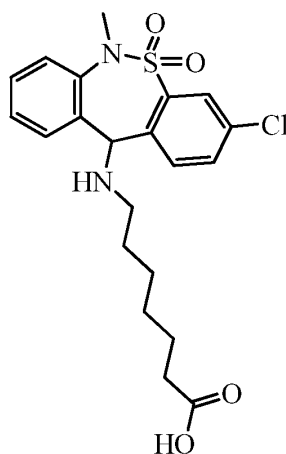


WHAT IS CLAIMED IS:

1. An oxalate salt/co-crystal (tianeptine oxalate) of (RS)-7-(3-chloro-6-methyl-6,11-dihydrodibenzo[c,f] [1,2]thiazepin-11-ylamino)heptanoic acid S,S-dioxide (tianeptine) as shown in Formula I:

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6. The pharmaceutical composition of claim 5, wherein the salt/co-crystal is anhydrous crystalline tianeptine hemi-oxalate Form A, mono-oxalate Form A, or a combination thereof.
- 5 7. The anhydrous crystalline tianeptine hemi-oxalate Form A of claim 4, wherein the crystalline form exhibits an X-ray diffraction pattern (XRPD) comprising at least one peak at about 8.2, 8.6, 9.1, and 9.5 degrees 2θ .
8. The compound of claim 7, wherein the tianeptine hemi-oxalate crystalline Form A
10 exhibits an XRPD pattern further comprising at least one peak selected from the group consisting of about 4.5, 8.2, 8.6, 9.1, 9.5, 11.5, 14.2, 15.2, 15.8, 16.4, 19.2, 22.1, 23.9, 26.9, and 27.4 degrees 2θ .
9. The anhydrous tianeptine hemi-oxalate crystalline Form A of claim 4, wherein the
15 crystalline Form A exhibits an XRPD pattern substantially the same as Figure 2.
10. The anhydrous crystalline tianeptine hemi-oxalate Form A of claim 4,
characterized by at least one of:
- 20 (a) an XPRD pattern exhibiting at least four of the peaks shown in Figure 2;
(b) an FT-IR spectrum substantially the same as Figure 5; and
(c) an NMR spectrum substantially the same as Figure 6.
11. The anhydrous crystalline tianeptine mono-oxalate of claim 4, wherein the
25 crystalline form exhibits an X-ray diffraction pattern (XRPD) comprising at least one peak at about 10.2 and 10.5 degrees 2θ .
12. The compound of claim 11, wherein the crystalline form exhibits an XRPD
pattern further comprising at least one peak selected from the group consisting of about
30 7.5, 8.3, 10.2, 10.5, 11.9, 14.7, 16.2, 16.3, 17.9, 18.7, 21.0, 21.7, and 22.1 degrees 2θ .

13. The anhydrous crystalline tianeptine mono-oxalate Form A of claim 4, wherein the crystalline form exhibits an XRPD pattern substantially the same as Figure 10.
14. The anhydrous crystalline tianeptine mono-oxalate Form A of claim 4,
5 characterized by an XRPD pattern exhibiting at least four of the peaks shown in Fig. 10.
15. The anhydrous tianeptine oxalate crystalline form of claim 4, wherein the crystalline form is tianeptine hemi-oxalate Form A and tianeptine mono-oxalate Form A.
- 10 16. The anhydrous tianeptine oxalate crystalline form of claim 15, wherein the crystalline form exhibits an XRPD pattern comprising at least one peak selected from the group consisting of about 10.2 and 10.5 degrees 2θ .
17. The compound of claim 16, wherein the crystalline form exhibits an XRPD
15 pattern further comprising at least one peak selected from the group consisting of about 7.5, 8.3, 10.2, 10.5, 11.9, 14.7, 16.2, 16.3, 17.9, 18.7, 21.0, 21.7, and 22.1 degrees 2θ .
18. The anhydrous crystalline tianeptine oxalate form of claim 15, wherein the crystalline form exhibits an XRPD pattern substantially the same as Figure 9.
- 20 19. The anhydrous tianeptine oxalate crystalline form of claim 4, wherein the crystalline form is tianeptine mono-oxalate Form B.
20. The anhydrous crystalline tianeptine oxalate form of claim 19, wherein the
25 crystalline form exhibits an XRPD pattern substantially the same as Figure 14.
21. The pharmaceutical composition of claim 6, wherein the composition is in a solid form, a liquid form, a suspension form, a sustained release form, a delayed release form, or an extended release form.

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22. The co-crystal of claim 3, wherein the co-crystal is a mixture of crystalline tianeptine hemi-oxalate Form A salt and tianeptine mono-oxalate Form A, tianeptine mono-oxalate Form B, or a combination thereof.

- 5 23. The co-crystal of claim 4, wherein the co-crystal is anhydrous crystalline tianeptine hemi-oxalate Form A, tianeptine mono-oxalate Form A, tianeptine mono-oxalate Form B, or a combination thereof.