We Claim:

1. A method for making a hydrophilic-silk composition, said method comprising:

providing at least one strand of silk fiber;

treating the at least one strand of silk fiber with an alkaline solution to provide at least one strand of degummed silk fiber;

treating the at least one strand of degummed silk fiber with a treatment solution to provide the hydrophilic-silk composition.

2. The method of claim 1, wherein the method comprises:

immobilizing at least one reagent onto the at least one strand of degummed silk fiber to provide an reagent-immobilized silk-fiber;

treating the reagent-immobilized silk-fiber with a treatment solution to provide a silk-based diagnostic composition.

3. The method of claim 1 wherein the method further comprises immobilizing at least one reagent onto the hydrophilic-silk composition to provide a silk-based diagnostic composition.

4. The method of claim 1, wherein the treatment solution comprises a blocking agent.

5. The method of claim 4, wherein the treatment solution comprises an aqueous solution of a surfactant.

6. The method of claim 5, wherein the surfactant is a sorbitan derivative.

7. The method of claim 5, wherein the surfactant further comprises poly(ethylene glycol).

8. The method of claim 4, wherein the blocking agent is bovine serum albumin.

9. The method of claim 2 or 3, wherein the at least one reagent is a primary antibody.

10. The method of claim 9, wherein the primary antibody is selected from a group consisting of Anti-hcG, Anti-HIV- p24, Anti-HIV-gp120, Anti-FSH, Anti-TSH, Anti Troponin, and Anti Plasmodium Falciparum.

11. The method of claim 2 or 3, wherein the at least one reagent is a secondary antibody.

12. The method of claim 11, wherein the secondary antibody is selected from the group consisting of gold or latex conjugated Anti-hcG, Anti-HIV- p24, Anti-HIV-gp120, Anti-FSH, Anti-TSH, Anti Troponin, and Anti Plasmodium Falciparum.

13. The method of claim 2 or 3, wherein the first reagent is an antigen.

14. The method of claim 2 or 3, wherein the immobilizing is achieved by a method selected from the group consisting of immersing, covalent bonding, coating, dipping, stamping, or combinations thereof.

15. A silk-based diagnostic composition made by the method of claim 1-14.

16. A diagnostic device comprising the silk-based composition of claim 45.

AMENDED CLAIMS

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1. A method for making a reagent-immobilized silk-fiber, said method comprising:

providing at least one strand of silk fiber;

treating the at least one strand of silk fiber with an alkaline solution to provide at least one strand of degummed silk fiber; and

immobilizing at least one reagent onto the at least one strand of degummed silk fiber to provide a reagent-immobilized silk-fiber.

2. A method of making a silk-based diagnostic composition, wherein the method comprises:

providing at least one strand of silk fiber;

treating the at least one strand of silk fiber with an alkaline solution to provide at least one strand of degummed silk fiber;

treating the at least one strand of degummed silk fiber with a treatment solution to provide a hydrophilic-silk composition; and

immobilizing at least one reagent onto the hydrophilic-silk composition to provide a silk-based diagnostic composition.

3. The method of claim 1 wherein the method further comprises treating the reagent-immobilized silk-fiber with a treatment solution to provide a silk-based diagnostic composition.

4. The method of claim 2 or 3, wherein the treatment solution comprises a blocking agent.

5. The method of claim 4, wherein the treatment solution comprises an aqueous solution of a surfactant.

6. The method of claim 5, wherein the surfactant is a sorbitan derivative.

7. The method of claim 5, wherein the surfactant further comprises poly(ethylene glycol).

8. The method of claim 4, wherein the blocking agent is bovine serum albumin.

9. The method of claim 1 or 2, wherein the at least one reagent is a primary antibody.

10. The method of claim 9, wherein the primary antibody is selected from a group consisting of Anti-hcG, Anti-HIV- p24, Anti-HIV-gp120, Anti-FSH, Anti-TSH, Anti Troponin, and Anti Plasmodium Falciparum.

11. The method of claim 1 or 2, wherein the at least one reagent is a secondary antibody.

12. The method of claim 11, wherein the secondary antibody is selected from the group consisting of gold or latex conjugated Anti-hcG, Anti-HIV- p24, Anti-HIV-gp120, Anti-FSH, Anti-TSH, Anti Troponin, and Anti Plasmodium Falciparum.

13. The method of claim 1 or 2, wherein the at least one reagent is an antigen.

14. The method of claim 1 or 2, wherein the immobilizing is achieved by a method selected from the group consisting of immersing, covalent bonding, coating, dipping, stamping, or combinations thereof.

15. A silk-based diagnostic composition made by the method of claim 1-14.

16. A diagnostic device comprising the silk-based composition of claim 15.

We Claim:

1. A method for making silk-based diagnostic composition, said method comprising:

providing at least one strand of silk fiber;

treating the at least one strand of silk fiber with an alkaline solution to provide at least one strand of degummed silk fiber;

immobilizing at least one reagent onto the at least one strand of degummed silk fiber to provide a reagent-immobilized silk-fiber; and

treating the reagent-immobilized silk-fiber with a treatment solution comprising poly(ethylene glycol) based sorbitan derivative, Bovine Serum Albbumin (BSA) and 1% PEG 400 to provide a silk-based diagnostic composition.

2. A method of making a silk-based diagnostic composition, wherein the method comprises:

providing at least one strand of silk fiber;

treating the at least one strand of silk fiber with an alkaline solution to provide at least one strand of degummed silk fiber;

treating the at least one strand of degummed silk fiber with a treatment solution comprising poly(ethylene glycol) based sorbitan derivative, Bovine Serum Albumin(BSA) and 1% PEG 400 to provide a hydrophilic-silk composition; and

immobilizing at least one reagent onto the hydrophilic-silk composition to provide a silk-based diagnostic composition.

3. The method of claim **1** or **2**, wherein the treatment solution comprises an aqueous solution of a surfactant.

4. The method of claim **3**, wherein the surfactant is a sorbitan derivative.

5. The method of claim **3**, wherein the surfactant further comprises poly(ethylene glycol).

6. The method of claim **1** or **2**, wherein the blocking agent is bovine serum albumin.

7. The method of claim **1** or **2** , wherein the at least one reagent is a primary antibody.

8. The method of claim **7**, wherein the primary antibody is selected from a group consisting of Anti-hcG, Anti-HIV-p24, Anti-HIV-gp120, Anti-FSH, Anti-TSH, Anti Troponin, and Anti *Plasmodium Falciparum*.

9. The method of claim **1** or **2**, wherein the at least one reagent is a secondary antibody.

10. The method of claim **9**, wherein the secondary antibody is selected from the group consisting of gold or latex conjugated Anti-hcG, Anti-HIV- p24, Anti-HIV-gp120, Anti-FSH, Anti-TSH, Anti Troponin, and Anti *Plasmodium Falciparum*.

11. The method of claim **1** or **2**, wherein the at least one reagent is an antigen.

12. The method of claim **1** or **2**, wherein the immobilizing is achieved by a method selected from the group consisting of immersing, covalent bonding, coating, dipping, stamping, or combinations thereof.

We Claim:

1. A method for making silk-based diagnostic composition, said method comprising:

providing at least one strand of silk fiber;

treating the at least one strand of silk fiber with an alkaline solution to provide at least one strand of degummed silk fiber;

immobilizing at least one reagent onto the at least one strand of degummed silk fiber to provide a reagent-immobilized silk-fiber; and

treating the reagent-immobilized silk-fiber with a treatment solution comprising poly(ethylene glycol) based sorbitan derivative, Bovine Serum Albbumin (BSA) and 1% PEG 400 to provide a silk-based diagnostic composition.

2. A method of making a silk-based diagnostic composition, wherein the method comprises:

providing at least one strand of silk fiber;

treating the at least one strand of silk fiber with an alkaline solution to provide at least one strand of degummed silk fiber;

treating the at least one strand of degummed silk fiber with a treatment solution comprising poly(ethylene glycol) based sorbitan derivative, Bovine Serum Albumin(BSA) and 1% PEG 400 to provide a hydrophilic-silk composition; and

immobilizing at least one reagent onto the hydrophilic-silk composition to provide a silk-based diagnostic composition.

3. The method of claim **1** or **2**, wherein the treatment solution comprises an aqueous solution of a surfactant.

4. The method of claim **3**, wherein the surfactant is a sorbitan derivative.

5. The method of claim **3**, wherein the surfactant further comprises poly(ethylene glycol).

6. The method of claim **1** or **2**, wherein the blocking agent is bovine serum albumin.

7. The method of claim **1** or **2** , wherein the at least one reagent is a primary antibody.

8. The method of claim **7**, wherein the primary antibody is selected from a group consisting of Anti-hcG, Anti-HIV-p24, Anti-HIV-gp120, Anti-FSH, Anti-TSH, Anti Troponin, and Anti *Plasmodium Falciparum*.

9. The method of claim **1** or **2**, wherein the at least one reagent is a secondary antibody.

10. The method of claim **9**, wherein the secondary antibody is selected from the group consisting of gold or latex conjugated Anti-hcG, Anti-HIV- p24, Anti-HIV-gp120, Anti-FSH, Anti-TSH, Anti Troponin, and Anti *Plasmodium Falciparum*.

11. The method of claim **1** or **2**, wherein the at least one reagent is an antigen.

12. The method of claim **1** or **2**, wherein the immobilizing is achieved by a method selected from the group consisting of immersing, covalent bonding, coating, dipping, stamping, or combinations thereof.