What Is Claimed Is:

1. A method of preparing a biocompatible polymeric coating comprising:

a) preparing an aqueous polymer solution by contacting and reacting:

i) methacrylic acid (MAA)

ii/) methacryloyloxyethyl phosphorylcholine (MPC); and

iii) at least one methacrylate ~~or phosphorylcholine~~ selected from the list consisting of hydroxyethyl methacrylate (HEMA), poly(ethylene glycol) monomethacrylate (PEGMA), poly(ethylene glycol) methyl ether methacrylate (MAPEG), wherein a weight percent of MPC is at least 60% and a remaining weight percent being one or more of HEMA, PEGMA and MAPEG, provided that a total amount of starting monomers ii) and iii) is 100% by weight; ~~and methacryloyloxyethyl phosphorylcholine (MPC)~~;

~~b~~) precipitating a reaction product within the aqueous polymer solution by addition of acetone to produce a clear solid polymer material;

c) dissolving the clear solid polymer material in an alcohol or water to produce a purified polymer solution;

d) preparing an aqueous polyaziridine coupling agent solution; and ~~coupling agent solution selected from the list consisting of polyaziridine, a water soluble carbodiimide, a diisocyanate or an isocyanate polymer; and~~

e~~e~~) mixing the purified polymer solution ~~with the~~with the aqueous polyaziridine coupling agent solution to form the biocompatible polymeric coating.

2. A method of applying a biocompatible polymeric coating to a substrate surface, the method comprising:

a) preparing the biocompatible polymeric coating in accordance with claim 1; and~~a) preparing an aqueous polymer solution by contacting and reacting:~~

~~i) methacrylic acid (MAA) and~~

~~ii) at least one methacrylate or phosphorylcholine;~~

~~b) preparing an aqueous coupling agent solution;~~

~~c) mixing the polymer solution with the aqueous coupling agent solution to form a coating solution; and~~

b~~d~~) contacting and reacting the coating solution with the substrate surface to coat the surface with the biocompatible polymeric coating.

3. The method of claim 2 further comprises:

ce) loading the purified polymer solution in a first syringe prior to the mixing step; and

df) loading the aqueous polyaziridine coupling agent solution in a second syringe prior to the mixing step,

wherein the mixing step includes dispensing a first volume of polymer solution from the first syringe and dispensing a second volume of coupling agent solution from the second syringe.

4. The method of claim 3 wherein the first syringe and the second syringe comprise a dual cartridge syringe.

5. The method of claim 3 wherein the first volume is the same as the second volume.

~~6. The method of claim 2 wherein the water soluble carbodiimide comprises 1-Ethyl-3-(3'-dimethylaminopropyl)carbodiimide (EDAC).~~

67. The method of claim 2 wherein a therapeutic agent solution is further added during at least one of steps ae) and bd).

7.~~8.~~ The method of claim 2 further comprising:

~~e)~~ C) pretreating the substrate surface to functionalize the substrate surface for reactivity with aqueous polyaziridine coupling agent solution and/or coating solution, wherein step ce) occurs prior to step bd).

89. ~~The method of claim 2 wherein the at least one methacrylate or phosphorylcholine includes methacryloyloxyethyl phosphorylcholine (MPC).~~

~~10. The method of claim 9 wherein the MPC comprises at least 40% of the aqueous polymer solution, by weight.~~

~~11. The method of claim 9 wherein the MPC comprises at least 60% of the aqueous polymer solution, by weight.~~

~~12.~~ A method of applying a biocompatible polymeric coating to a substrate surface, the method comprising:

a) preparing an aqueous polymer solution by contacting and reacting:

i) methacrylic acid (MAA) and

ii) ~~at least one~~ methacrylate or phosphorylcholine(MPC); and

iii) at least one methacrylate selected from the list consisting of hydroxyethyl methacrylate (HEMA), poly(ethylene glycol) monomethacrylate (PEGMA), and poly(ethylene glycol) methyl ether methacrylate (MAPEG), wherein a weight percent of MPC is at least 60% and a remaining weight percent being one or more of HEMA, PEGMA and MAPEG, provided that a total amount of starting monomers ii) and iii) is 100% by weight;

~~b)~~ precipitating a reaction product within the aqueous polymer solution by addition of acetone to produce a clear solid polymer material;

c) dissolving the clear solid polymer material in an alcohol or water to produce a purified polymer solution;

d) preparing an aqueous polyaziridine coupling agent solution;

e~~c~~) contacting and reacting the aqueous polyaziridine coupling agent solution with the substrate surface to form a primed substrate surface; and

f~~d~~) contacting and reacting the aqueous polymer solution with the primed substrate surface to coat the surface with the biocompatible polymeric coating.

13. The method of claim 12 further comprising:

g~~e~~) pretreating the substrate surface to functionalize the substrate surface for reactivity with aqueous coupling agent solution, wherein step e) occurs prior to step c).

~~14. The method of claim 12 wherein the at least one methacrylate phosphorylcholine includes methacryloyloxyethyl phosphorylcholine (MPC).~~

~~15. The method of claim 12 wherein the MPC comprises at least 40% of the aqueous polymer solution, by weight.~~

~~16. The method of claim 12 wherein the MPC comprises at least 60% of the aqueous polymer solution, by weight.~~

~~17. A biomaterial produced according to the method of claim 2.~~

~~18. A biomaterial produced according to the method of claim 12.~~