What is claimed is:

1. A rifaximin polymorph Form kappa, wherein the polymorph Form kappa exhibits an X-ray powder diffraction pattern having characteristic peaks expressed in degrees 2θ at

5.41 – 5.65, 6.45 – 6.67, 6.83 – 6.94, 7.03 – 7.06, and 7.52 – 7.56;

6.45 – 6.67, 6.83 – 6.94, 7.03 – 7.06, 7.68 – 7.78, and 18.46 – 18.61;

5.41 – 5.65, 6.45 – 6.67, 6.83 – 6.94, 7.03 – 7.06, 7.52 – 7.56, and 18.46 – 18.61; or

6.45 – 6.67, 6.45 – 6.67, 6.83 – 6.94, 7.03 – 7.06, 7.68 – 7.78, and 18.46 – 18.61.

2. The rifaximin polymorph Form kappa according to claim 1, containing less than 5% by weight total impurities.

3. The rifaximin polymorph Form kappa according to claim 1, wherein the compound is at least 50% pure, or at least 75% pure, or at least 80% pure, or at least 90% pure, or at least 95% pure, or at least 98% pure.

4. A pharmaceutical composition comprising the rifaximin polymorph Form kappa according to claim 1; and a pharmaceutically acceptable carrier.

5. The composition according to claim 4, wherein the rifaximin Form kappa is formulated as coated or uncoated tablets, hard or soft gelatin capsules, sugar-coated pills, lozenges, wafer sheets, pellets or powders in sealed packets.

6. A rifaximin:piperazine cocrystal 1, wherein the rifaximin:piperazine cocrystal 1 exhibits an X-ray powder diffraction pattern having characteristic peaks expressed in degrees 2θ at

6.58, 7.49, 18.15, and 20.21; or

5.74, 6.58, 7.49, 18.15, and 20.21.

7. The rifaximin:piperazine cocrystal 1 according to claim 6, containing less than 5% by weight total impurities.

8. The rifaximin:piperazine cocrystal 1 according to claim 6, wherein the compound is at least 50% pure, or at least 75% pure, or at least 80% pure, or at least 90% pure, or at least 95% pure, or at least 98% pure.

9. A pharmaceutical composition comprising the rifaximin:piperazine cocrystal 1 according to claim 6; and a pharmaceutically acceptable carrier.

10. The composition according to claim 9, wherein the rifaximin:piperazine cocrystal 1 is formulated as coated or uncoated tablets, hard or soft gelatin capsules, sugar-coated pills, lozenges, wafer sheets, pellets or powders in sealed packets.

11. A rifaximin:piperazine cocrystal 2, wherein the rifaximin:piperazine cocrystal 1 exhibits an X-ray powder diffraction pattern having characteristic peaks expressed in degrees 2θ at

5.58, 6.45, 7.19, and 7.29; or

5.58, 6.45, 7.19, 7.29, and 8.27.

12. The rifaximin:piperazine cocrystal 2 according to claim 11, containing less than 5% by weight total impurities.

13. The rifaximin:piperazine cocrystal 2 according to claim 11, wherein the compound is at least 50% pure, or at least 75% pure, or at least 80% pure, or at least 90% pure, or at least 95% pure, or at least 98% pure.

14. A pharmaceutical composition comprising the rifaximin:piperazine cocrystal 2 according to claim 11; and a pharmaceutically acceptable carrier.

15. The composition according to claim 14, wherein the rifaximin:piperazine cocrystal 2 is formulated as coated or uncoated tablets, hard or soft gelatin capsules, sugar-coated pills, lozenges, wafer sheets, pellets or powders in sealed packets.

16. A rifaximin polymorph Form kappa, wherein the polymorph Form kappa exhibits an X-ray powder diffraction pattern having characteristic peaks expressed in degrees 2θ at 6.83-6.94 (+/- 0.20), 7.52-7.56 (+/- 0.20), 7.68-7.78 (+/- 0.20) and 8.30-8.34 (+/- 0.20).

17. The rifaximin polymorph Form kappa according to claim 16, containing less than 5% by weight total impurities.

18. The rifaximin polymorph Form kappa according to claim 16, wherein the compound is at least 50% pure, or at least 75% pure, or at least 80% pure, or at least 90% pure, or at least 95% pure, or at least 98% pure.

19. A pharmaceutical composition comprising the rifaximin polymorph Form kappa according to claim 16; and a pharmaceutically acceptable carrier.

20. The composition according to claim 19, wherein the rifaximin Form kappa is formulated as coated or uncoated tablets, hard or soft gelatin capsules, sugar-coated pills, lozenges, wafer sheets, pellets or powders in sealed packets.