Claims

1. A package comprising:

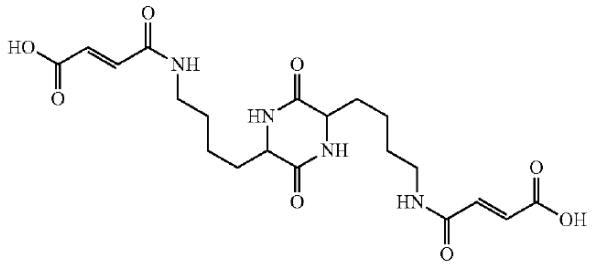
a blistered base sheet including one or more cavities wherein each of the one or more cavities is configured to hold a cartridge that includes a container and a lid, wherein the cavities include a dome structure configured to hold the container and a shelf configured to hold the lid.

2. The package of claim 1, wherein the one or more cartridges are configured to contain a pharmaceutical formulation comprising an active ingredient and a diketopiperazine.

3. The package of claim 2, wherein the active ingredient selected from the group consisting of insulin, glucagon like peptide 1, glucagon, oxytocin, oxyntomodulin, peptide YY, sumatriptan, a peptidyl peptidase IV inhibitor, parathyroid hormone, a neurotransmitter agonist, a neurotransmitter antagonist molecule, deoxyribonuclease I, active fragments thereof, analogs thereof, or a combination thereof.

4. The package of claim 2, wherein the diketopiperazine is bis-3,6-(N-fumaryl-4-aminobutyl)-2,5-diketo-diketopiperazine.

5. The package of claim 2, wherein the diketopiperazine is



6. The package of claim 1, wherein the cartridge includes a container and a lid or top that extends over the container.

7. The package of claim 2, wherein the active ingredient is a peptide, protein, a small molecule or a nucleic acid.

8. The package of claim 2, wherein the active ingredient is a neurotransmitter agonist or a neurotransmitter antagonist molecule.

9. The package of claim 2, wherein the active ingredient is insulin.

10. The package of claim 2, wherein the active ingredient is glucagon like peptide 1.

11. The package of claim 2, wherein the active ingredient is glucagon.

12. The package of claim 2, wherein the active ingredient is at least one of oxytocin, oxyntomodulin, and peptide YY.

13. The package of claim 12, wherein the active ingredient is oxytocin.

14. The package of claim 12, wherein the active ingredient is oxyntomodulin.

15. The package of claim 12, wherein the active ingredient is peptide YY.

16. The package of claim 1, wherein the blistered base sheet comprises at least three layers selected from polyvinyl chloride and polychlorotrifluoroethylene.

17. The package of claim 16, wherein the polychlorotrifluoroethylene layer forms the middle layer of the blistered base sheet having a thickness of about 230 μm to about 720 μm in thickness.

18. The package of claim 1, further comprising a lid

19. The package of claim 18, wherein the lid comprises a foil comprising one or more layers of selected from aluminum, plastic polymer or co-polymer.

20. The package of claim 18, wherein the lid has a thickness of about 10 μm to 75 μm or a thickness greater than 100 μm.