

dized cellulose may be applied to the defect to stop the bleeding and to fill in the defect. A polymer mixture prepared according to Example 1 may then be applied directly over the surface of the Surgicel™ support layer. The moisture from the tissue defect will cause the liquid polymer to partially solidify to form the same type of implant precursor as described in Example 1. The soft tissue is then replaced and sutured into place. The implant precursor thus formed will further solidify to a solid barrier matrix.

EXAMPLE 9

Treatment with an Implant Precursor Comprising a Biological Agent

A polymer mixture may be prepared as described in Example 1. To this mixture may be added 5% by weight doxycycline hyclate. An implant article may then be prepared in vivo from the drug/polymer mixture as described in Example 1. The implant article may be placed into a periodontal defect as described in Example 6. The doxycycline will be dispensed from the solid barrier implant as it degrades and provide protection against bacterial infection.

EXAMPLE 10

In Vivo Formation of an Implant Precursor in a Bone

A polymer mixture may be prepared as described above in Example 1.

A thigh bone of an anesthetized male rat may be surgically incised, and the surface of the incision of the bone tissue may be coated with a thin layer of a phosphate buffered saline (PBS) solution. The polymer mixture (about 1-3 ml) may be dispensed from a syringe or eye dropper onto the surface of the water-coated bone tissue. The buffer solution (about 1-3 ml) may be dispensed onto the layer of the polymer mixture. After 2-5 minutes, the polymer mixture will coagulate to form a gelatinous outer layer with a liquid content of an implant precursor.

The implant precursor may be covered with tissue, and the tissue sutured in place. The implant precursor will gradually solidify to a solid matrix. After 5-10 days, the implant site may be reopened, and the implant article mass should have been displaced by the ingrowth of bone tissue.

What is claimed is:

1. A kit comprising, in combination:

- (a) an apparatus for forming an implant precursor ex vivo, comprising:
 - (i) support means for maintaining a polymer composition thereon during formation of an implant precursor; and
 - (ii) means for compressing the polymer composition during formation of the implant precursor; the support means, the compressing means, or both composed of a material having a hydrophilicity effective to maintain an aqueous medium thereon;
- (b) a vial containing the polymer composition comprising a biocompatible, biodegradable, water-coagulable thermoplastic polymer, and a pharmaceutically-acceptable, water soluble organic solvent; and
- (c) at least one item selected from the group consisting of: means for hinging the support means to the compressing means; the hinging means being attachable along one edge of the support means and the compressing means; wherein the compressing means may be pivoted and placed onto the polymer composition on the support means;

at least one spacer means for maintaining a gap between the support means and compressing means of the apparatus when the compressing mean is pivoted and placed on the support means;

a vial containing an aqueous medium.

2. The kit according to claim 1, further comprising:

means for lifting and holding the formed implant precursor;

means for measuring dimensions of a tissue defect or the implant precursor;

a gridded means for measuring the dimensions of the implant precursor;

means for cutting the implant precursor; or

means for removing the aqueous medium from the implant precursor surface.

3. The kit according to claim 1, wherein the material is selected from the group consisting of a porous plastic, sintered stainless steel, porcelain and glass.

4. The kit according to claim 1, wherein the material is a gamma resistant polypropylene.

5. The kit according to claim 1, wherein the material is a blend of a hydrophobic polymer and a surfactant effective to provide the material with a hydrophilic character.

6. The kit according to claim 1, wherein the material is a non-porous plastic in combination with a layer of material capable of absorbing the aqueous medium.

7. The kit according to claim 1, further comprising means for spacing the support means from the compressing means.

8. The kit according to claim 1, wherein the support means, the compressing means, or both, include a recessed area having dimensions of the implant precursor.

9. The kit according to claim 1, further comprising a grid for aiding in trimming of the implant precursor to a desired dimension; the grid being affixed to a surface of the support means, the compressing means, or both.

10. The kit according to claim 1, further comprising means for latching the support means to the compressing means.

11. A kit comprising, in combination:

(a) an apparatus for forming an implant precursor, comprising:

(i) support means for maintaining a polymer composition thereon during formation of the implant precursor; and

(ii) means for compressing the polymer composition during formation of the implant precursor;

wherein the support means, the compressing means, or both are composed of a water absorptive material; and

(b) a vial containing a polymer composition comprising a biocompatible, biodegradable, water-coagulable thermoplastic polymer, and a pharmaceutically-acceptable, water-soluble organic solvent.

12. A kit comprising, in combination:

(a) an apparatus for forming an implant precursor ex vivo, comprising:

(i) a support for maintaining a polymer composition thereon during formation of an implant precursor; and

(ii) a structure for compressing the polymer composition during formation of the implant precursor;

wherein the support, the compressing structure, or both are composed of a material having a hydrophilicity effective to maintain an aqueous medium thereon; and

(b) a vial containing a mixture comprising a biocompatible, biodegradable, water-coagulable ther-