Claims

1. A pharmaceutical oral dosage form of 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate, said dosage form comprising a mixture of:
   a) granules comprising 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate, at least one intragranular pharmaceutically acceptable excipient, and a solubilizer;
   b) a blend surrounding said granules and comprising at least one binder, at least one lubricant and at least one disintegrant, and optionally a filler.

2. The pharmaceutical oral dosage form according to claim 1, wherein said at least one intragranular pharmaceutically acceptable excipient is selected from a binder, a filler and a combination of the two.

3. The pharmaceutical oral dosage form according to any of claims 1 and 2, wherein said granules (a)) consist of 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate, a binder, a filler, and a solubilizer.

4. The pharmaceutical oral dosage form according to any of the foregoing claims, wherein said granules a) do not contain a lubricant and not a disintegrant or superdisintegrant.

5. The pharmaceutical oral dosage form according to any of claims 2 - 4, wherein said binder in said granules a) is not: crosslinked starch, microcrystalline cellulose, crosslinked cellulose, crosslinked polyvinylpyrrolidone (crospovidone), crosslinked alginic acid, soy polysaccharide or calcium silicate.

6. The pharmaceutical oral dosage form according to any of claims 2 - 5, wherein said binder in said granules a) is selected from acacia gum, gum tragacanth, gelatin, sucrose, starch, and non-crosslinked polyvinylpyrrolidone (PVP),

preferably non-crosslinked polyvinylpyrrolidone (PVP).

7. The pharmaceutical oral dosage form according to claim 6, wherein said binder in said granules a) is present in said pharmaceutical dosage form in an amount of from about 0.1% by weight to 5% by weight, preferably from about 0.2% by weight to 3.5% by weight, more preferably from about 0.3% by weight to 3% by weight.

8. The pharmaceutical oral dosage form according to any of claims 2 - 7, wherein said filler in said granules a) is selected from mannitol, dextrose, dextrin, lactose, sorbitol, sucrose, inositol, and is preferably mannitol.

9. The pharmaceutical oral dosage form according to claim 8, wherein said filler in said granules a) is present in said pharmaceutical dosage form in an amount of from about 1.5% by weight to 25% by weight, preferably from about 1.75% by weight to 22.5% by weight, more preferably from about 1.9% by weight to 20% by weight.

10. The pharmaceutical oral dosage form according to any of the foregoing claims, wherein said solubilizer in said granules a) is selected from D-α-tocopherol polyethylene glycol succinate (vitamin E-TPGS), sodium lauryl sulphate (SLS), polyoxyethylene sorbitan monooleate (Tween®), cetyltriamethylammonium bromide (CTAB), amino acids such as glycine, polyethylene glycol, and is preferably D-α-tocopherol polyethylene glycol succinate (vitamin E-TPGS).

11. The pharmaceutical oral dosage form according to claim 10, wherein said solubilizer in said granules a) is present in said pharmaceutical dosage form in an amount of from about 0.5% by weight to 8% by weight, preferably from about 0.6% by weight to 7.5% by weight, more preferably from about 0.68% by weight to 6.8% by weight.

12. The pharmaceutical oral dosage form according to any of the foregoing claims, wherein said granules comprise, preferably consist of, 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate, a binder which is non-crosslinked

polyvinylpyrrolidone (PVP), a filler which is mannitol, and a solubilizer which is D-α-tocopherol polyethylene glycol succinate (vitamin E-TPGS).

13. The pharmaceutical oral dosage form according to any of the foregoing claims, wherein said at least one binder in said blend surrounding said granules (b)) is selected from starch, microcrystalline cellulose, povidone, hydroxypropyl cellulose, hydroxypropylmethyl cellulose and combinations thereof, and is preferably a binder having also a disintegrant quality, and more preferably is microcrystalline cellulose.

14. The pharmaceutical oral dosage form according to claim 13, wherein said at least one binder in said blend surrounding said granules (b)) is present in said pharmaceutical dosage form in an amount of from about 25% by weight to 50% by weight, preferably from about 28% by weight to 45% by weight, more preferably from about 30% by weight to 43% by weight.

15. The pharmaceutical oral dosage form according to any of the foregoing claims, wherein said at least one lubricant in said blend surrounding said granules (b)) is selected from magnesium stearate, calcium stearate, PEG6000, sodium stearyl stearate, sodium lauryl sulphate, colloidal silicon dioxide and combinations thereof, wherein preferably said at least one lubricant in said blend surrounding said granules (b)) is a combination of colloidal silicon dioxide and magnesium stearate.

16. The pharmaceutical oral dosage form according to claim 15, wherein said at least one lubricant in said blend surrounding said granules (b)) is present in said pharmaceutical dosage form in an amount of from about 1% by weight to 5% by weight, preferably from about 0.5% by weight to 4% by weight, more preferably from about 0.75% by weight to 3.5% by weight, wherein, when said said at least one lubricant in said blend surrounding said granules (b)) is a combination of colloidal silicon dioxide and magnesium stearate, said colloidal silicon dioxide is present in said pharmaceutical dosage form in an amount of from about 0.5% by weight to 3.5% by weight, preferably from about 1% by weight to 2.5% by weight, more preferably about 2% by weight, and wherein in

such combination said magnesium stearate is present in said pharmaceutical dosage form in an amount of from about 0.1% by weight to 2% by weight, preferably from about 0.5% by weight to 1.5% by weight, more preferably about 0.8% by weight.

17. The pharmaceutical oral dosage form according to any of the foregoing claims, wherein said at least one disintegrant in said blend surrounding said granules (b)) is selected from crosslinked starch, starch glycolate, e.g. sodium starch glycolate, microcrystalline cellulose, crosslinked cellulose, crosslinked polyvinylpyrrolidone (crospovidone), crosslinked alginic acid, croscarmellose, e.g. croscarmelose sodium or croscarmelose calcium, soy polysaccharide, and calcium silicate.

18. The pharmaceutical oral dosage form according to claim 17, wherein said at least one disintegrant in said blend surrounding said granules (b)) is present in said pharmaceutical dosage form in an amount of from about 5% by weight to 12% by weight, preferably from about 7.5% by weight to 10% by weight, more preferably from about 8% by weight to 8.5% by weight.

19. The pharmaceutical oral dosage form according to any of claims 2 - 18, wherein said blend surrounding said granules comprises a filler, which preferably is the same filler as the filler comprised in said granules.

20. The pharmaceutical oral dosage form according to claim 19, wherein said filler in said blend surrounding said granules is present in said pharmaceutical dosage form in an amount of from about 25% by weight to 50% by weight, preferably from about 27.5% by weight to 45% by weight, more preferably from about 31% by weight to 43% by weight.

21. The pharmaceutical oral dosage form according to any of the foregoing claims, wherein said 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate is present in said pharmaceutical dosage form in an amount of from about 1% by weight to 35% by weight, preferably from about

2% by weight to 30% by weight, more preferably from about 2.7% by weight to 27.5% by weight.

22. The pharmaceutical oral dosage form according to any of the foregoing claims, comprising a mixture of:

a) granules comprising 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate in an amount of about 23 - 30% by weight of the dosage form, mannitol in an amount of about 15 - 25% by weight of the dosage form, polyvinylpyrrolidone in an amount of about 1 - 5% by weight of the dosage form, D-α-tocopherol polyethylene glycol succinate (vitamin E-TPGS) in an amount of about 5-8% by weight of the dosage form; and

b) a blend surrounding said granules and comprising microcrystalline cellulose in an amount of about 30 - 34% by weight of the dosage form, colloidal silicon dioxide in an amount of about 1 - 3% by weight of the dosage form, magnesium stearate in an amount of about 0.5 - 1.5% by weight of the dosage form, and croscarmellose sodium in an amount of about 7 - 10% by weight of the dosage form; or

c) granules comprising 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate in an amount of about 12 - 15% by weight of the dosage form, mannitol in an amount of about 8 - 12% by weight of the dosage form, polyvinylpyrrolidone in an amount of 1 - 2% by weight of the dosage form, D-α-tocopherol polyethylene glycol succinate (vitamin E-TPGS) in an amount of about 2 - 5% by weight of the dosage form; and

d) a blend surrounding said granules and comprising microcrystalline cellulose in an amount of about 30 - 33% by weight of the dosage form, mannitol in an amount of about 30 - 33% by weight of the dosage form, magnesium stearate in an amount of about 0.5 - 1.5% by weight of the dosage form, and croscarmellose sodium in an amount of about 7 - 10% by weight of the dosage form; or

e) granules comprising 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate in an amount of about 1 - 5% by weight of the dosage form, mannitol in an amount of about 1 - 3% by weight of the dosage form, polyvinylpyrrolidone in an amount of about 0.1 - 0.5% by weight of the dosage form, D-α-tocopherol polyethylene glycol succinate (vitamin E-TPGS) in an amount of about 0.5 - 0.8% by weight of the dosage form; and

f) a blend surrounding said granules and comprising microcrystalline cellulose in an amount of about 40 - 45% by weight of the dosage form, mannitol in an amount of about 40 - 45% by weight of the dosage form, magnesium stearate in an amount of about 0.5 - 1.5% by weight of the dosage form, and croscarmellose sodium in an amount of about 7 - 10% by weight of the dosage form.

23. A process for preparing a pharmaceutical oral dosage form as defined in any of claims 1 - 22, wherein said process comprises:

i. Granulating 6-chloro-2-ethyl-*N*-(4-(4-(4-(trifluoromethoxy)phenyl)piperidine-1-yl)benzyl)imidazo[1,2-a]pyridine-3-carboxamide ditosylate and the components of said granules a), as defined in any of claims 1 - 22, by a suitable granulation process; said suitable granulation process preferably being selected from fluid bed granulation, high shear granulation, fluid bed drying, fluidized spray drying, single pot granulation, steam granulation, thermal adhesion granulation, pneumatic dry granulation, moisture activated dry granulation, melt granulation, freeze granulation, and foam granulation;

ii. Blending the granules obtained in step i. with the components of said blend, as defined in any of claims 1 - 22;

iii. Compressing the mixture obtained in step ii. into a pharmaceutical dosage form, preferably a tablet; and, optionally

iv. Coating the dosage form obtained in step iii.

24. A pharmaceutical oral dosage form obtainable by a process as defined in claim 23.

25. A pharmaceutical oral dosage form according to any of claims 1 - 22 or 24 for use in therapy ~~the treatment of a bacterial infection, preferably tuberculosis or Buruli ulcer~~.

26. Use of a pharmaceutical oral dosage form according to any of claims 1 - 22 or 24 in the manufacture of a medicament for the treatment of a bacterial infection.

27. The use of claim 26, wherein the bacteria infection is tuberculosis or Buruli ulcer.