What is claimed is:

1. A modified release formulation comprising a therapeutically effective amount of 2-methyl-2-(3-methyl-4-(4-(methylamino)-5-(trifluoromethyl)pyrimidin-2-ylamino)-1H-pyrazol-1-yl)propanenitrile and at least one release-modifying agent, wherein

(i) the release modifying agent is selected from the group consisting of polyvinyl acetate (PVAc), poly(methylacrylate-co-methyl methacrylate-co-methacrylic acid), poly(methacrylic acid-co-ethyl acrylate), poly(methacrylic acid-co-methyl methacrylate), poly(ethyl acrylate-co-methyl methacrylate), poly(ethyl acrylate-co-methyl methacrylate-co-trimethylammonium ethyl methacrylate chloride), polyvinyl alcohol (PVA) and hydroxypropyl methylcellulose (HPMC); and

(ii) release-modifying agent comprises from 3% to 60% by weight of the formulation.

2. The modified release formulation of claim 1 comprising pellets containing 2-methyl-2-(3-methyl-4-(4-(methylamino)-5-(trifluoromethyl)pyrimidin-2-ylamino)-1H-pyrazol-1-yl)propanenitrile and coated with the at least one release-modifying agent.

3. The formulation of claim 1 or 2, wherein the modified release formulation comprises 10% to 50% by weight of 2-methyl-2-(3-methyl-4-(4-(methylamino)-5-(trifluoromethyl)pyrimidin-2-ylamino)-1H-pyrazol-1-yl)propanenitrile.

4. The formulation of any one of claims 1-3, wherein the 2-methyl-2-(3-methyl-4-(4-(methylamino)-5-(trifluoromethyl)pyrimidin-2-ylamino)-1H-pyrazol-1-yl)propanenitrile is crystalline.

5. The method of claim 4, wherein crystalline 2-methyl-2-(3-methyl-4-(4-(methylamino)-5-(trifluoromethyl)pyrimidin-2-ylamino)-1H-pyrazol-1-yl)propanenitrile is milled or micronized.

6. The formulation of any of one of claims 1-5, wherein the formulation is a tablet.

7. The formulation of claim 6, wherein the tablet comprises 10 to 500 mg, 40 to 120 mg, or 30 to 80 mg of 2-methyl-2-(3-methyl-4-(4-(methylamino)-5-(trifluoromethyl)pyrimidin-2-ylamino)-1H-pyrazol-1-yl)propanenitrile.

8. The formulation of claim 6, wherein the release-modifying agent is HPMC or a PARTECK polymer.

9. The formulation of claim 8 wherein the release-modifying agent comprises 20-30% w/w of the formulation.

10. The formulation of any of one of claims 1-9, wherein the formulation is a capsule containing pellets.

11. The formulation of claim 10, wherein

(i) the capsule is a multi-unit particulate combination of immediate release pellets and modified release pellets contained in the capsule; and/or

(ii) the modified release formulation is selected from a delayed-release pellet formulation, a controlled-release pellet formulation, an extended-release pellet formulation, and a pulsatile-release pellet formulation.

12. The formulation of claim 11, wherein the formulation comprises a coating agent, wherein

(i) the coating agent is EUDRAGIT; or

(ii) the coating agent is KOLLICOAT SR 30D.

13. The formulation of claim 12, wherein

(a) the coating agent comprises from 3% to 60% of EUDRAGIT by weight of the formulation;

(b) the coating agent comprises EUDRAGIT RS 30 D of up to 20% w/w;

(c) the coating agent comprises EUDRAGIT NM 30 D of up to 60% w/w;

(d) the KOLLICOAT SR 30D provides a 5-9% weight gain.

14. The formulation of claim 13 wherein the KOLLICOAT SR 30D provides about a 5%, about a 7%, or about a 8% weight gain.

15. A method of preparing a modified release formulation comprising:

(a) coating an inert core selected from the group consisting of sugar, polyols, carnauba wax, silicon dioxide, MCC and tartaric acid, with 2-methyl-2-(3-methyl-4-(4-(methylamino)-5-(trifluoromethyl)pyrimidin-2-ylamino)-1H-pyrazol-1-yl)propanenitrile to form an API-core pellet;

(b) coating the API-core pellet with a cosmetic, non-functional seal coating to form a seal-coated pellet; and

(c) coating the seal-coated pellet with a release-modifying agent to form the modified release formulation.

16. The method of claim 15 wherein

(a) the inert core is selected from a sugar, microcrystalline cellulose (MCC), tartaric acid, polyols, carnauba wax, silicon dioxide, and combinations thereof;

(b) the cosmetic, non-functional seal coating is selected from hydroxypropyl methylcellulose (HPMC), and a mixture of hypromellose and ethylcellulose; and/or;

(c) the release-modifying agent is selected from the group consisting of KOLLICOAT,

EUDRAGIT, hydroxypropyl methylcellulose (HPMC), and a mixture of hypromellose and ethylcellulose.

17. Use of a formulation of any one of claims 1-14 in the manufacture of a medicament for a leucine-rich repeat kinase 2 (LRRK2) mediated disease in a subject in need thereof .

18. The use of claim 17 wherein one or more of the formulations are to be administered to the subject once per day, twice per day, or three times per day.

19. The use of claim 18 wherein the formulations are to be administered to the subject twice per day.

20. The use of claim 19 wherein the LRRK2 mediated disease is a neurodegenerative disease.

21. The use of claim 20 wherein the LRRK2 mediated disease is Parkinson's disease.