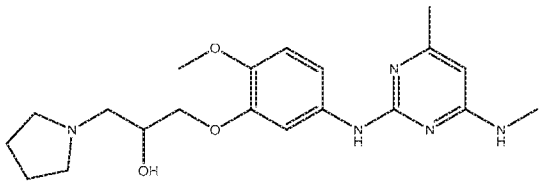
25. The compound of any one of the preceding claims, being a glycolate salt of Compound 3.

26. The compound of any one of the preceding claims, being a crystalline form of a glycolate salt of Compound 3.

27. The compound of any one of the preceding claims, being a succinate salt of Compound 3.

28. The compound of any one of the preceding claims, being a crystalline form of a succinate salt of Compound 3.

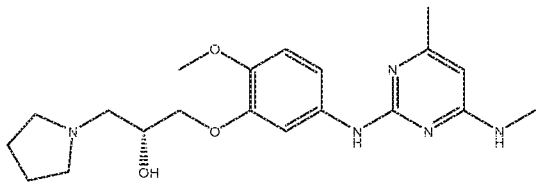
29. The compound of claim 1 or claim 2, being



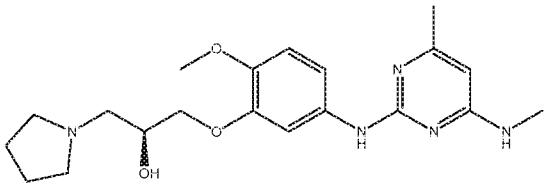
(Compound 4),

a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

30. The compound of any one of the preceding claims, being



(Compound 4R),



(Compound 4S),

a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

31. The compound of any one of the preceding claims, being Compound 4R.

32. The compound of any one of the preceding claims, being a crystalline form of Compound 4R.

33. The compound of any one of the preceding claims, being a pharmaceutical salt of Compound 4R.

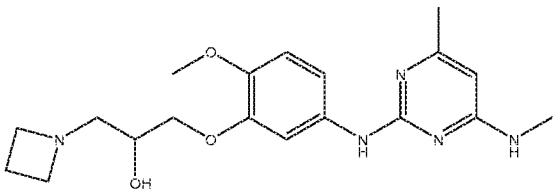
34. The compound of any one of the preceding claims, being a hydrochloride salt of Compound 4R.

35. The compound of any one of the preceding claims, being a crystalline form of a hydrochloride salt of Compound 4R.

36. The compound of any one of the preceding claims, being a succinate salt of Compound 4R.

37. The compound of any one of the preceding claims, being a crystalline form of a succinate salt of Compound 4R.

38. The compound of claim 1 or claim 2, being

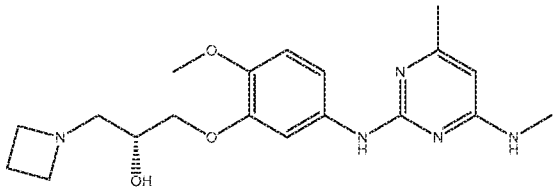


(Compound 5),

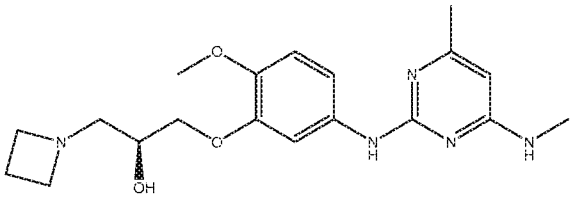
a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable

salt of the tautomer.

39. The compound of any one of the preceding claims, being



(Compound 5R),



(Compound 5S),

a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

40. The compound of any one of the preceding claims, being Compound 5R.

41. The compound of any one of the preceding claims, being a crystalline form of Compound 5R.

42. The compound of any one of the preceding claims, being a pharmaceutical salt of Compound 5R.

43. The compound of any one of the preceding claims, being a sulfate salt of Compound 5R.

44. The compound of any one of the preceding claims, being a crystalline form of a sulfate salt of Compound 5R.

45. The compound of any one of the preceding claims, being a glycolate salt of Compound 5R.

46. The compound of any one of the preceding claims, being a crystalline form of a glycolate salt of Compound 5R.

47. The compound of any one of the preceding claims, being a fumarate salt of Compound 5R.

48. The compound of any one of the preceding claims, being a crystalline form of a fumarate salt of Compound 5R.

49. The compound of any one of the preceding claims, being a hippurate salt of Compound 5R.

50. The compound of any one of the preceding claims, being a crystalline form of a hippurate salt of Compound 5R.

51. The compound of any one of the preceding claims, being an adipate salt of Compound 5R.

52. The compound of any one of the preceding claims, being a crystalline form of an adipate salt of Compound 5R.

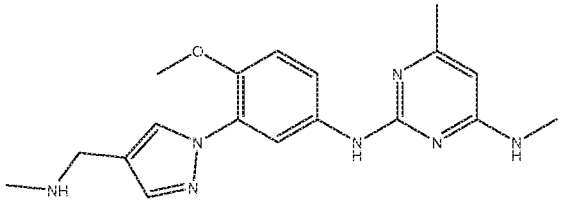
53. The compound of any one of the preceding claims, being a gentisate salt of Compound 5R.

54. The compound of any one of the preceding claims, being a crystalline form of a gentisate salt of Compound 5R.

55. The compound of any one of the preceding claims, being a benzoate salt of Compound 5R.

56. The compound of any one of the preceding claims, being a crystalline form of a benzoate salt of Compound 5R.

57. The compound of claim 1 or claim 2, being



(Compound 6),

a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable

salt of the tautomer.

58. The compound of any one of the preceding claims, being a pharmaceutical salt of Compound 6.

59. The compound of any one of the preceding claims, being a hydrochloride salt of Compound 6.

60. The compound of any one of the preceding claims, being a crystalline form of a hydrochloride salt of Compound 6.

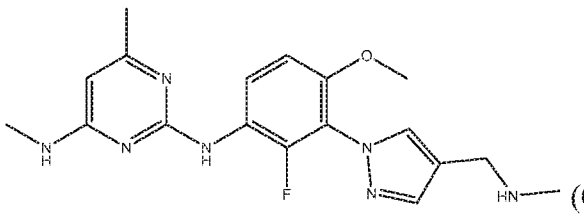
61. The compound of any one of the preceding claims, being a glycolate salt of Compound 6.

62. The compound of any one of the preceding claims, being a crystalline form of a glycolate salt of Compound 6.

63. The compound of any one of the preceding claims, being an adipate salt of Compound 6.

64. The compound of any one of the preceding claims, being a crystalline form of an adipate salt of Compound 6.

65. The compound of claim 1 or claim 2, being



(Compound 7),

a tautomer thereof, a pharmaceutically acceptable salt thereof, or a pharmaceutically acceptable salt of the tautomer.

66. The compound of any one of the preceding claims, being a pharmaceutical salt of Compound 7.

67. The compound of any one of the preceding claims, being a hydrochloride salt of Compound 7.

68. The compound of any one of the preceding claims, being a crystalline form of a hydrochloride salt of Compound 7.

69. The compound of any one of the preceding claims, being an oxalate salt of Compound 7.

70. The compound of any one of the preceding claims, being a crystalline form of an oxalate salt of Compound 7.

71. The compound of any one of the preceding claims, being a sulfate salt of Compound 7.

72. The compound of any one of the preceding claims, being a crystalline form of a sulfate salt of Compound 7.

73. The compound of any one of the preceding claims, being a phosphate salt of Compound 7.

74. The compound of any one of the preceding claims, being a crystalline form of a phosphate salt of Compound 7.

75. The compound of any one of the preceding claims, being a fumarate salt of Compound 7.

76. The compound of any one of the preceding claims, being a crystalline form of a fumarate salt of Compound 7.

77. A pharmaceutical composition comprising the compound of any one of the preceding claims and a pharmaceutically acceptable carrier.

78. A method of inhibiting one or both of EHMT1 and EHMT2, the method comprising administering to a subject in need thereof a therapeutically effective amount of the compound of any one of the preceding claims.

79. The method of claim 49, wherein the subject has an EHMT-mediated disorder.

80. The method of claim 49, wherein the subject has a blood disorder.

81. The method of claim 49, wherein the subject has a cancer.

82. A method of preventing or treating a blood disorder, the method comprising administering to a subject in need thereof a therapeutically effective amount of the compound of any one of the preceding claims.

83. The method of claim 54, wherein the blood disorder is sickle cell anemia or β-thalassemia.

84. The method of claim 54, wherein the blood disorder is a hematological cancer.

85. A methof of preventing or treating a cancer, the method comprising administering to a subject in need thereof a therapeutically effective amount of the compound of any one of the preceding claims.

86. The method of claim 56, wherein the cancer is lymphoma, leukemia, melanoma, breast cancer, ovarian cancer, hepatocellular carcinoma, prostate carcinoma, lung cancer, brain cancer, or hematological cancer.

87. The method of claim 56, wherein the cancer is melanoma.

88. The method of claim 57, wherein the hematological cancer is acute myeloid leukemia (AML) or chronic lymphocytic leukemia (CLL).

89. The method of claim 57, wherein the lymphoma is diffuse large B-cell lymphoma, follicular lymphoma, Burkitt's lymphoma or Non-Hodgkin's Lymphoma.

90. The method of claim 56, wherein the cancer is chronic myelogenous leukemia (CML),

acute myeloid leukemia (AML), acute lymphocytic leukemia (ALL), mixed lineage leukemia (MLL), or myelodysplastic syndromes (MDS).

91. The compound of any one of the preceding claims for use in inhibiting one or both of EHMT1 and EHMT2 in a subject in need thereof.

92. The compound of any one of the preceding claims for use in preventing or treating an EHMT-mediated disorder in a subject in need thereof.

93. The compound of any one of the preceding claims for use in preventing or treating a blood disorder in a subject in need thereof.

94. The compound of any one of the preceding claims for use in preventing or treating a cancer in a subject in need thereof.

95. Use of the compound of any one of the preceding claims in the manufacture of a medicament for inhibiting one or both of EHMT1 and EHMT2 in a subject in need thereof.

96. Use of the compound of any one of the preceding claims in the manufacture of a medicament for preventing or treating an EHMT-mediated disorder in a subject in need thereof.

97. Use of the compound of any one of the preceding claims in the manufacture of a medicament for preventing or treating a blood disorder in a subject in need thereof.

98. Use of the compound of any one of the preceding claims in the manufacture of a medicament for preventing or treating a cancer in a subject in need thereof.

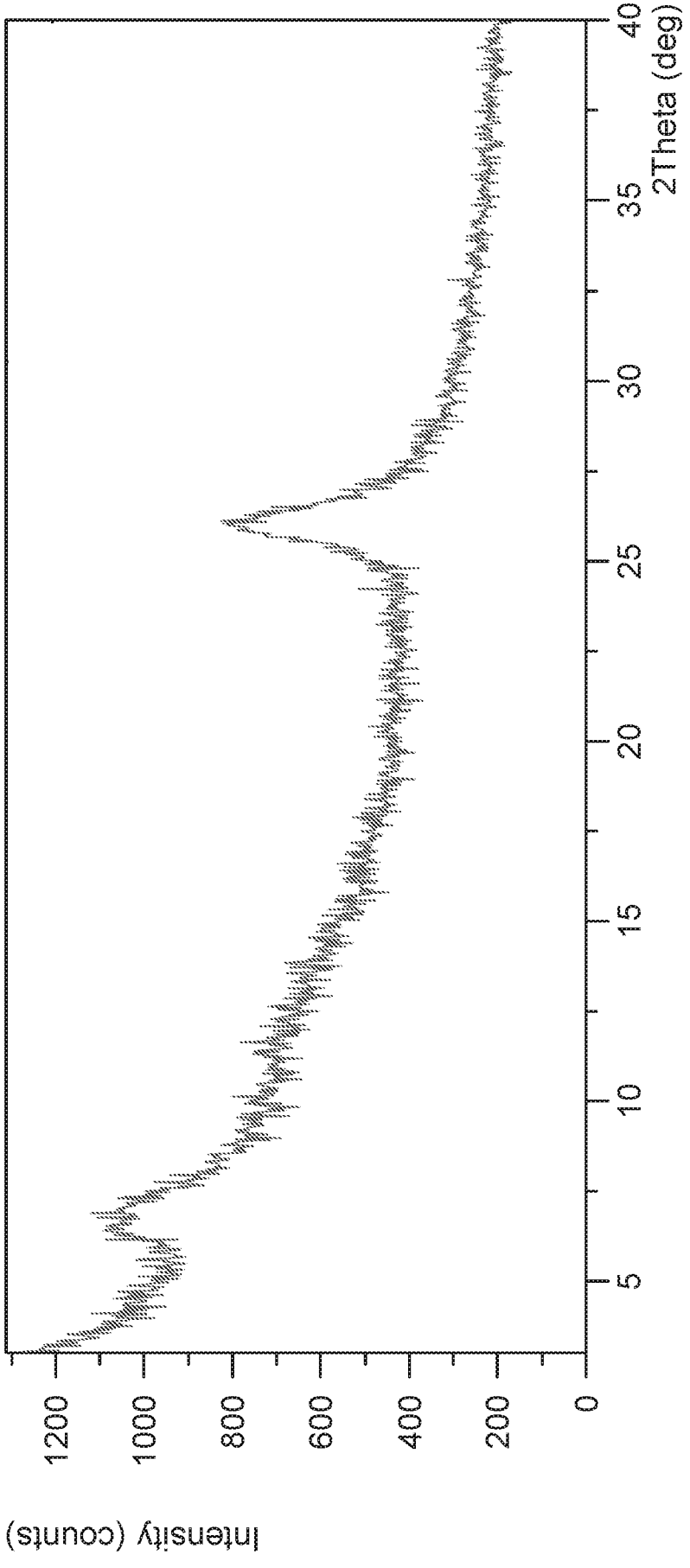

Intensity (counts)
0
200
400
600
800
1000
1200
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 1A

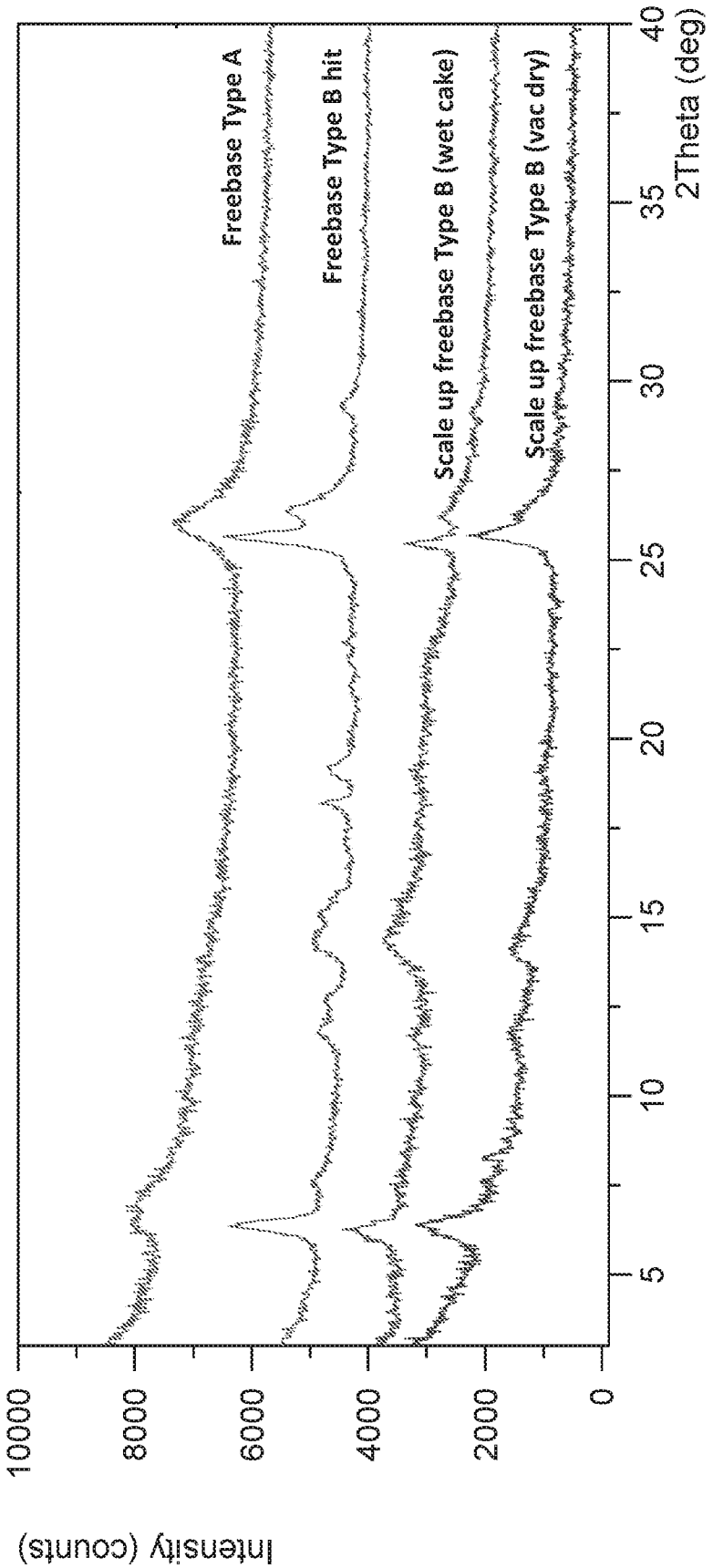

Freebase Type A
Freebase Type B hit
Scale up freebase Type B (wet cake)
Scale up freebase Type B (vac dry)
Intensity (counts)
10000
8000
6000
4000
2000
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 1B

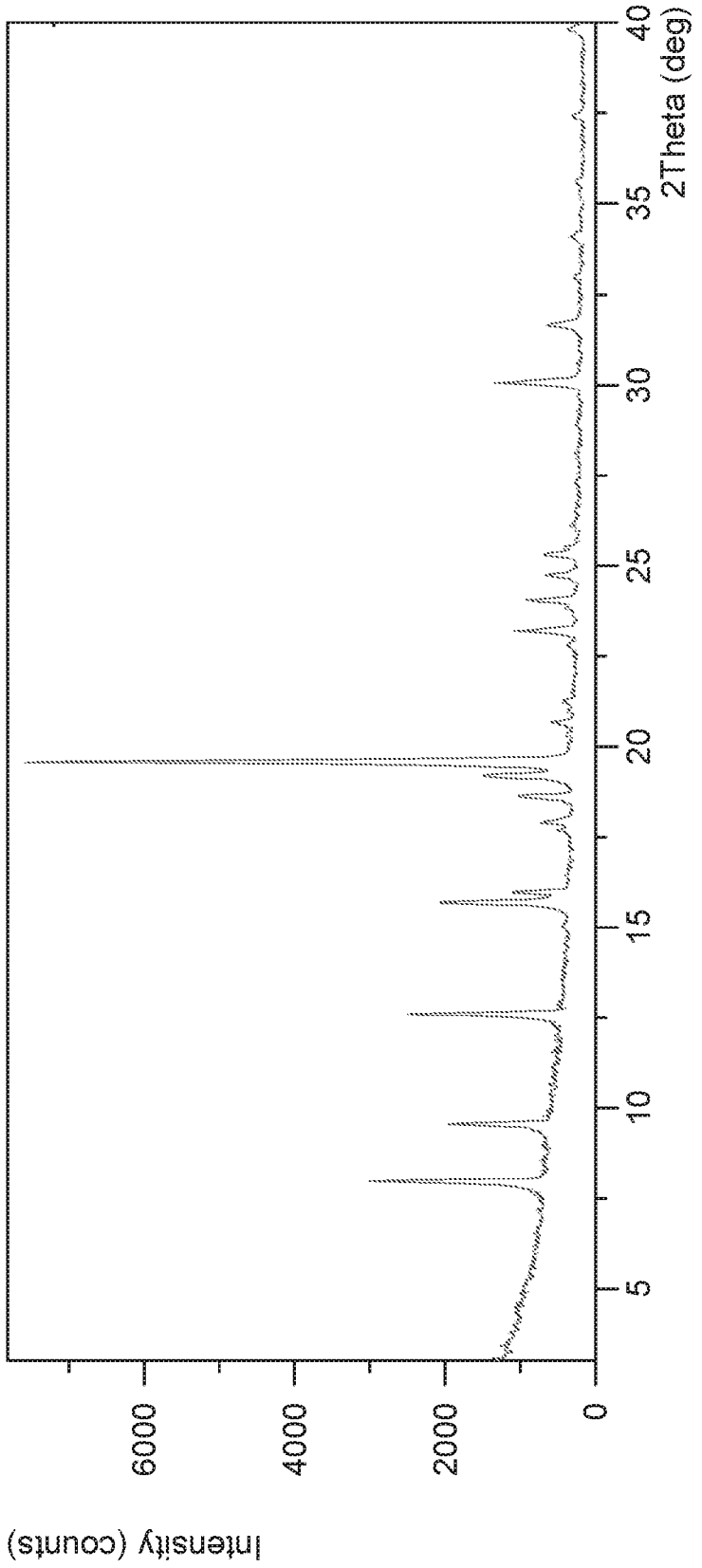

Intensity (counts)
6000
4000
2000
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 2A

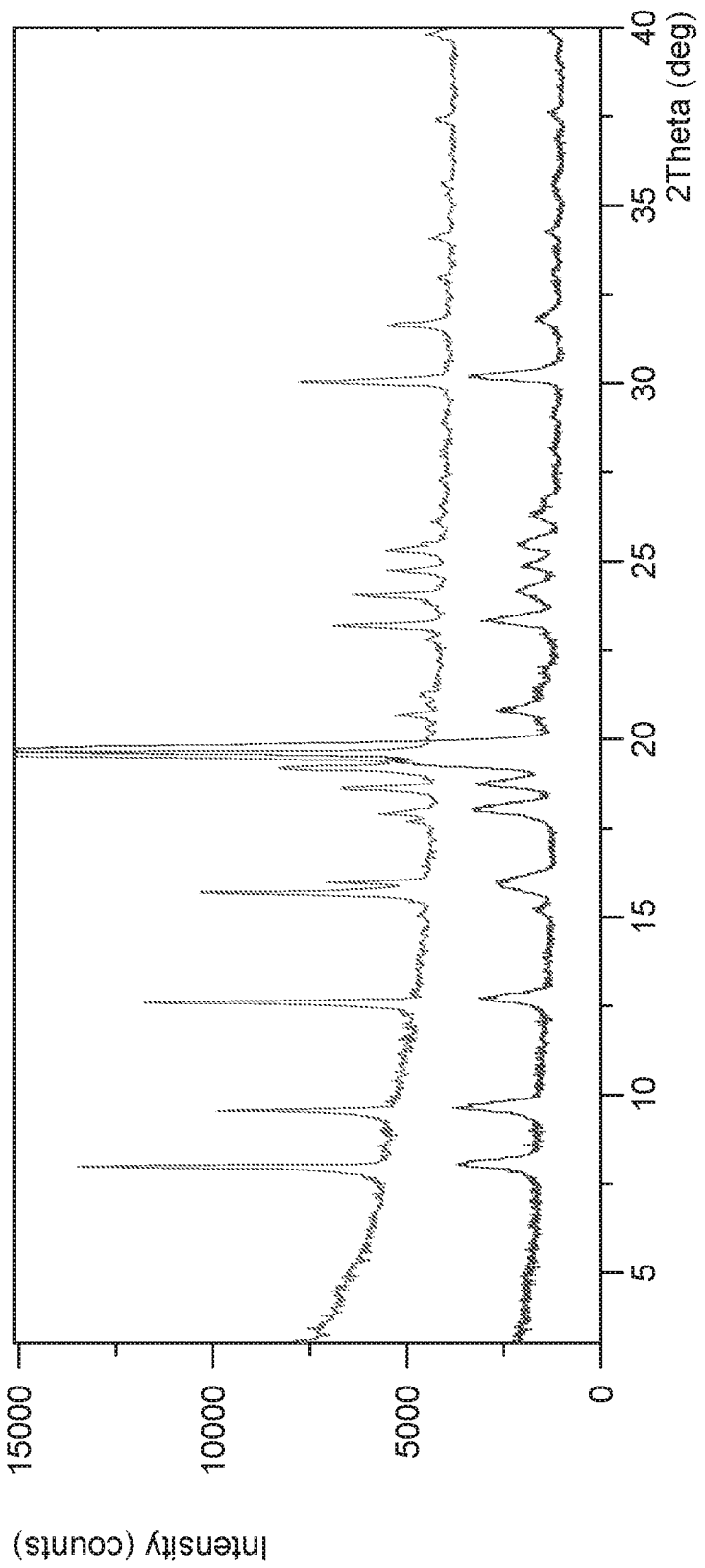

Intensity (counts)
15000
10000
5000
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 2B

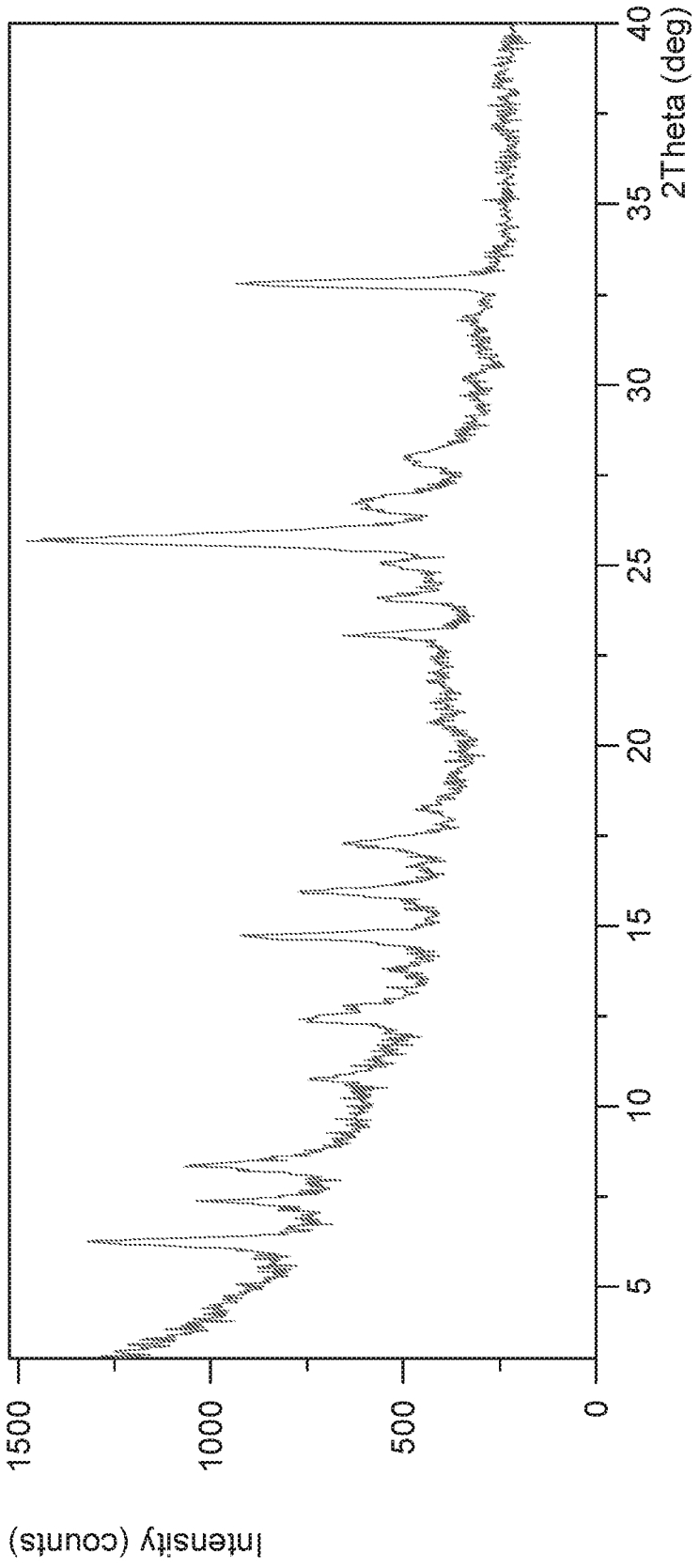

Intensity (counts)
1500
1000
500
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 3

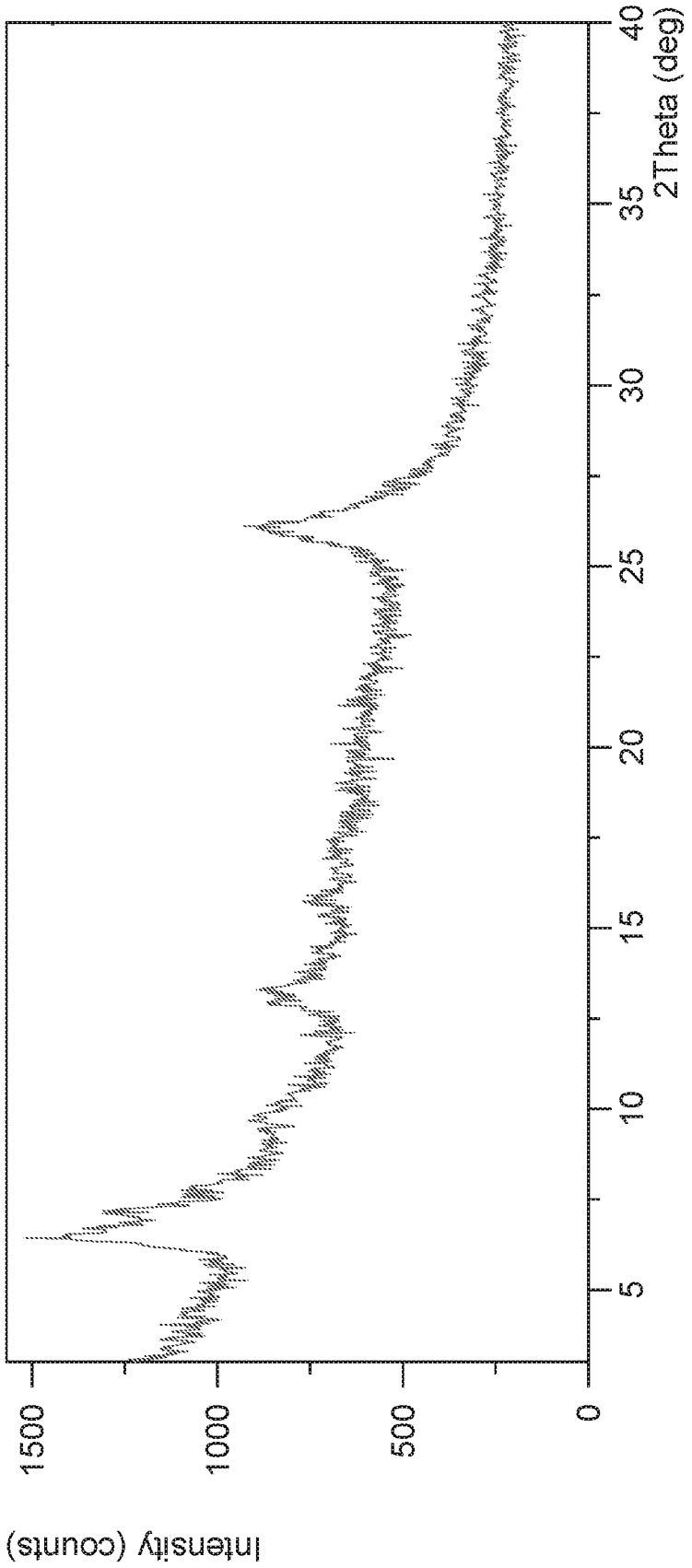

Intensity (counts)
1500
1000
500
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 4A

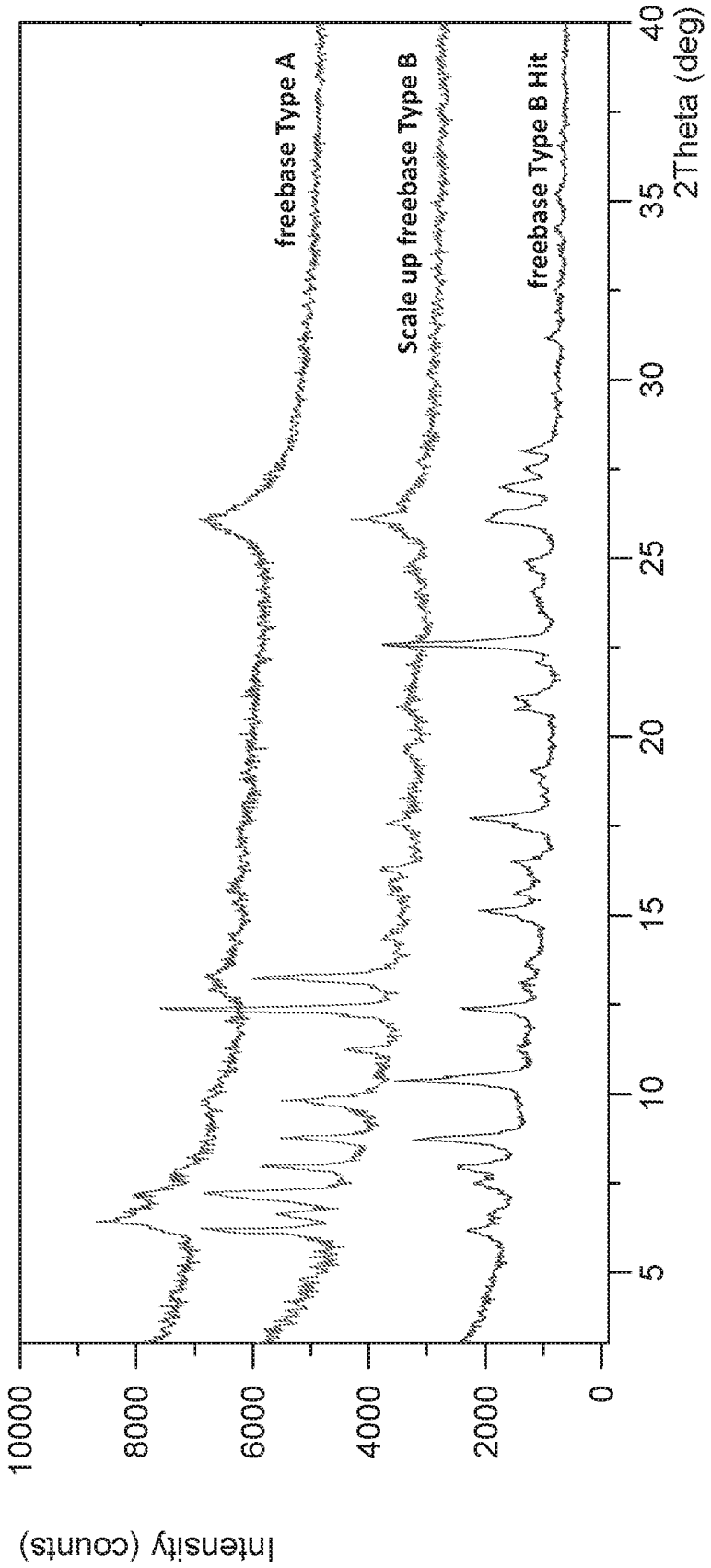

freebase Type A
Scale up freebase Type B
freebase Type B Hit
Intensity (counts)
2Theta (deg)
10000
8000
6000
4000
2000
0
5
10
15
20
25
30
35
40

Figure 4B

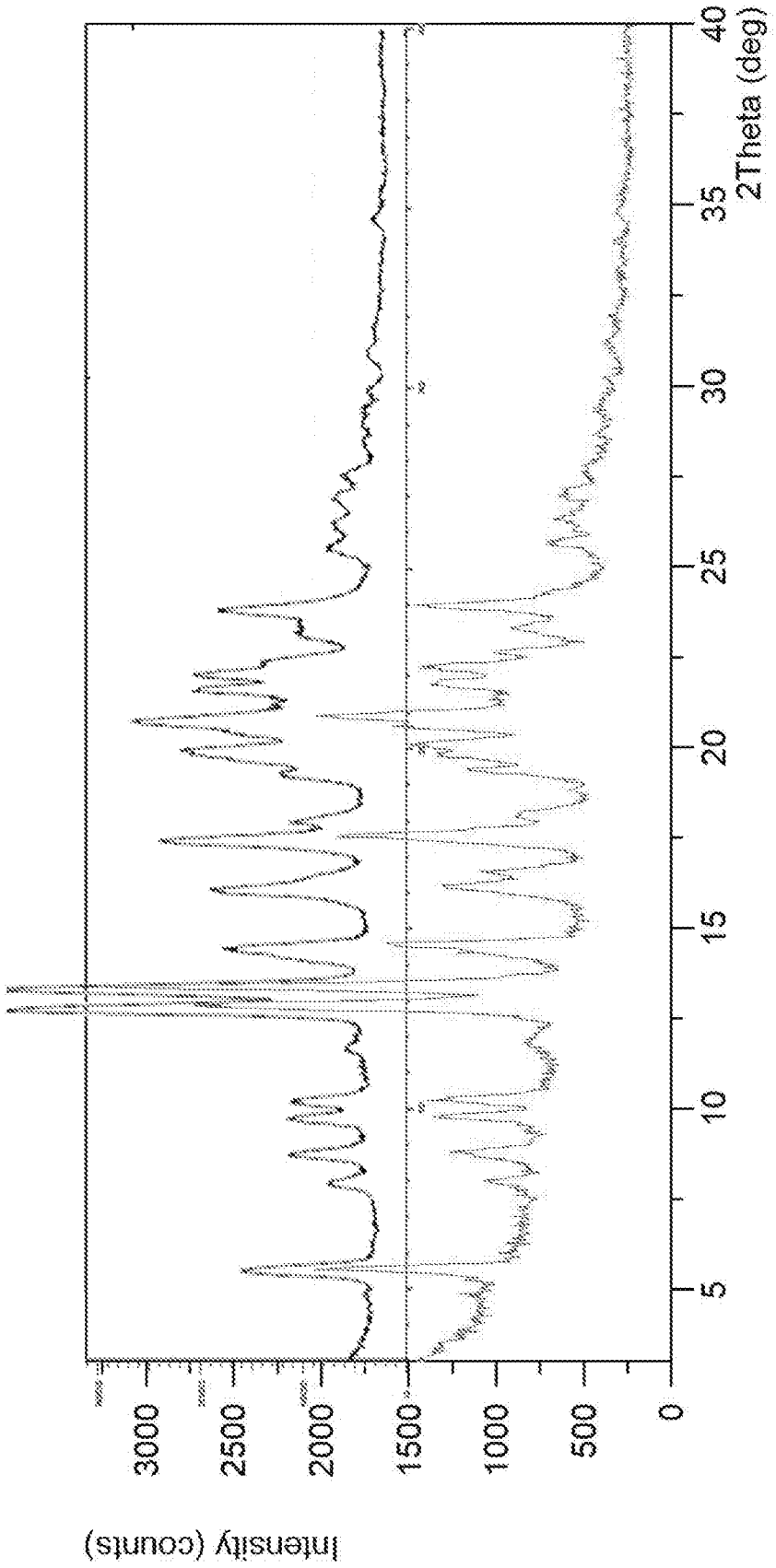

Intensity (counts)
3000
2500
2000
1500
1000
500
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 5A

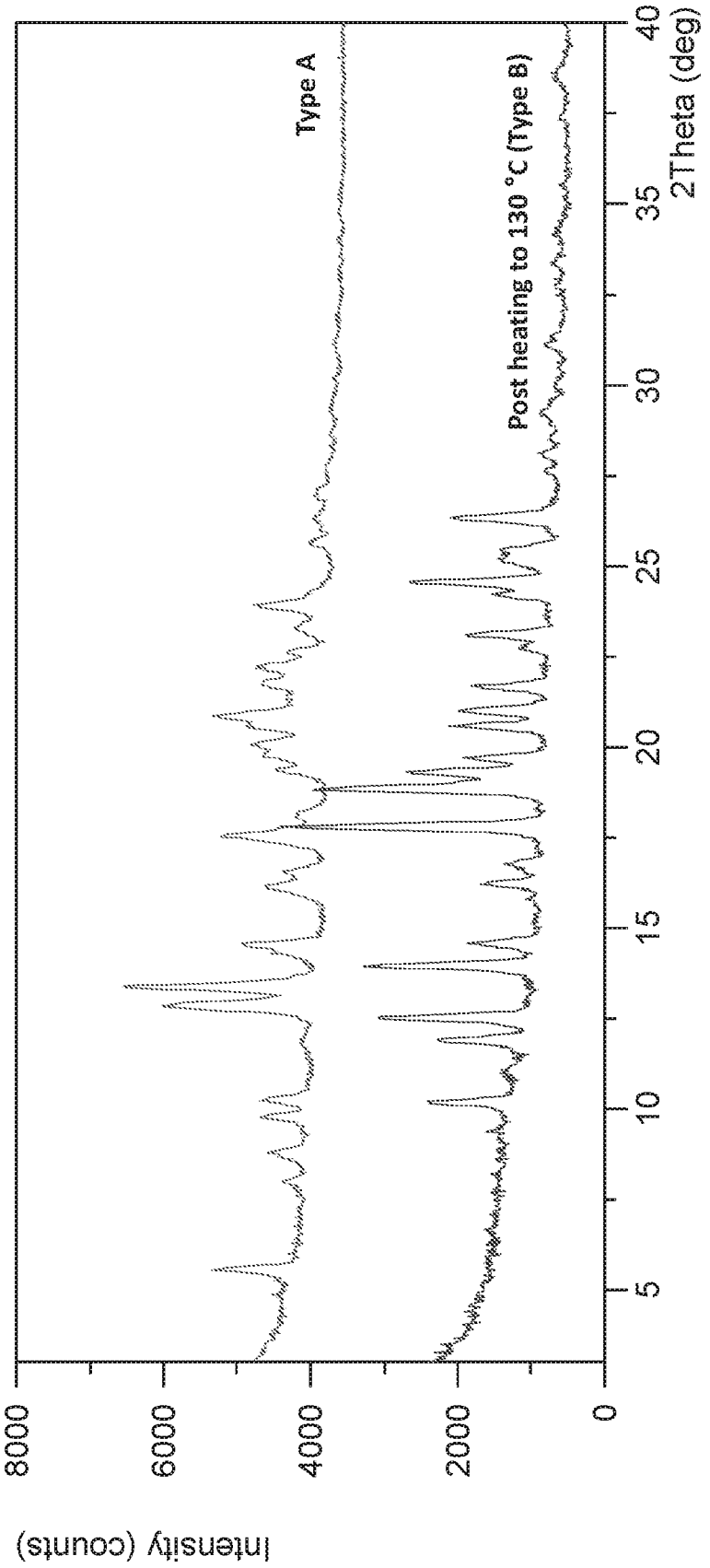

Type A
Post heating to 130 °C (Type B)
Intensity (counts)
8000
6000
4000
2000
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 5B

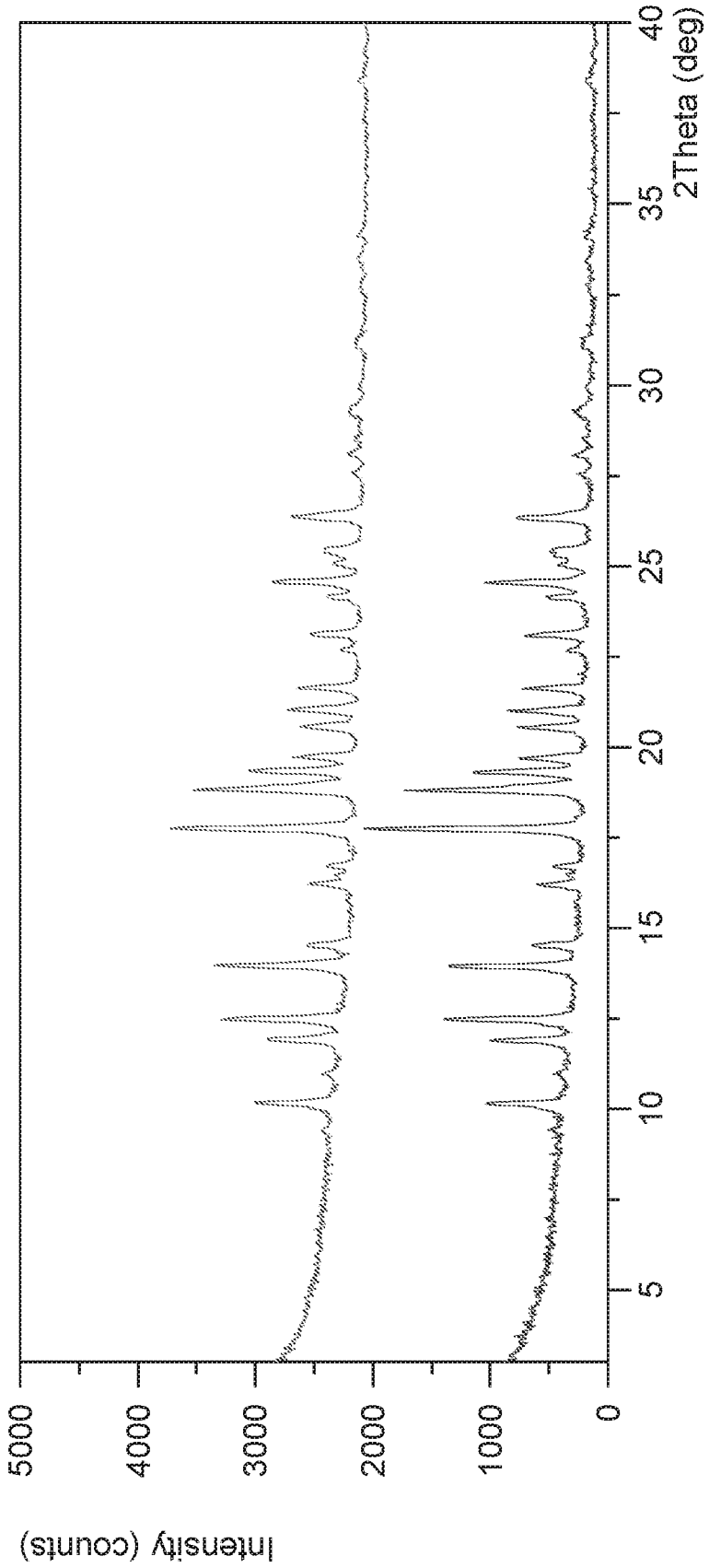

Intensity (counts)
5000
4000
3000
2000
1000
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 5C

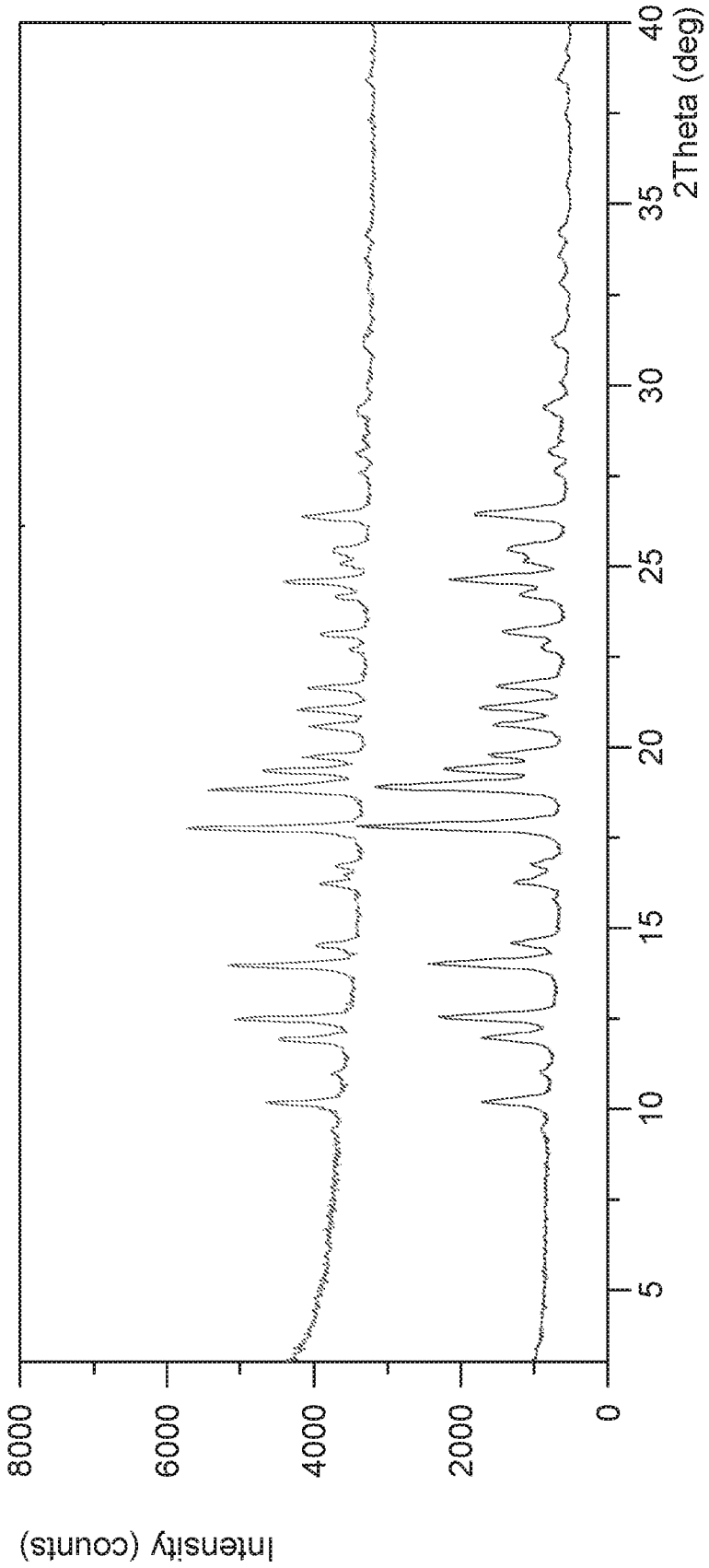

Intensity (counts)
8000
6000
4000
2000
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 5D

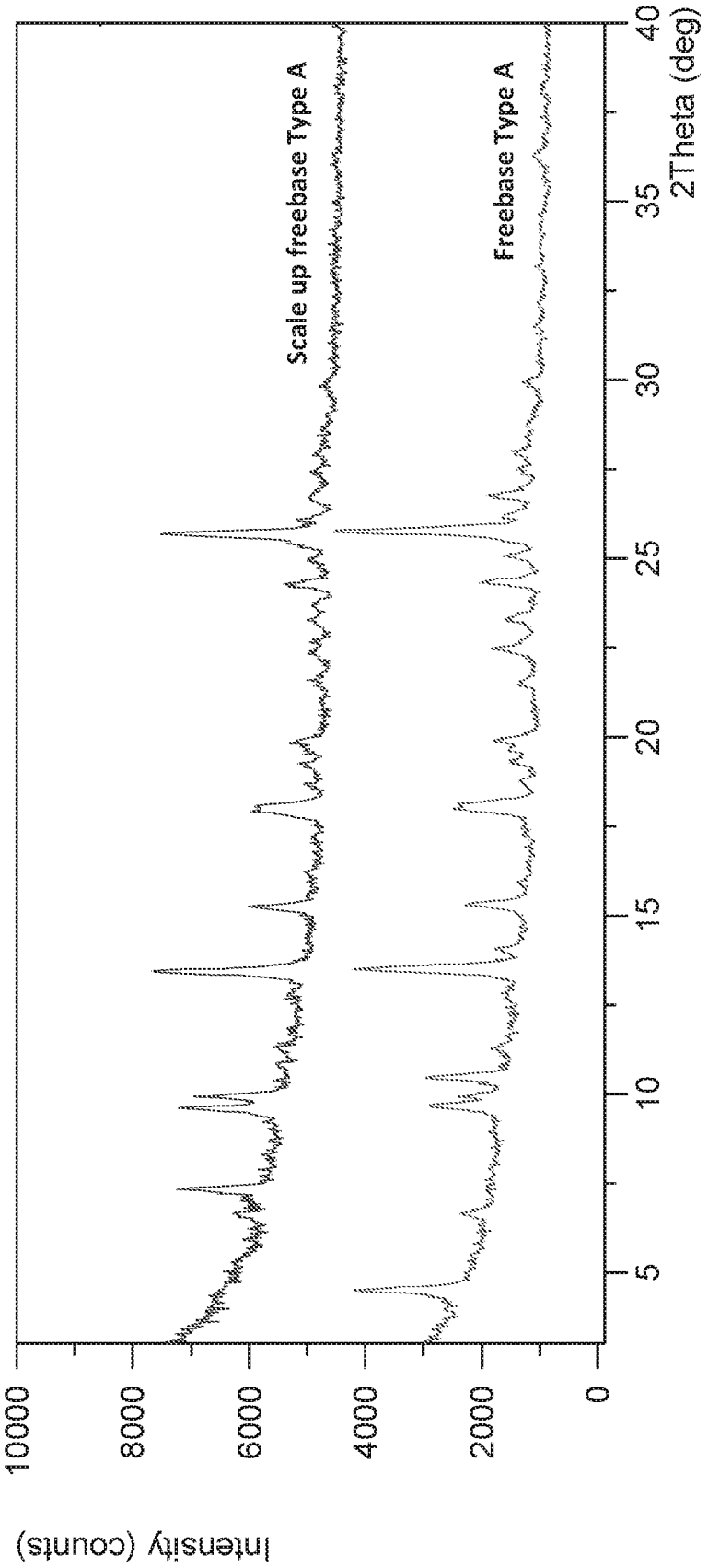

Intensity (counts)
10000
8000
6000
4000
2000
0
5
10
15
20
25
30
35
40
2Theta (deg)
Scale up freebase Type A
Freebase Type A

Figure 6

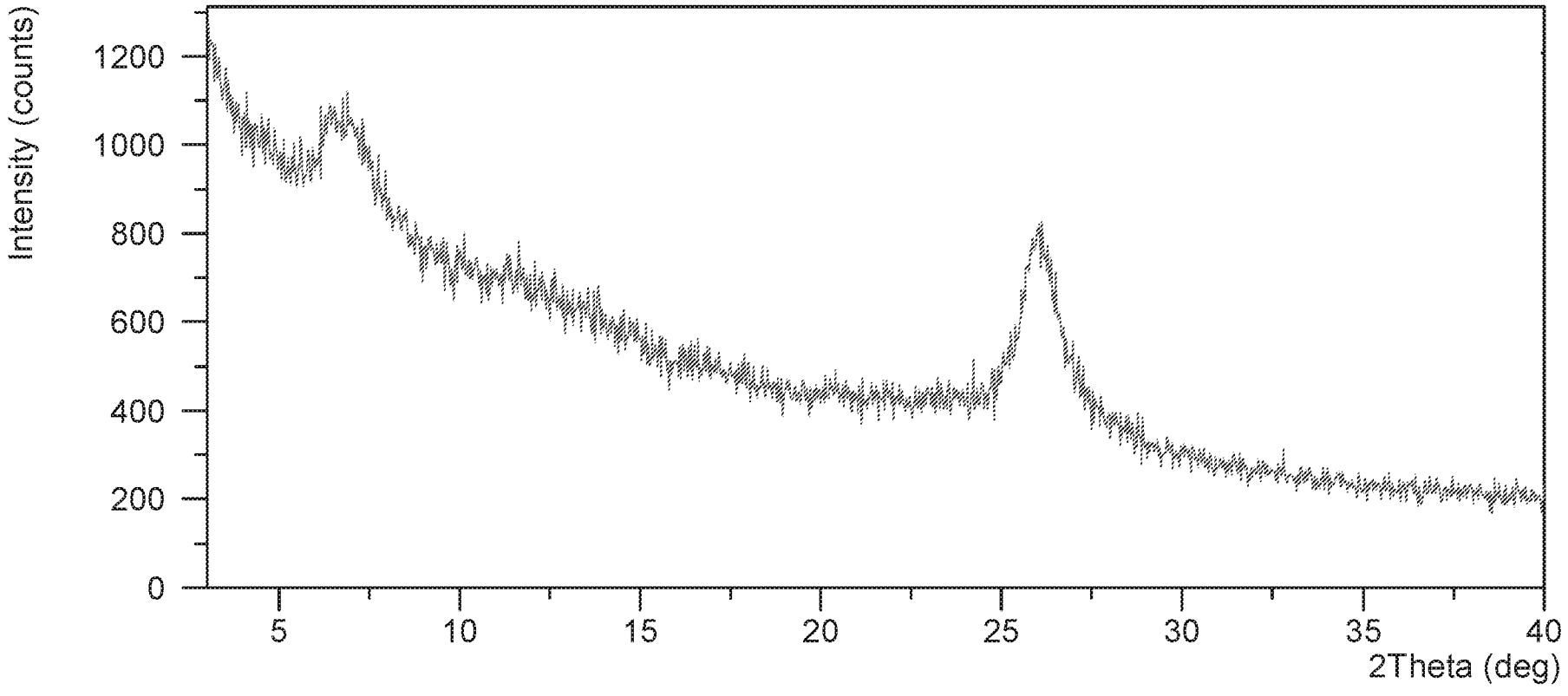

Intensity (counts)
1200
1000
800
600
400
200
0
5
10
15
20
25
30
35
40
2Theta (deg)

Figure 1A