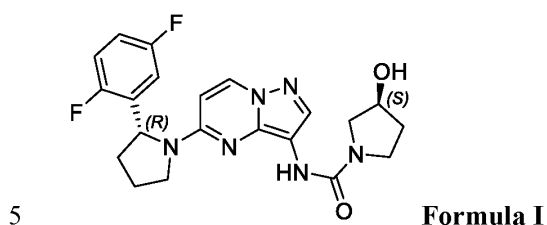


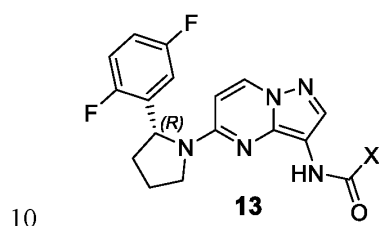
WE CLAIM:

1. A process for preparing a compound of Formula I

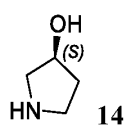


or a salt thereof,
comprising:

- (a) treating a compound of formula **13**



or a salt thereof with a compound of formula **14**



or a salt thereof to form a compound of Formula I;

15 and

- (b) optionally forming a salt of the compound of Formula I;

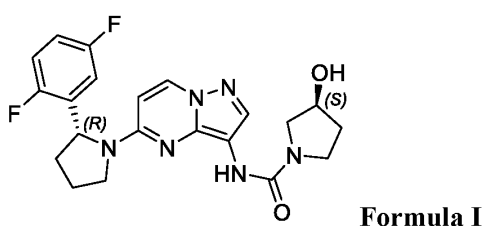
wherein X is halogen, C₁-C₆ alkoxy, C₆-C₁₀ aryloxy or a 5-membered heteroaryl containing at least one nitrogen directly bonded to the C=O of the compound of formula 13, each optionally substituted with one or more substituents independently

20 selected from the group consisting of C₁-C₆ alkyl, C₁-C₆ haloalkyl, halogen, CN, OH,

C₁-C₆ alkoxy, and NR¹R², where R¹ and R² are each independently selected from hydrogen and C₁-C₆ alkyl.

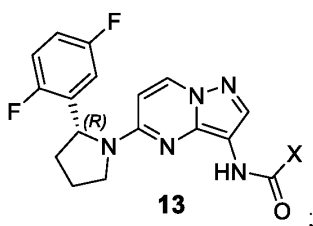
2. The process of claim 1, wherein the compound of formula **13** or salt thereof is in
5 isolated form prior to the treatment with the compound of formula **14** or salt thereof.

3. A process for preparing a compound of Formula I



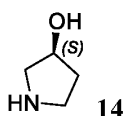
10 or a salt thereof,
comprising:

(a) isolating a compound of formula **13**



(b) optionally forming a salt of formula **13**;

15 (c) treating the compound of formula **13** or a salt thereof with a compound of formula **14**



or a salt thereof to form a compound of Formula I;
and

20 (d) optionally forming a salt of the compound of Formula I;

wherein X is halogen, C₁-C₆ alkoxy, C₆-C₁₀ aryloxy or a 5-membered heteroaryl containing at least one nitrogen directly bonded to the C=O of the compound of formula **13**, each optionally substituted with one or more substituents independently selected from the group consisting of C₁-C₆ alkyl, C₁-C₆ haloalkyl, halogen, CN, OH, C₁-C₆ alkoxy, and NR¹R², where R¹ and R² are each independently selected from hydrogen and C₁-C₆ alkyl.

4. The process of claim 1, 2 or 3, wherein X is halogen.

5. The process of claim 4, wherein X is Cl.

6. The process of claim 4, wherein X is Br.

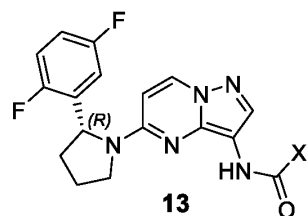
7. The process of claim 1, 2 or 3, wherein X is C₆-C₁₀ aryloxy.

8. The process of claim 7, wherein X is phenoxy.

9. The process of claim 1, 2 or 3, wherein X is a 5-membered heteroaryl containing at least one nitrogen directly bonded to the C=O of the compound of formula **13**.

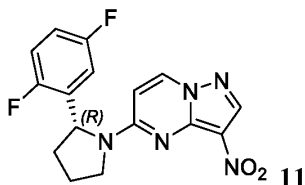
10. The process of claim 9, wherein X is imidazolyl.

11. The process of any one of the preceding claims, further comprising preparing the compound of formula **13**



or a salt thereof by a process comprising

(a) treating a compound of formula **11**



or a salt thereof with a nitro reduction system to form a first mixture;

5 and

(b) treating the first mixture with XC(O)Z to form a compound of formula **13** or a salt thereof,

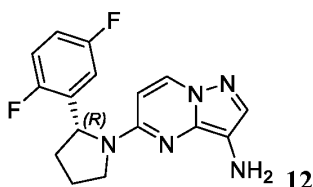
wherein Z is a leaving group selected from halogen, C₁-C₆ alkoxy, C₆-C₁₀ aryloxy and a 5-
 10 membered heteroaryl containing at least one nitrogen directly bonded to the C=O of
 XC(O)Z , each optionally substituted with one or more substituents independently selected
 from the group
 consisting of C₁-C₆ alkyl, C₁-C₆ haloalkyl, halogen, CN, OH, C₁-C₆ alkoxy, and NR^5R^6 ,
 where R⁵ and R⁶ are each independently selected from hydrogen and C₁-C₆ alkyl;
 15 provided that if Z is optionally substituted C₁-C₆ alkoxy, optionally substituted C₆-C₁₀
 aryloxy, or optionally substituted 5-membered heteroaryl, then Z and X are the same.

12. The process of claim 11, wherein the process comprises:

forming the compound of formula **13** in a second mixture; and

20 isolating the compound of formula **13** from the second mixture.

13. The process of claim 11 or 12, wherein the first mixture comprises a compound of
 formula **12**

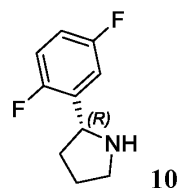


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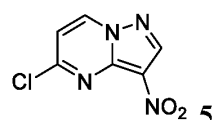
or a salt thereof, and the processes comprises isolating the compound of formula **12** or a salt thereof from the first mixture prior to treating with XC(O)Z.

- 5 14. The process of claim 13, wherein the salt of the compound of formula **12** is the fumarate salt.
15. The process of claim 13 or 14, wherein Z is halogen.
16. The process of claim 13 or 14, wherein Z is chlorine.
- 10 17. The process of claim 13 or 14, wherein Z is bromine.
18. The process of claim 13 or 14, wherein Z is a 5-membered heteroaryl containing at least one nitrogen directly bonded to the C=O of XC(O)Z.
- 15 19. The process of claim 18, wherein Z is imidazolyl.
20. The process of any one of claims 11 to 19, wherein the nitro reduction system comprises a metal or a compound of a metal.
- 20 21. The process of claim 20, wherein the nitro reduction system comprises a metal.
22. The process of claim 20, wherein the nitro reduction system comprises a salt of a metal.
- 25 23. The process of claim 20, wherein the nitro reduction system comprises an oxide of a metal.
24. The process of any one of claims 11 to 19, wherein the nitro reduction system comprises palladium, platinum, rhodium, ruthenium, nickel, copper, iron, tin, or zinc.
- 30

25. The process of any one of claims 11 to 24, wherein the nitro reduction system comprises an acid.
- 5 26. The process of any one of claims 11 to 19, wherein the nitro reduction system comprises a metal hydride.
27. The process of any one of claims 11 to 19, wherein the nitro reduction system comprises a mixed metal hydride.
- 10 28. The process of any one of claims 11 to 19, wherein the nitro reduction system comprises LiAlH_4 , NaBH_4 , or diisobutylaluminium hydride (*DIBAL*).
29. The process of any one of claims 11 to 19, wherein the nitro reduction system comprises H_2 .
- 15 30. The process of any one of claims 11 to 19, wherein the nitro reduction system comprises an organic compound capable of providing hydrogen.
31. The process of claim 30, wherein the nitro reduction system comprises cyclohexene.
- 20 32. The process of any one of claims 11 to 19, wherein the nitro reduction system comprises Pd, Pd/C, Raney nickel, PtO_2 , Fe/acid, or Zn/acid.
33. The process of claim 32, wherein the nitro reduction system comprises Pd.
- 25 34. The process of claim 32, wherein the nitro reduction system comprises Pd/C.
35. The process of any one of the preceding claims, further comprising preparing the compound of formula **11** or a salt thereof by a process comprising treating a
- 30 compound of formula **10**



or a salt thereof, with a compound of formula **5**

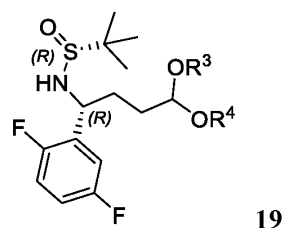


5 or a salt thereof, to form the compound of formula **11** or salt thereof.

36. The process of claim 35, wherein the salt of the compound of formula **10** is a malate salt.

10 37. The process of claim 35 or 36, wherein the salt of the compound of formula **10** is the D-malate salt.

38. The process of any one of claims 35 to 37, further comprising preparing the compound of formula **10** or a salt thereof by a process comprising treating a
15 compound of formula **19**



or a salt thereof, with an acid in the presence of a first reducing agent, to form a compound of formula **10** or a salt thereof.

20

39. The process of claim 38, wherein the first reducing agent is a silane.

40. The process of claim 38, wherein the first reducing agent is triethylsilane.

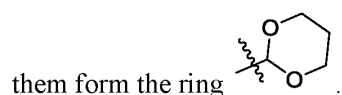
41. The process of claim 38 to 40, wherein each of R^3 and R^4 is the same.

5 42. The process of claim 38 to 40, wherein each of R^3 and R^4 is methyl.

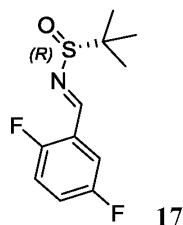
43. The process of claim 38 to 40, wherein each of R^3 and R^4 is ethyl.

10 44. The process of claim 38 to 40, wherein R^3 and R^4 taken together with the atoms connecting them form a six-membered ring.

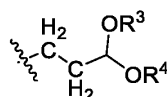
45. The process of claim 44, wherein R^3 and R^4 taken together with the atoms connecting



15 46. The process of any one of claims 38 to 45, further comprising preparing the compound of formula **19** or a salt thereof by a process comprising treating a compound of formula **17**

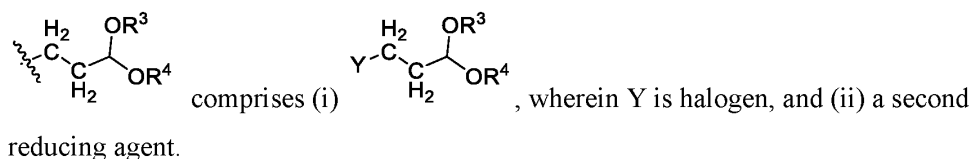


20 with a reagent system comprising the group



to form a compound of formula **19**.

47. The process of claim 46, wherein the reagent system comprising the group



5 48. The process of claim 46, wherein the second reducing agent is samarium iodide.

49. The process of claim 46, wherein the reagent system comprising
 $\begin{array}{c} \text{H}_2 \\ | \\ \text{---C} \\ | \\ \text{H}_2 \end{array} \begin{array}{c} \text{OR}^3 \\ | \\ \text{C} \\ | \\ \text{OR}^4 \end{array}$
 comprises a metal or compound of a metal capable of acting as an electron transfer agent.

10

50. The process of claim 46, wherein the reagent system comprising
 $\begin{array}{c} \text{H}_2 \\ | \\ \text{---C} \\ | \\ \text{H}_2 \end{array} \begin{array}{c} \text{OR}^3 \\ | \\ \text{C} \\ | \\ \text{OR}^4 \end{array}$
 comprises
 $\begin{array}{c} \text{H}_2 \\ | \\ \text{M-C} \\ | \\ \text{H}_2 \end{array} \begin{array}{c} \text{OR}^3 \\ | \\ \text{C} \\ | \\ \text{OR}^4 \end{array}$
 , wherein M is either (i) M^1 , wherein M^1 is a monovalent metal, or (ii) M^2Y , wherein Y is halogen and M^2 is a divalent metal.

15

51. The process of claim 50, wherein M is M^2Y .

52. The process of claim 50, wherein M is MgY .

20 53. The process of any one of claims 48 to 52, wherein Y is Cl.

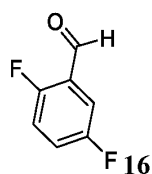
54. The process of any one of claims 48 to 52, wherein Y is Br.

55. The process of any one of claims 48 to 52, wherein Y is I.

25

56. The process of claim 50, wherein M is M¹.

57. The process of any one of claims 46 to 56, further comprising preparing the compound of formula **17** or a salt thereof by a process comprising treating a
5 compound of formula **16**



with (R)-2-methylpropane-2-sulfinamide,

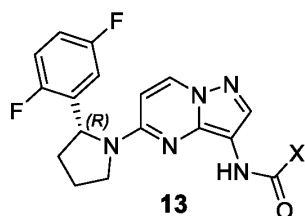
10 to form a compound of formula **17**.

58. The process of claim 57, wherein the process is performed in the presence of a base.

59. A process for preparing a pharmaceutical composition, comprising mixing (i) a
15 compound of **Formula I** or salt thereof prepared according to the process of any one of the preceding claims and (ii) a pharmaceutically acceptable carrier, to form the pharmaceutical composition.

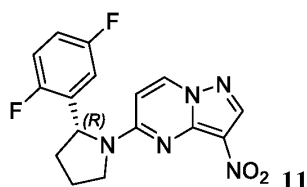
60. The process of any one of the preceding claims, wherein the salt of the compound of
20 **Formula I** is the hydrogen sulfate salt.

61. A process for preparing a compound of formula **13**



or a salt thereof by a process comprising

- a) treating a compound of formula **11**



- 5 or a salt thereof with a nitro reduction system to form a first mixture;

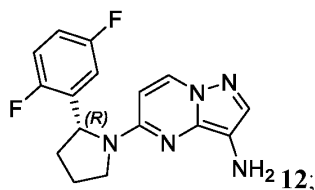
and

- b) treating the first mixture with XC(O)Z to form a compound of formula **13** or a salt thereof,

- 10 wherein X is halogen, $\text{C}_1\text{-C}_6$ alkoxy, $\text{C}_6\text{-C}_{10}$ aryloxy or a 5-membered heteroaryl containing at least one nitrogen directly bonded to the C=O of the compound of formula **13**, each optionally substituted with one or more substituents independently selected from the group consisting of $\text{C}_1\text{-C}_6$ alkyl, $\text{C}_1\text{-C}_6$ haloalkyl, halogen, CN, OH, $\text{C}_1\text{-C}_6$ alkoxy, and NR^1R^2 , where R^1 and R^2 are each independently selected from hydrogen and $\text{C}_1\text{-C}_6$ alkyl, and
- 15 wherein Z is a leaving group selected from halogen, $\text{C}_1\text{-C}_6$ alkoxy, $\text{C}_6\text{-C}_{10}$ aryloxy and a 5-membered heteroaryl containing at least one nitrogen directly bonded to the C=O of XC(O)Z , each optionally substituted with one or more substituents independently selected from the group consisting of $\text{C}_1\text{-C}_6$ alkyl, $\text{C}_1\text{-C}_6$ haloalkyl, halogen, CN, OH, $\text{C}_1\text{-C}_6$ alkoxy, and NR^5R^6 ,
- 20 where R^5 and R^6 are each independently selected from hydrogen and $\text{C}_1\text{-C}_6$ alkyl; provided that if Z is optionally substituted $\text{C}_1\text{-C}_6$ alkoxy, optionally substituted $\text{C}_6\text{-C}_{10}$ aryloxy, or optionally substituted 5-membered heteroaryl, then Z and X are the same.

62. A process for preparing a compound of formula **13** or a salt thereof comprising

- 25 a) isolating a compound of formula **12**



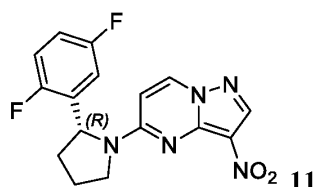
- b) treating a compound of formula **12** with XC(O)Z to form a compound of formula **13**
or a salt thereof; and
c) optionally isolating the compound of formula **13**,

5

wherein X is halogen, C₁-C₆ alkoxy, C₆-C₁₀ aryloxy or a 5-membered heteroaryl containing at least one nitrogen directly bonded to the C=O of the compound of formula **13**, each optionally substituted with one or more substituents independently selected from the group consisting of C₁-C₆ alkyl, C₁-C₆ haloalkyl, halogen, CN, OH, C₁-C₆ alkoxy, and NR¹R²,
10 where R¹ and R² are each independently selected from hydrogen and C₁-C₆ alkyl, and wherein Z is a leaving group selected from halogen, C₁-C₆ alkoxy, C₆-C₁₀ aryloxy and a 5-membered heteroaryl containing at least one nitrogen directly bonded to the C=O of XC(O)Z , each optionally substituted with one or more substituents independently selected from the group
15 consisting of C₁-C₆ alkyl, C₁-C₆ haloalkyl, halogen, CN, OH, C₁-C₆ alkoxy, and NR⁵R⁶, where R⁵ and R⁶ are each independently selected from hydrogen and C₁-C₆ alkyl; provided that if Z is optionally substituted C₁-C₆ alkoxy, optionally substituted C₆-C₁₀ aryloxy, or optionally substituted 5-membered heteroaryl, then Z and X are the same.

20

- 63.** A process for preparing a compound of formula **12** or a salt thereof comprising
a) treating a compound of formula **11**



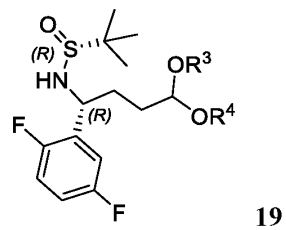
with a nitro reduction system to form the compound of formula **12** or a salt thereof;
and

25

b) isolating the compound of formula **12** or a salt thereof.

64. A process for preparing a compound of formula **10** or a salt thereof, comprising treating a compound of formula **19**

5



or a salt thereof, with an acid in the presence of a first reducing agent, to form a compound of formula **10** or a salt thereof.