WHAT IS CLAIMED IS:

1. A multilayer thin film medical device, comprising:
a first layer comprising a polymer ~~and a pore forming agent~~;
a bioactive agent; and
a second layer ~~in contact with the bioactive agent~~comprising a polymer;
wherein the bioactive agent is positioned between the first layer and the second layer,
wherein the first and the second layers are in contact with each other at a periphery of the multilayer thin film medical device thereby sealing the bioactive agent inside the multilayer thin film medical device,
wherein the bioactive agent is not positioned between the first and the second layers at the periphery of the multilayer thin film medical device, and
wherein the multilayer thin film medical device is configured to release the bioactive agent from surface of the first layer and the second layer.

2. The multilayer thin film medical device of claim 1, wherein the device comprises a furled structure.

3. The multilayer thin film medical device of claim 2, wherein the furled structure is substantially cylindrical.

4. The multilayer thin film medical device of claim 2, wherein the furled structure is substantially frusto-conical.

5. The multilayer thin film medical device of claim 1, wherein the device comprises an unfurled structure.

6. The multilayer thin film medical device of claim 5, wherein the unfurled structure comprises a substantially circular peripheral edge.

7. The multilayer thin film medical device of claim 1, wherein the second layer is porous or non-porous.

8. The multilayer thin film medical device of claim 1, further comprising a third nanostructured porous layer positioned between the first layer and the bioactive agent.

9. The multilayer thin film medical device of claim 8, wherein the third nanostructured porous layer has an average pore size of between about 1 nm and about 100 nm.

~~10. The multilayer thin film medical device of claim 1, wherein the first layer and the second layer are in contact with each other at the edges of the multilayer thin film thereby sealing the bioactive drug inside the multilayer thin film.~~

~~11~~10. The multilayer thin film medical device of claim 1, wherein the polymer comprises a biodegradable polymer.

~~12~~11. The multilayer thin film medical device of claim ~~11~~10, wherein the biodegradable polymer is PLA, PGA, PCL, PLGA, PLCL, or a combination thereof.

~~13. The multilayer thin film medical device of claim 1, wherein the pore forming agent comprises gelatin, PEG, chitosan, or agarose.~~

~~14. The multilayer thin film medical device of claim 1, wherein the polymer and pore forming agent in the first layer are present in a ratio between about 1:5 and about 99:1.~~

~~15. The multilayer thin film medical device of claim 14, wherein the ratio of polymer to pore forming agent in the first layer is about 9:1.~~

~~16. The multilayer thin film medical device of claim 1, wherein the second layer comprises a polymer.~~

~~17. The multilayer thin film medical device of claim 16, wherein the polymer is a biodegradable polymer.~~

~~18~~12. The multilayer thin film medical device of claim 1, wherein the bioactive agent is disposed in a plurality of reservoirs located across one surface of the second layer.

~~19~~13. The multilayer thin film medical of claim 1, wherein the second layer comprises a plurality of reservoirs located across one surface of the second layer, wherein a first reservoir of the plurality of reservoirs comprises the bioactive agent and a second reservoir of the plurality of reservoirs comprises another bioactive agent.

~~20~~14. The multilayer thin film medical device of claim 1, wherein the bioactive agent is present in a lyophilized form.

~~21~~15. The multilayer thin film medical device of claim 1, wherein the bioactive agent comprises a thin film of lyophilized material.

~~22~~16. The multilayer thin film medical of claim 8, comprising a fourth ~~non-porous~~ layer in contact with the second layer, a fifth layer comprising a reservoir comprising another bioactive agent in contact with the fourth ~~non-porous~~ layer, a sixth nanostructured layer

in contact with the fifth layer, and a seventh micro-porous layer, ~~comprising a polymer and a pore forming agent,~~ in contact with sixth nanostructured layer.

~~23~~17. The multilayer thin film medical device of claim 8, wherein the bioactive agent is disposed in a plurality of reservoirs located across one surface of the second layer.

~~24~~18. The multilayer thin film medical of claim 8, wherein the second layer comprises a plurality of reservoirs located across one surface of the second layer, wherein a first reservoir of the plurality of reservoirs comprises the bioactive agent and a second reservoir of the plurality of reservoirs comprises another bioactive agent.

~~25. The multilayer thin film medical device of claim 1, wherein the bioactive agent is a protein therapeutic, a small molecule drug, a large molecule drug or an aptamer.~~

~~26. The multilayer thin film medical device of claim 25, wherein the bioactive agent is a protein therapeutic selected from ranibizumab, bevacizumab, trastuzumab, rituximab, gentuzumab ozogamicin and cetuximab.~~

~~27. The multilayer thin film medical device of claim 25, wherein the bioactive agent is a small molecule therapeutic selected from steroids, rapamycin, and prostaglandin.~~

~~28. A multilayer thin film medical device, comprising:~~

~~a first porous layer comprising a polymer;~~

~~a bioactive agent; and~~

~~a second layer in contact with the bioactive agent ;~~

~~wherein the bioactive agent is positioned between the first porous layer and the second layer.~~

~~29. The multilayer thin film medical device of claim 28, wherein the device comprises a furled structure.~~

~~30. The multilayer thin film medical device of claim 28, wherein the furled structure is substantially cylindrical.~~

~~31. The multilayer thin film medical device of claim 28, wherein the furled structure is substantially frusto-conical.~~

32. The multilayer thin film medical device of claim 28, wherein the device comprises an unfurled structure.

33. The multilayer thin film medical device of claim 32, wherein the unfurled structure comprises a substantially circular peripheral edge.

34. The multilayer thin film medical device of claim 28, wherein the second layer is porous or non-porous.

35. The multilayer thin film medical device of claim 28, further comprising a third nanostructured porous layer positioned between the first porous layer and the bioactive agent.

36. The multilayer thin film medical device of claim 35, wherein the third nanostructured porous layer has an average pore size of between about 1 nm and about 100 nm.

37. The multilayer thin film medical device of claim 28, wherein the polymer is a biodegradable polymer.

38. The multilayer thin film medical device of claim 37, wherein the biodegradable polymer is selected from the group consisting of a PLA, PGA, PCL, PLGA, PLCL, and combinations or copolymers thereof.

39. The multilayer thin film medical device of claim 28, wherein the % porosity of the first porous layer is between about 20% and about 0.01%.

40. The multilayer thin film medical device of claim 28, wherein the first porous layer has an average pore size of 30 μm or less.

41. The multilayer thin film medical device of claim 28, wherein the device has an area between 0.7 mm^2 and 2000 mm^2.

42. The multilayer thin film medical device of claim 28, wherein the second layer is biodegradable.

43. The multilayer thin film medical device of claim 36, wherein the second layer comprises PCL.

44. The multilayer thin film medical device of claim 28, wherein the bioactive agent is disposed in a plurality of reservoirs located across one surface of the second layer.

45. The multilayer thin film medical of claim 28, wherein the second layer comprises a plurality of reservoirs located across one surface of the second layer, wherein a first reservoir of the plurality of reservoirs comprises the bioactive agent and a second reservoir of the plurality of reservoirs comprises another bioactive agent.

46. The multilayer thin film medical device of claim 28, wherein the bioactive agent is present in a lyophilized form.

47. The multilayer thin film medical device of claim 28, wherein the bioactive agent comprises a thin film of lyophilized material.

48. The multilayer thin film medical of claim 35, comprising a fourth non-porous layer in contact with the second layer, a fifth layer comprising a reservoir comprising another bioactive agent in contact with the fourth non-porous layer, a sixth nanostructured layer in contact with the fifth layer, and a seventh micro-porous layer in contact with sixth nanostructured layer.

49. The multilayer thin film medical device of claim 35, wherein the bioactive agent is disposed in a plurality of reservoirs located across one surface of the second layer.

50. The multilayer thin film medical of claim 35, wherein the second layer comprises a plurality of reservoirs located across one surface of the second layer, wherein a first reservoir of the plurality of reservoirs comprises the bioactive agent and a second reservoir of the plurality of reservoirs comprises another bioactive agent.

51. The multilayer thin film medical device of claim 28, wherein the bioactive agent is a protein therapeutic, a small molecule drug, a large molecule drug or an aptamer.

52. The multilayer thin film medical device of claim 28, wherein the bioactive agent is a protein therapeutic selected from ranibizumab, bevacizumab, trastuzumab, rituximab, gentuzumab ozogamicin and cetuximab.

53. The multilayer thin film medical device of claim 28, wherein the bioactive agent is a small molecule therapeutic selected from steroids, rapamycin, or prostaglandin.

54. A method of localized delivery of a bioactive agent to a tissue, the method comprising:

positioning in a subject a multilayer thin film medical device comprising:

a first layer comprising a polymer and a pore forming agent;

a bioactive agent; and

a second layer in contact with the bioactive agent;

wherein the bioactive agent is positioned between the first layer and the second layer, and wherein the multilayer thin film structure is in a furled state;

unfurling the furled multilayer thin film structure upon contact with a hydrating liquid in the subject to produce an unfurled multilayer thin film structure;

dissolving the pore forming agent from the first layer of the unfurled multilayer thin film structure to produce a porous first layer; and

releasing the bioactive agent from the medical device through the porous first layer to locally deliver the bioactive agent to the tissue.

55. The method of claim 54, wherein the unfurling and dissolving occurs simultaneously.

56. The method of claim 54, wherein the unfurling and dissolving occurs sequentially.

57. The method of claim 54, wherein the releasing locally delivers an effective amount of the bioactive agent over an extended period of time.

58. The method of claim 54, wherein the releasing of the bioactive agent from the medical device is substantially zero order.

59. The method of claim 54, wherein the positioning is in the eye(s) of the subject.61.

60. The method of claim 54, wherein the positioning comprises injecting the furled device into the eye(s) of the subject.

61. The method of claim 60, wherein the injecting comprises intravitreal injection.

62. The method of claim 60, wherein the injecting comprises subretinal injection.

~~63. The method of claim 54, wherein the bioactive agent is a protein therapeutic, a~~ small molecule drug, a large molecule drug or an aptamer.

64. The method of claim 63, wherein the bioactive agent is a protein therapeutic selected from ranibizumab, bevacizumab, trastuzumab, rituximab, gentuzumab ozogamicin and cetuximab.

65. The method of claim 54, wherein the polymer is a biodegradable polymer.

66. The method of claim 65, wherein the biodegradable polymer is selected from the group consisting of a PLA, PGA, PCL, PLGA, PLCL, and combinations thereof.

67. The method of claim 54, wherein the pore forming agent is selected from the group consisting of gelatin, PEG, chitosan, or agarose.

68. The method of claim 54, wherein the second layer is porous or non-porous.

69. The method of claim 54, wherein the ratio of biodegradable polymer to pore forming agent in the first layer of the furled multilayer thin film structure is between about 1:5 and about 99:1.

70. The method of claim 69, wherein the ratio of biodegradable polymer to pore forming agent in the first layer of the furled multilayer thin film structure is about 9:1.

71. The method of claim 54, wherein the % porosity of the porous first layer of the unfurled multilayer thin film structure is between about 20% and about 0.01%.

72. The method of claim 54, wherein the porous first layer of the unfurled multilayer thin film structure has an average pore size of 30 μm or less.

73. The method of claim 72, wherein the porous first layer of the unfurled multilayer thin film structure has an average pore size of 10 μm or less.

74. The method of claim 54, wherein the unfurled multilayer thin film structure has an area between 0.7 mm^2 and 2000 mm^2.

75. The method of claim 54, wherein the multilayer thin film medical device further ~~comprises a third nanostructured porous layer positioned between the first layer and the~~

reservoir of the bioactive agent, wherein the third nanostructured porous layer comprises a biodegradable polymer.

76. The method of claim 75, wherein the third nanostructured porous layer has an average pore size of between about 1 nm and about 100 nm.

77. The method of claim 75, wherein the biodegradable polymer is selected from the group consisting of a PLA, PGA, PCL, PLGA, PLCL, and combinations thereof.

78. The method of claim 54, wherein the second layer is biodegradable.

79. A method of preparing a medical device, the method comprising:

sealing together a first thin film layer comprising a polymer and a pore forming agent and a second layer comprising a bioactive agent; and

processing the multilayer thin film structure for a sufficient period of time to allow the multilayer thin film structure to form a furled structure.

80. The method of claim 79, wherein the sealing is performed by heating defined areas of the first and second layers.

81. The method of claim 80, wherein the heating is performed using an annulus.

82. The method of claim 80, wherein the heating comprises melting the first and second thin film layers.

83. The method of claim 79, wherein the bioactive agent of is disposed on the second layer prior to the sealing.

84. The method of claim 79, wherein the polymer is a biodegradable polymer.

85. The method of claim 84, wherein the biodegradable polymer is selected from the group consisting of a PLA, PGA, PCL, PLGA, PLCL, and combinations thereof.

86. The method of claim 79, wherein the pore forming agent is gelatin, PEG, chitosan or agarose.

87. The method of claim 79, wherein the second layer is porous or non-porous.

88. The method of claim 79, wherein the ratio of polymer to pore forming agent in the first thin film layer is between about 1:5 and about 99:1.

89. The method of claim 88, wherein the ratio of polymer to pore forming agent in the first thin film layer is about 9:1.

90. The method of claim 79, wherein the second thin film layer is biodegradable.

91. The method of claim 72, wherein the second thin film layer comprises a polymer selected from the group consisting of a PLA, PGA, PCL, PLGA, PLCL, and combinations thereof.

92. The method of claim 79, wherein the bioactive agent is a protein therapeutic, a small molecule drug, a large molecule drug or an aptamer.

93. The method of claim 92, wherein the bioactive agent is a protein therapeutic selected from ranibizumab, bevacizumab, trastuzumab, rituximab, gentuzumab ozogamicin and cetuximab.

94. The multilayer thin film medical device of claim 92, wherein the bioactive agent is a small molecule therapeutic selected from steroids, rapamycin, prostaglandin, etc.

95. A method of preparing a medical device, the method comprising:

fabricating a first nanoporous thin film layer over a nanotemplate;

fabricating a second thin film layer comprising a polymer and a pore forming agent over the first nanoporous thin film layer;

removing the first and second thin film layers from the nanotemplate;

combining the first and second layers with a third thin film layer comprising a bioactive agent to produce a multilayer thin film structure, wherein the first layer is positioned between the second layer and the bioactive agent;

sealing the multilayer thin film structure to bond the first thin film layer to the third thin film layer thereby sealing the bioactive agent within the multilayer thin film structure; and

processing the multilayer thin film structure for a sufficient period of time to allow the multilayer thin film structure to form a furled structure.

96. The method of claim 95, wherein the sealing is performed by using heat

97. The method of claim 95, wherein the sealing is performed by using an annulus to heat defined regions of the thin film layers.

98. The method of claim 95, wherein the sealing is performed by using a laser to heat defined regions of the thin film layers.

99. The method of claim 95, wherein the polymer is biodegradable.

100. The method of claim 99, wherein the biodegradable polymer is selected from the group consisting of a PLA, PGA, PCL, PLGA, PLCL, and a combination thereof.

101. The method of claim 95, wherein the pore forming agent is gelatin, PEG, chitosan, or agarose.

102. The method of claim 95, wherein the fabricating the second thin film layer comprising a polymer and a pore forming agent over the first nanoporous thin film layer, further comprises removing the pore forming agent to generate a microporous second thin film layer.

103. The method of claim 95, wherein the ratio of polymer to pore forming agent in the second thin film layer is between about 1:5 and about 99:1.

104. The method of claim 103, wherein the ratio of polymer to pore forming agent in the second thin film layer is about 9:1.

105. The method of claim 103, wherein the third thin film layer is porous or non-porous and is biodegradable.

106. The method of claim 104, wherein the third thin film layer comprises PCL.

107. The method of claim 95, wherein the bioactive agent is a protein therapeutic, a small molecule drug, a large molecule drug or an aptamer.

108. The method of claim 106, wherein the bioactive agent is a protein therapeutic selected from ranibizumab, bevacizumab, trastuzumab, rituximab, gentuzumab ozogamicin and cetuximab.

109. The method of claim 95, wherein the third non-porous thin film layer comprises a plurality of reservoirs and the method comprises depositing the bioactive agent in the plurality of reservoirs.

110. The method of claim 95, wherein third non-porous thin film layer comprises a plurality of reservoirs and the method comprises depositing the bioactive agent in a first reservoir of the plurality of reservoirs and depositing another bioactive agent in a second reservoir of the plurality of reservoir.

111. A kit for local delivery of a bioactive agent to a subject, the kit comprising a multilayer thin film medical device comprising:

a first layer comprising a biodegradable polymer and a pore forming agent;

a bioactive agent; and

a second layer in contact with the bioactive agent;

wherein the bioactive agent is positioned between the first layer and the second layer.

112. The kit of claim 111, wherein the device comprises a furled structure.

113. The kit of claim 111, further comprising a syringe capable of injecting the device in the subject.

114. The kit of claim 113, wherein the syringe contains the device and a carrier fluid.

115. A multilayer thin film medical device, comprising:

a first non-porous layer;

a bioactive agent; and

a second non-porous layer in contact with the bioactive agent;

wherein the bioactive agent is positioned between the first layer and the second layer.

116. The multilayer thin film medical device of claim 115, wherein the device comprises a furled structure.

117. The multilayer thin film medical device of claim 116, wherein the furled structure is substantially cylindrical.

118. The multilayer thin film medical device of claim 116, wherein the furled structure is substantially frusto-conical.

119. The multilayer thin film medical device of claim 115, wherein the device comprises an unfurled structure.

120. The multilayer thin film medical device of claim 119, wherein the unfurled structure comprises a substantially circular peripheral edge.

121. The multilayer thin film medical device of claim 119, wherein the unfurled structure is planar in shape.

122. The multilayer thin film medical device of claim 115, wherein the first layer and the second layer are in contact with each other at the edges of the multilayer thin film thereby sealing the bioactive agent inside the multilayer thin film.

123. The multilayer thin film medical device of claim 115, wherein the first non-porous layers comprises a biodegradable polymer.

124. The multilayer thin film medical device of claim 123, wherein the biodegradable polymer is PLA, PGA, PCL, PLGA, PLCL, or a combination thereof..

125. The multilayer thin film medical device of claim 115, wherein the second non-porous layers comprises a biodegradable polymer.

126. The multilayer thin film medical device of claim 125, wherein the biodegradable polymer is PLA, PGA, PCL, PLGA, PLCL, or a combination thereof.

127. The multilayer thin film medical device of claim 115, wherein the first non-porous layers comprises a non-biodegradable polymer.

128. The multilayer thin film medical device of claim 115, wherein the second non-porous layers comprises a non-biodegradable polymer.

129. The multilayer thin film medical device of claim 115, wherein the bioactive agent is disposed in a reservoir located on a surface of the second non-porous layer.

130. The multilayer thin film medical device of claim 129, wherein the reservoir comprises another bioactive agent.

131. The multilayer thin film medical of claim 115, wherein the bioactive agent is disposed in a plurality of reservoirs located on a surface of the second non-porous layer.

132. The multilayer thin film medical of claim 131, wherein the plurality of reservoirs further comprise another bioactive agent.

133. The multilayer thin film medical of claim 115, wherein the second layer comprises a plurality of reservoirs located across one surface of the second layer, wherein a first reservoir of the plurality of reservoirs comprises the bioactive agent and a second reservoir of the plurality of reservoirs comprises another bioactive agent.

134. The multilayer thin film medical device of claim 115, wherein the bioactive agent is present in a lyophilized form.

135. The multilayer thin film medical device of claim 115, wherein the bioactive agent is a small molecule.

136. The multilayer thin film medical device of claim 135, wherein the small molecule is an organic compound.

137. The multilayer thin film medical device of claim 136, wherein the organic compound is rapamycin, prostaglandin, or a steroid.

19. The multilayer thin film medical device of claim 1, wherein the first and second layers are formed from a single film folded over the bioactive agent and sealed at the periphery.

20. The multilayer thin film medical device of claim 1, wherein the bioactive agent is a small molecule drug.

21. The multilayer thin film medical device of claim 20, wherein the small molecule drug is selected from steroids, rapamycin, or prostaglandin.

22. The multilayer thin film medical device of claim 1, wherein the first layer and/or the second layer comprises engineered pores.

23. The multilayer thin film medical device of claim 22, wherein the engineered pores are nanopores.

24. The multilayer thin film medical device of claim 22, wherein the engineered pores are micropores.

25. The multilayer thin film medical device of claim 22, wherein the bioactive is a protein therapeutic, a small molecule drug, a large molecule drug or an aptamer.

26. The multilayer thin film medical device of claim 25, wherein the bioactive agent is a protein therapeutic selected from ranibizumab, bevacizumab, trastuzumab, rituximab, gentuzumab ozogamicin and cetuximab.

27. The multilayer thin film medical device of claim 25, wherein the bioactive agent is a small molecule drug is selected from steroids, rapamycin, or prostaglandin.