

WHAT IS CLAIMED:

1. Crystalline rilapladib characterized by an X-ray powder diffraction pattern substantially in accordance with Figure 1.
- 5 2. Crystalline rilapladib characterized by an X-ray powder diffraction pattern comprising diffraction angles (2 theta) at least at positions of about 6.2, 7.6, 9.1, 11.2, and 14.3 degrees.
3. Crystalline rilapladib characterized by an X-ray powder diffraction pattern comprising
10 diffraction angles (2 theta) at least at positions of about 6.2, 7.6, 9.1, 11.2, 11.7, 12.4, 13.1, 14.0, 14.3, 14.9, 15.3, 16.5, 16.8, 17.5, 17.8, 18.5, 18.9, 19.3, 20.0, 20.6, 21.1, and 22.1 degrees.
4. Crystalline rilapladib characterized by a Raman spectrum substantially in accordance with Figure 2.
- 15 5. Crystalline rilapladib characterized by a Raman spectrum comprising peaks at least at positions of about 103, 276, 752, 1155, 1336, 1623, and 3075 cm^{-1} .
6. Crystalline rilapladib characterized by a Raman spectrum comprising peaks at least at
20 positions of about 103, 159, 186, 276, 519, 524, 613, 628, 694, 736, 752, 766, 776, 808, 820, 1038, 1155, 1179, 1288, 1336, 1467, 1528, 1576, 1611, 1623, 2933, 2952, and 3075 cm^{-1} (e.g., about 103, 808, 1155, 1179, 1288, 1336, 1467, 1528, 1576, 1611, 1623, 2952, and 3075 cm^{-1}).
7. Crystalline rilapladib characterized by a melting point of from about 165°C to about
25 185°C.
8. Crystalline rilapladib characterized by an ATR-IR absorption spectrum substantially in accordance with Figure 7.
- 30 9. Crystalline rilapladib characterized by an ATR-IR absorption spectrum comprising peaks at least at about wavenumbers 2931, 1652, 1621, 1595, 1528, 1494, 1478, 1423, 1403, 1327, 1317, 1286, 1237, 1204, 1187, 1166, 1140, 1109, 1066, 1024, 992, 969, 932, 865, 859, 813, 795, 767, 751, 708, and 693.

10. Crystalline rilapladib characterized by at least two properties, selected from an XRPD pattern according to any one of claims 1-3, a Raman spectrum according to any one of claims 4-6, a melting point according to claim 7, and an ATR-IR absorption spectrum according to claim 8 or 9.
- 5
11. Crystalline rilapladib according to any one of the preceding claims, wherein said crystalline rilapladib is anhydrous.
12. A pharmaceutical composition comprising crystalline rilapladib according to any one of
- 10 claims 1-11 and a pharmaceutically acceptable carrier.
13. An effective amount of crystalline rilapladib according to any one of claims 1-11 for use in the treatment of a Lp-PLA₂ mediated disease or disorder in a subject.
- 15
14. The effective amount of crystalline rilapladib according to claim 13 wherein the disease or disorder is Alzheimer's Disease.
15. The effective amount of crystalline rilapladib according to claim 13 or 14 wherein the subject is a human.
- 20
16. The effective amount of crystalline rilapladib according to claim 14 wherein the crystalline rilapladib according to any one of claims 1-11 is to be administered in a combination therapy with one or more additional pharmaceutical agents for the treatment of Alzheimer's disease (e.g., agents selected from acetylcholinesterase inhibitors, NMDA receptor antagonists, and combinations thereof, e.g. tacrine, donepezil, rivastigmine, galantamine, and memantine).
- 25
17. Crystalline rilapladib according to any one of claims 1-11 for use in therapy.
18. Crystalline rilapladib according to any one of claims 1-11 for treating an Lp-PLA₂ mediated
- 30 disease or disorder.
19. Crystalline rilapladib according to any one of claims 1-11 for treating Alzheimer's Disease.

20. The use of crystalline rilapladib according to any one of claims 1-11 in the preparation of a medicament for the treatment of a disease or disorder mediated by Lp-PLA₂.

21. The use of crystalline rilapladib according to any one of claims 1-11 in the preparation of
5 a medicament for the treatment of Alzheimer's Disease.

CLAIMS

1. Crystalline rilapladib characterized by an X-ray powder diffraction pattern substantially in accordance with Figure 1.
2. Crystalline rilapladib characterized by an X-ray powder diffraction pattern comprising diffraction angles (2 theta) at least at positions of about 6.2, 7.6, 9.1, 11.2, and 14.3 degrees.
3. Crystalline rilapladib characterized by an X-ray powder diffraction pattern comprising diffraction angles (2 theta) at least at positions of about 6.2, 7.6, 9.1, 11.2, 11.7, 12.4, 13.1, 14.0, 14.3, 14.9, 15.3, 16.5, 16.8, 17.5, 17.8, 18.5, 18.9, 19.3, 20.0, 20.6, 21.1, and 22.1 degrees.
4. Crystalline rilapladib characterized by a Raman spectrum substantially in accordance with Figure 2.
5. Crystalline rilapladib characterized by a Raman spectrum comprising peaks at least at positions of about 103, 276, 752, 1155, 1336, 1623, and 3075 cm^{-1} .
6. Crystalline rilapladib characterized by a Raman spectrum comprising peaks at least at positions of about 103, 159, 186, 276, 519, 524, 613, 628, 694, 736, 752, 766, 776, 808, 820, 1038, 1155, 1179, 1288, 1336, 1467, 1528, 1576, 1611, 1623, 2933, 2952, and 3075 cm^{-1} .
7. Crystalline rilapladib characterized by a melting point of from about 165°C to about 185°C.
8. Crystalline rilapladib characterized by an ATR-IR absorption spectrum substantially in accordance with Figure 7.
9. Crystalline rilapladib characterized by an ATR-IR absorption spectrum comprising peaks at least at about wavenumbers 2931, 1652, 1621, 1595, 1528, 1494, 1478, 1423, 1403, 1327, 1317, 1286, 1237, 1204, 1187, 1166, 1140, 1109, 1066, 1024, 992, 969, 932, 865, 859, 813, 795, 767, 751, 708, and 693.

10. Crystalline rilapladib characterized by at least two properties, selected from an XRPD pattern according to any one of claims 1-3, a Raman spectrum according to any one of claims 4-6, a melting point according to claim 7, and an ATR-IR absorption spectrum according to claim 8 or 9.
11. Crystalline rilapladib according to any one of the preceding claims, wherein said crystalline rilapladib is anhydrous.
12. A pharmaceutical composition comprising crystalline rilapladib according to any one of claims 1-11 and a pharmaceutically acceptable carrier.
13. An effective amount of crystalline rilapladib according to any one of claims 1-11 for use in the treatment of an Lp-PLA₂ mediated disease or disorder in a subject.
14. The effective amount of crystalline rilapladib according to claim 13 wherein the disease or disorder is Alzheimer's Disease.
15. The effective amount of crystalline rilapladib according to claim 13 wherein the disease or disorder is vascular dementia.
16. The effective amount of crystalline rilapladib according to claim 13 or 14 or 15 wherein the subject is a human.
17. The effective amount of crystalline rilapladib according to claim 14 in combination with one or more additional pharmaceutical agents for use in the treatment of Alzheimer's Disease.
18. The effective amount of crystalline rilapladib according to claim 17 wherein the one or more pharmaceutical agents are selected from the group consisting of acetylcholinesterase inhibitors, NMDA receptor antagonists, and combinations thereof, e.g. tacrine, donepezil, rivastigmine, galantamine, memantine and combinations thereof.

19. Crystalline rilapladib according to any one of claims 1-11 for use in therapy.
20. Crystalline rilapladib according to any one of claims 1-11 for treating an Lp-PLA₂ mediated disease or disorder.
21. Crystalline rilapladib according to any one of claims 1-11 for treating Alzheimer's Disease.
22. Crystalline rilapladib according to any one of claims 1-11 for treating vascular dementia.
23. The use of crystalline rilapladib according to any one of claims 1-11 in the preparation of a medicament for the treatment of Alzheimer's Disease.
24. The use of crystalline rilapladib according to any one of claims 1-11 in the preparation of a medicament for the treatment of vascular dementia.