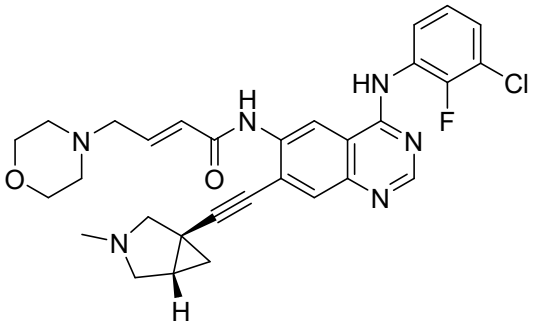
What is claimed is:

1. A morphic form of Compound No. 1:



a solvate thereof, a hydrate thereof, or a pharmaceutically acceptable salt thereof, wherein the morphic form is a crystalline form.

2. The morphic form of claim 1, wherein the morphic form is Form A, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 4.8±0.2, 5.6±0.2, 9.6±0.2, 17.6±0.2, 20.0±0.2, and 24.6±0.2 °2θ (e.g., 4.8±0.1, 5.6±0.1, 9.6±0.1, 17.6±0.1, 20.0±0.1, and 24.6±0.1 °2θ (e.g., 4.8, 5.6, 9.6, 17.6, 20.0, and 24.6 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having at least one endothermic peak selected from 76 ± 20, 141 ± 20, 156 ± 20, and 170 ± 20 °C (e.g., 76 ± 10, 141 ± 10, 156 ± 10, and 170 ± 10 °C (e.g., 76 ± 5, 141 ± 5, 156 ± 5, and 170 ± 5 °C (e.g., 76 ± 4, 141 ± 4, 156 ± 4, and 170 ± 4 °C (e.g., 76 ± 3, 141 ± 3, 156 ± 3, and 170 ± 3 °C (e.g., 76 ± 2, 141 ± 2, 156 ± 2, and 170 ± 2 °C (e.g., 76 ± 1, 141 ± 1, 156 ± 1, and 170 ± 1 °C (e.g., 76 ± 0.5, 141 ± 0.5, 156 ± 0.5, and 170 ± 0.5 °C))))))).

3. The morphic form of claim 1, wherein the morphic form is Form B, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 3.2±0.2, 6.5±0.2, 13.4±0.2, 16.7±0.2, 17.7±0.2, and 18.6±0.2 °2θ (e.g., 3.2±0.1, 6.5±0.1, 13.4±0.1, 16.7±0.1, 17.7±0.1, and 18.6±0.1 °2θ (e.g., 3.2, 6.5, 13.4, 16.7, 17.7, and 18.6 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having at least one endothermic peak selected from 155 ± 20 and 176 ± 20 °C (e.g., 155 ± 10 and 176 ± 10 °C (e.g., 155 ± 5 and 176 ± 5 °C (e.g., 155 ± 4 and 176 ± 4 °C (e.g., 155 ± 3 and 176 ± 3 °C (e.g., 155 ± 2 and 176 ± 2 °C (e.g., 155 ± 1 and 176 ± 1 °C (e.g., 155 ± 0.5 and 176 ± 0.5 °C))))))).

4. The morphic form of claim 1, wherein the morphic form is Form C, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 4.0±0.2, 12.6±0.2, 14.1±0.2, 16.1±0.2, 16.7±0.2, and 19.1±0.2 °2θ (e.g., 4.0±0.1, 12.6±0.1, 14.1±0.1, 16.1±0.1, 16.7±0.1, and 19.1±0.1 °2θ (e.g., 4.0, 12.6, 14.1, 16.1, 16.7, and 19.1 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having an endothermic peak at 181 ± 20 °C (e.g., 181 ± 10 °C (e.g., 181 ± 5 °C (e.g., 181 ± 4 °C (e.g., 181 ± 3 °C (e.g., 181 ± 2 °C (e.g., 181 ± 1 °C (e.g., 181 ± 0.5 °C)))))).

5. The morphic form of claim 1, wherein the morphic form is Form D, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 5.4±0.2, 9.7±0.2, 15.3±0.2, 18.8±0.2, 19.3±0.2, and 23.5±0.2 °2θ (e.g., 5.4±0.1, 9.7±0.1, 15.3±0.1, 18.8±0.1, 19.3±0.1, and 23.5±0.1 °2θ (e.g., 5.4, 9.7, 15.3, 18.8, 19.3, and 23.5 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having at least one endothermic peak selected from 128 ± 20, 149 ± 20, and 175 ± 20 °C (e.g., 128 ± 10, 149 ± 10, and 175 ± 10 °C (e.g., 128 ± 5, 149 ± 5, and 175 ± 5 °C (e.g., 128 ± 4, 149 ± 4, and 175 ± 4 °C (e.g., 128 ± 3, 149 ± 3, and 175 ± 3 °C (e.g., 128 ± 2, 149 ± 2, and 175 ± 2 °C (e.g., 128 ± 1, 149 ± 1, and 175 ± 1 °C (e.g., 128 ± 0.5, 149 ± 0.5, and 175 ± 0.5 °C)))))).

6. The morphic form of claim 1, wherein the morphic form is Form E, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 7.4±0.2, 13.3±0.2, 15.8±0.2, 16.3±0.2, 19.2±0.2, and 22.4±0.2 °2θ (e.g., 7.4±0.1, 13.3±0.1, 15.8±0.1, 16.3±0.1, 19.2±0.1, and 22.4±0.1 °2θ (e.g., 7.4, 13.3, 15.8, 16.3, 19.2, and 22.4 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having an endothermic peak at 173 ± 20 °C (e.g., 173 ± 10 °C (e.g., 173 ± 5 °C (e.g., 173 ± 4 °C (e.g., 173 ± 3 °C (e.g., 173 ± 2 °C (e.g., 173 ± 1 °C (e.g., 173 ± 0.5 °C)))))).

7. The morphic form of claim 1, wherein the morphic form is Form F, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 5.5±0.2, 7.2±0.2,

14.5±0.2, 15.2±0.2, 16.4±0.2, and 21.9±0.2 °2θ (e.g., 5.5±0.1, 7.2±0.1, 14.5±0.1, 15.2±0.1, 16.4±0.1, and 21.9±0.1 °2θ (e.g., 5.5, 7.2, 14.5, 15.2, 16.4, and 21.9 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having at least one endothermic peak selected from 48 ± 20, 80 ± 20, 146 ± 20, and 174 ± 20 °C (e.g., 48 ± 10, 80 ± 10, 146 ± 10, and 174 ± 10 °C (e.g., 48 ± 5, 80 ± 5, 146 ± 5, and 174 ± 5 °C (e.g., 48 ± 4, 80 ± 4, 146 ± 4, and 174 ± 4 °C (e.g., 48 ± 3, 80 ± 3, 146 ± 3, and 174 ± 3 °C (e.g., 48 ± 2, 80 ± 2, 146 ± 2, and 174 ± 2 °C (e.g., 48 ± 1, 80 ± 1, 146 ± 1, and 174 ± 1 °C (e.g., 48 ± 0.5, 80 ± 0.5, 146 ± 0.5, and 174 ± 0.5 °C))))))).

8. The morphic form of claim 1, wherein the morphic form is Form G, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 4.0±0.2, 5.3±0.2, 7.1±0.2, 16.0±0.2, 16.7±0.2, and 19.2±0.2 °2θ (e.g., 4.0±0.1, 5.3±0.1, 7.1±0.1, 16.0±0.1, 16.7±0.1, and 19.2±0.1 °2θ (e.g., 4.0, 5.3, 7.1, 16.0, 16.7, and 19.2 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having at least one endothermic peak selected from 34 ± 20, 175 ± 20, and 182 ± 20 °C (e.g., 34 ± 10, 175 ± 10, and 182 ± 10 °C (e.g., 34 ± 5, 175 ± 5, and 182 ± 5 °C (e.g., 34 ± 4, 175 ± 4, and 182 ± 4 °C (e.g., 34 ± 3, 175 ± 3, and 182 ± 3 °C (e.g., 34 ± 2, 175 ± 2, and 182 ± 2 °C (e.g., 34 ± 1, 175 ± 1, and 182 ± 1 °C (e.g., 34 ± 0.5, 175 ± 0.5, and 182 ± 0.5 °C))))))).

9. The morphic form of claim 1, wherein the morphic form is Form H, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 4.6±0.2, 5.6±0.2, 8.6±0.2, 13.8±0.2, 17.0±0.2, and 17.8±0.2 °2θ (e.g., 4.6±0.1, 5.6±0.1, 8.6±0.1, 13.8±0.1, 17.0±0.1, and 17.8±0.1 °2θ (e.g., 4.6, 5.6, 8.6, 13.8, 17.0, and 17.8 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having at least one endothermic peak selected from 62 ± 20 and 153 ± 20 °C (e.g., 62 ± 10 and 153 ± 10 °C (e.g., 62 ± 5 and 153 ± 5 °C (e.g., 62 ± 4 and 153 ± 4 °C (e.g., 62 ± 3 and 153 ± 3 °C (e.g., 62 ± 2 and 153 ± 2 °C (e.g., 62 ± 1 and 153 ± 1 °C (e.g., 62 ± 0.5 and 153 ± 0.5 °C))))))).

10. The morphic form of claim 1, wherein the morphic form is Form I, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 5.1±0.2, 17.0±0.2,

20.4±0.2, 21.5±0.2, 22.3±0.2, and 25.5±0.2 °2θ (e.g., 5.1±0.1, 17.0±0.1, 20.4±0.1, 21.5±0.1, 22.3±0.1, and 25.5±0.1 °2θ (e.g., 5.1, 17.0, 20.4, 21.5, 22.3, and 25.5 °2θ)) using Cu Kα radiation.

11. The morphic form of claim 1, wherein the morphic form is Form J, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 4.5±0.2, 5.1±0.2, 10.4±0.2, 16.0±0.2, 17.9±0.2, and 22.5±0.2 °2θ (e.g., 4.5±0.1, 5.1±0.1, 10.4±0.1, 16.0±0.1, 17.9±0.1, and 22.5±0.1 °2θ (e.g., 4.5, 5.1, 10.4, 16.0, 17.9, and 22.5 °2θ)) using Cu Kα radiation, and is characterized by a DSC curve having at least one endothermic peak selected from 137 ± 20 and 166 ± 20 °C (e.g., 137 ± 10 and 166 ± 10 °C (e.g., 137 ± 5 and 166 ± 5 °C (e.g., 137 ± 4 and 166 ± 4 °C (e.g., 137 ± 3 and 166 ± 3 °C (e.g., 137 ± 2 and 166 ± 2 °C (e.g., 137 ± 1 and 166 ± 1 °C (e.g., 137 ± 0.5 and 166 ± 0.5 °C)))))))).

12. The morphic form of claim 1, wherein the morphic form is Form K, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 5.2±0.2, 6.8±0.2, 17.0±0.2, 20.5±0.2, 21.6±0.2, and 22.4±0.2 °2θ (e.g., 5.2±0.1, 6.8±0.1, 17.0±0.1, 20.5±0.1, 21.6±0.1, and 22.4±0.1 °2θ (e.g., 5.2, 6.8, 17.0, 20.5, 21.6, and 22.4 °2θ)) using Cu Kα radiation.

13. The morphic form of claim 1, wherein the morphic form is Form L, the solvate thereof, the hydrate thereof, or the pharmaceutically acceptable salt thereof, and is characterized by an X-ray diffraction ("XRPD") pattern comprising at least three peaks selected from 5.4±0.2, 7.8±0.2, 14.8±0.2, 15.3±0.2, 16.6±0.2, and 19.3±0.2 °2θ (e.g5.4±0.1, 7.8±0.1, 14.8±0.1, 15.3±0.1, 16.6±0.1, and 19.3±0.1 °2θ (e.g., 5.4, 7.8, 14.8, 15.3, 16.6, and 19.3 °2θ)) using Cu Kα radiation.

14. The morphic form of any one of the preceding claims, which is at least 90, 95, 96, 97, 98, or 99% pure.

15. A pharmaceutical composition comprising a therapeutically effective amount of any one, or combination, of the morphic forms of any preceding claim and a pharmaceutically acceptable excipient.

16. Use of the morphic form of any one of the preceding claims in the manufacture of a medicament for inhibiting an oncogenic variant of an ErbB receptor.

17. Use of the morphic form of any one of the preceding claims in the manufacture of a medicament for preventing or treating cancer.

18. The use of claim 17, wherein the cancer is a solid tumor, a bladder cancer, a breast cancer, a cervical cancer, a colorectal cancer, an endometrial cancer, a gastric cancer, a glioblastoma (GBM), a head and neck cancer, a lung cancer, a non-small cell lung cancer (NSCLC), or any subtype thereof.

19. The use of any one of the preceding claims, wherein the cancer or a tumor or a cell thereof expresses an oncogenic variant of an epidermal growth factor receptor (EGFR).

20. The use of any one of the preceding claims, wherein the oncogenic variant is an oncogenic variant in an ErbB receptor, epidermal growth factor receptor (EGFR), of a HER2 receptor, or a HER-4 receptor and wherein the oncogenic variant in the ErbB receptor, EGFR, or HER2 receptor is an allosteric variant.

21. The use of any one of the preceding claims, wherein the subject or the cancer is insensitive or resistant to treatment with one or more of gefinitinib, erlotinib, afatinib, osimertinib, and necitunumab.

22. The use of any one of the preceding claims, wherein the sequence encoding the oncogenic variant of the EGFR comprises a deletion of exon 20 or a portion thereof and wherein the cancer, tumor or cell thereof does not comprise an oncogenic variation in a sequence encoding one or more of an EGFR kinase domain (KD), BRAF, NTRK, and KRAS or a marker indicating responsiveness to immunotherapy.

23. The use of any one of the preceding claims, wherein the oncogenic variant or the oncogenic mutation is detected by a Food and Drug Administration (FDA)-approved diagnosis.

24. The use of any one of the preceding claims, wherein the subject has an adverse reaction to treatment with a Type I inhibitor.

25. The use of any one of the preceding claims, wherein the subject has an adverse reaction to treatment with one or more of gefinitinib, erlotinib, afatinib, osimertinib, necitunumab, crizotinib, alectinib, ceritinib, dabrafenib, trametinib, afatinib, sapitinib, dacomitinib, canertinib, pelitinib, WZ4002, WZ8040, WZ3146, CO-1686 and AZD9291.