CLAIMS

1. A method of forming a biodegradable stent graft having an abluminal surface and a luminal surface, wherein the abluminal surface comprises an anti-proliferative agent and/or an anti-restenotic agent, wherein the luminal surface comprises an anti-thrombotic agent and/or a vascular growth factor, the method comprising:

depositing a water soluble layer on the abluminal surface;

contacting the biodegradable stent graft with an alcohol-based solution comprising a diamine to form amine functional groups on the luminal surface;

contacting the amine functional groups on the luminal surface with the anti-thrombotic agent and/or the vascular growth factor; and

coating the abluminal surface with the anti-proliferative agent and/or an anti-restenotic agent, wherein prior to coating the abluminal surface, the water soluble layer is removed from the abluminal surface.

2. The method of claim 1, wherein the water soluble layer comprises a water soluble polymer or one or more water soluble saccharides.

3. The method of claim 2, wherein the water soluble polymer comprises poly(vinyl alcohol), poly(acrylic acid), poly(methacrylic acid), polyethylene glycol, polyethylene oxide, or a copolymer thereof.

4. The method of claim 2 or 3, wherein the one or more water soluble saccharides comprise a monosaccharide, an oligosaccharide, a polysaccharide, or a combination thereof.

5. The method of any one of claims 1 to 4, further comprising drying the biodegradable stent graft after depositing the water soluble layer on the abluminal surface.

6. The method of any one of claims 1 to 5, wherein contacting the biodegradable stent graft with an alcohol-based solution comprises immersing the biodegradable stent graft into the alcohol-based solution.

7. The method of any one of claims 1 to 6, wherein the alcohol-based solution comprises methanol, ethanol, or isopropanol.

8. The method of any one of claims 1 to 7, wherein the diamine comprises ethylenediamine, trimethylenediamine, 1,4-diaminobutane, 1,5-pentanediamine, or 1,6-hexanediamine.

9. The method of any one of claims 1 to 8, wherein the water soluble layer is removed by dissolving the water soluble layer in an aqueous solution or water.

10. The method of any one of claims 1 to 9, wherein the anti-thrombotic agent and/or the vascular growth factor comprise a carboxyl functional group and/or an aldehyde.

11. The method of any one of claims 1 to 10, wherein coating the abluminal surface with the anti-proliferative agent and/or the anti-restenotic agent comprises spray coating the anti-proliferative layer and/or the anti-restenotic agent on the abluminal surface or spray coating a biodegradable polymer on the abluminal surface, wherein the biodegradable polymer comprises the anti-proliferative agent and/or the anti-restenotic agent.