

WHAT IS CLAIMED IS:

1. A device comprising at least two macro-capsules encompassing a plurality of therapeutic cells, the macro-capsule comprising a cylindrical shape and a diameter of at least 1.5 mm.
2. The device of claim 1, wherein the macro-capsules comprise at least one barrier, the barrier comprising:
 - (a) cellulose sulfate and glucomannan or glucomannan sulfate; or
 - (b) sodium alginate.
3. The device of claim 1 or claim 2, wherein the macro-capsules further comprise a second barrier, wherein the first barrier is encompassed within the second barrier.
4. The device of any one of claims 1-3, wherein the macro-capsules are attached to a piece of surgical mesh.
5. The device of claim 4, wherein the surgical mesh is nylon.
6. The device of claim 4, wherein the surgical mesh is round.
7. The device of claim 4, wherein the surgical mesh is oblong.
8. The device of claim 4, wherein the surgical mesh comprises a tab for attaching the device to a suitable site within the host.
9. The device of any one of claims 4-8, wherein a plurality of macro-capsules are attached to the surgical mesh.
10. The device of claim 9, wherein the macro-capsules are arranged radially around the mesh.
11. The device of claim 9, wherein the macro-capsules are arranged in apposition along the mesh.
12. The device of claim 9, wherein the macro-capsules are arranged to extend on opposite sides of the mesh.

13. A method of treating diabetes in a subject in need thereof, comprising implanting into a subject with diabetes a device according to any one of claims 1-12, wherein the device is implanted into the greater omentum or the peritoneal cavity of the subject.
14. A device according to any one of claims 1-12, for use in treating diabetes in a subject in need thereof.
15. Use of the device according to any one of claims 1-12 in the manufacture of a medicament for the treatment of diabetes.
16. A composition comprising a macro-capsule encompassing a plurality of therapeutic cells, the macro-capsule comprising at least one barrier, the barrier comprising:
 - (a) cellulose sulfate and glucomannan or glucomannan sulfate; or
 - (b) sodium alginate;wherein the macro-capsule is attached to a piece of surgical mesh to which at least one other macro-capsule is also attached.
17. The composition of claim 16, wherein the therapeutic cells are insulin-producing cells.
18. The composition of claim 16 or claim 17 further comprising a second barrier.
19. The composition of claim 18, wherein the second barrier comprises cellulose sulfate and glucomannan or glucomannan sulfate.
20. The composition of claim 18, wherein the second barrier does not comprise glucomannan or glucomannan sulfate.
21. The composition of any one of claims 16-20, wherein the diameter of the macro-capsule is at least 1.5 mm.
22. The composition of any one of claims 16-21, wherein the diameter of the macro-capsule is at least 2.0 mm.
23. The composition of any one of claims 16-22, wherein the sodium alginate is polymerized with divalent cations barium (BaCl_2) or calcium (CaCl_2).

24. The composition of any one of claims 16-22, wherein the cellulose sulfate was polymerized with poly(diallyldimethylammonium chloride) (pDADMAC).
25. The composition of any one of claims 24, wherein the macro-capsule was washed with polymethylene-co-guanidine (PMCG) after polymerization with pDADMAC.
26. The composition of any one of claims 16-25, wherein the macro-capsule is at least about 11cm in length.
27. The composition of any one of claims 16-26, wherein the macro-capsule contains at least about 50,000 cells per cm.
28. The composition of any one of claims 16-27, wherein the macro-capsule is cylindrical.
29. A composition comprising a macro-capsule encompassing a plurality of therapeutic cells, the macro-capsule comprising at least a first barrier and a second barrier, wherein the first barrier is encompassed within the second barrier, wherein the macro-capsule has a diameter of at least 1.5 mm, wherein the macro-capsule is attached to a piece of surgical mesh to which at least one other macro-capsule is also attached.
30. The composition of claim 29, wherein the diameter of the macro-capsule is at least 2.0 mm.
31. The composition of claim 29 or claim 30, wherein the therapeutic cells are insulin-producing cells.
32. The composition of any one of claims 29-31, wherein the second barrier comprises cellulose sulfate and glucomannan or glucomannan sulfate.
33. The composition of any one of claims 29-32, wherein both the first and second barrier comprise cellulose sulfate and glucomannan sulfate.
34. The composition of any one of claims 32-33, wherein the cellulose sulfate was polymerized with pDADMAC.
35. The composition of claim 34, wherein the macro-capsule was washed with PMCG after polymerization with pDADMAC.

36. The composition of any one of claims 29-31, wherein the second barrier does not comprise glucomannan or glucomannan sulfate.
37. The composition of any one of claims 29-32, wherein the first barrier comprises sodium alginate.
38. The composition of claim 37, wherein the sodium alginate is polymerized with divalent cations barium (BaCl_2) or calcium (CaCl_2).
39. The composition of any one of claims 29-38, wherein the macro-capsule is at least about 11cm in length.
40. The composition of any one of claims 29-39, wherein the macro-capsule contains at least about 50,000 cells per cm.
41. The composition of any one of claims 29-40, wherein the macro-capsule is cylindrical.
42. A composition comprising a macro-capsule encompassing a plurality of therapeutic cells, the macro-capsule comprising a cylindrical shape and a diameter of at least 1.5 mm, wherein the macro-capsule is attached to a piece of surgical mesh to which at least one other macro-capsule is also attached.
43. The composition of claim 42, wherein the macro-capsule comprises at least a first barrier and a second barrier, wherein the first barrier is encompassed within the second barrier.
44. The composition of claim 43, wherein the first barrier comprises:
 - (a) cellulose sulfate and glucomannan or glucomannan sulfate; or
 - (b) sodium alginate.
45. The composition of claim 43 or claim 44, wherein the second barrier comprises cellulose sulfate and glucomannan or glucomannan sulfate.
46. The composition of any one of claims 42-45, wherein the therapeutic cells are insulin-producing cells.
47. The composition of any one of claims 42-46, wherein the macro-capsule is at least about 11cm in length.

48. The composition of any one of claims 42-47, wherein the macro-capsule contains at least about 50,000 cells per cm.