WHAT IS CLAIMED IS

1. A conjugate comprising:

a scaffold protein, a membrane-forming lipid, and an antigen-binding polypeptide,

wherein said membrane-forming lipids arrange in a lipid bilayer and said scaffold protein encircles said bilayer; and

wherein said antigen-binding polypeptide is conjugated to one or more of said membrane-forming lipids on one or both surfaces of said bilayer via a functionalized group on said one or more membrane-forming lipids and a complementary functional group located C-terminally on said antigen-binding polypeptide;

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide.

2. A conjugate comprising:

a scaffold protein, a membrane-forming lipid, and a short peptide of 20-60 amino acids,

wherein said membrane-forming lipids arrange in a lipid bilayer and said scaffold protein encircles said bilayer; and

wherein said short peptide is conjugated to one or more of said membrane-forming lipids on one or both surfaces of said bilayer.

3. A pharmaceutical composition comprising the conjugate of any one of the previous claims and a pharmaceutically acceptable vehicle.

4. A liquid formulation comprising 100-300 mg of the conjugate of claim 1 or 2 and having a viscosity of 10-50 cP, optionally wherein said formulation is for administration subcutaneously or via ocular delivery.

5. A method of preparing a conjugate of a nanolipoprotein particle and an antigen-binding polypeptide, comprising:

a) providing a scaffold protein and a membrane-forming lipid under conditions allowing (self-)assembly of a nanolipoprotein particle comprising a lipid bilayer of said membrane-forming lipids encircled by said scaffold protein, wherein one or more of said membrane-forming lipids presents a functionalized group on one or both surfaces of said particle;

b) allowing said particle to contact an antigen-binding polypeptide (*e.g.*, a Fab) having a C-terminally located complementary functional group that conjugates to said functionalized group at low pH in the range of 4.5 to 6.5 pH; and

c) optionally purifying the conjugate of said particle and said antigen-binding polypeptide.

6. A method of preparing a conjugate of a nanolipoprotein particle and a short peptide of 20-60 amino acids (*e.g.*, a cystine-knot peptide), comprising:

a) providing a scaffold protein and a membrane-forming lipid under conditions allowing (self-)assembly of a nanolipoprotein particle comprising a lipid bilayer of said membrane-forming lipids encircled by said scaffold protein;

wherein one or more of said membrane-forming lipids comprises a C_{4-28} fatty-acyl (*e.g.*, a C_{16} fatty-acyl) and fatty-acyl is conjugated to said short peptide; and

optionally purifying the peptide conjugate.

7. A conjugate produced by the method of claim 5 or 6.

8. A method of increasing avidity, activity, and/or potency of an antigen-binding polypeptide, said method comprising:

a) providing a scaffold protein and a membrane-forming lipid under conditions allowing (self-)assembly of a nanolipoprotein particle comprising a lipid bilayer of said membrane-forming lipids encircled by said scaffold protein, wherein one or more of said membrane-forming lipids presents a functionalized group on one or both surfaces of said particle;

b) allowing said particle to contact an antigen-binding polypeptide (*e.g.*, a Fab) having a C-terminally located complementary functional group that conjugates to said functionalized group at low pH in the range of 4.5 to 6.5 pH; and

c) optionally purifying the conjugate of said particle and said antigen-binding polypeptide,

thereby increasing avidity, activity, and/or potency of said antigen-binding polypeptide.

9. A method of increasing stability, shelf-life, and/or half-life of an antigen-binding polypeptide, said method comprising:

a) providing a scaffold protein and a membrane-forming lipid under conditions allowing (self-)assembly of a nanolipoprotein particle comprising a lipid bilayer of said membrane-forming lipids encircled by said scaffold protein, wherein one or more of said membrane-forming lipids presents a functionalized group on one or both surfaces of said particle;

b) allowing said particle to contact an antigen-binding polypeptide (*e.g.*, a Fab) having a C-terminally located complementary functional group that conjugates to said functionalized group at low pH in the range of 4.5 to 6.5 pH; and

c) optionally purifying the conjugate of said particle and said antigen-binding polypeptide,

thereby increasing stability, shelf-life, and/or half-life of said antigen-binding polypeptide.

10. A method of increasing stability, shelf-life, and/or half-life of a nanolipoprotein particle, said method comprising

a) providing a scaffold protein and a membrane-forming lipid under conditions allowing (self-)assembly of a nanolipoprotein particle comprising a lipid bilayer of said membrane-forming lipids encircled by said scaffold protein, wherein one or more of said membrane-forming lipids presents a functionalized group on one or both surfaces of said particle;

b) allowing said particle to contact an antigen-binding polypeptide (*e.g.*, a Fab) having a C-terminally located complementary functional group that conjugates to said functionalized group at low pH in the range of 4.5 to 6.5 pH; and

c) optionally purifying the conjugate of said particle and said antigen-binding polypeptide,

thereby increasing stability, shelf-life, and/or half-life of said nanolipoprotein particle.

11. A method of increasing the stability, shelf-life, and/or half-life of a short peptide that is 20-60 amino acids in length, said method comprising:

a) providing a scaffold protein and a membrane-forming lipid under conditions allowing (self-)assembly of a nanolipoprotein particle comprising a lipid bilayer of said membrane-forming lipids encircled by said scaffold protein;

wherein one or more of said membrane-forming lipids comprises a C_{4-28} fatty-acyl (*e.g.*, a C_{16} fatty-acyl) and fatty-acyl is conjugated to said short peptide; and

optionally purifying the peptide conjugate;

b) modifying one or more of said membrane-forming lipids to a present functionalized group on one or both surfaces of said particle, and

c) allowing said particle to contact an antigen-binding polypeptide (*e.g.*, a Fab) having a C-terminally located complementary functional group that conjugates to said functionalized group at low pH in the range of 4.5 to 6.5 pH;

wherein said step c) follows said step b) without an intervening step to remove some or all unassembled membrane-forming lipids; and/or without an intervening step to enrich the peptide conjugate of step b)

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide,

thereby increasing stability, shelf-life, and/or half-life of said short peptide.

12. The conjugate of any one of claims 1-2 and 7, or the pharmaceutical composition of claim 3, or the formulation of claim 4, for use as a medicament.

13. Use of the conjugate of any one of claims 1-2 and 7, or the pharmaceutical composition of claim 3, or the formulation of claim 4, in the manufacture of a medicament for treatment of cancer or ocular disorders.

14. Use of the conjugate of any one of claims 1-2 and 7, or the pharmaceutical composition of claim 3, or the formulation of claim 4, in the manufacture of a medicament for inhibiting angiogenesis and/or tumor growth.

15. The conjugate of any one of claims 1-2 and 7, or the pharmaceutical composition of claim 3, or the formulation of claim 4, for use in treating an individual with an antigen-binding polypeptide (*e.g.*, a Fab),

optionally wherein said conjugate, pharmaceutical composition or formulation is for administration with an additional therapeutic agent.

16. The conjugate of any one of claims 1-2 and 7, or the pharmaceutical composition of claim 3, or the formulation of claim 4, for use in delivering an antigen-binding polypeptide (*e.g.*, a Fab) to an individual in need thereof,

wherein said conjugate, composition, or formulation is to be administered to said individual,

thereby delivering said antigen-binding polypeptide to said individual.

17. A liquid formulation comprising a conjugate of an antigen-binding polypeptide (*e.g.*, said Fab) and a nanolipoprotein particle, for use in delivering an antigen-binding polypeptide (*e.g.*, a Fab) to an individual in need thereof, in a potent, stable liquid formulation,

wherein said liquid formulation is to be administered to said individual;

wherein said nanolipoprotein particle comprises a scaffold protein encircling a bilipid layer of membrane-forming lipids;

wherein said membrane-forming lipids are conjugated to 5-100 molecules of said antigen-binding polypeptide via a functionalized group on said membrane-forming lipid and a C-terminally located complementary functional group on said antigen-binding polypeptide;

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide,

thereby delivering said antigen-binding polypeptide to said individual in a stable liquid formulation.

18. A liquid formulation comprising a conjugate of an antigen-binding polypeptide (*e.g.*, said Fab) and a nanolipoprotein particle, for use in delivering an antigen-binding polypeptide (*e.g.*, a Fab) to an individual in need thereof, in a potent, low viscosity formulation,

wherein said liquid formulation is to be administered to said individual;

wherein said nanolipoprotein particle comprises a scaffold protein encircling a bilipid layer of membrane-forming lipids;

wherein one or more of said membrane-forming lipids is conjugated to said antigen-binding polypeptide via a functionalized group on said one or more membrane-forming lipids and a C-terminally located complementary functional group on said antigen-binding polypeptide;

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide; and

wherein said liquid formulation has a viscosity of 10-50 cP and a concentration of 100-300 mg of said conjugate/mL,

thereby delivering said antigen-binding polypeptide to said individual in a low viscosity formulation.

19. A liquid formulation comprising a conjugate of an antigen-binding polypeptide (*e.g.*, said Fab) and a nanolipoprotein particle, for use in delivering a short peptide 20-60 amino acids in length to an individual in need thereof, in a potent, stable liquid formulation,

wherein said liquid formulation is to be administered to said individual;

wherein said nanolipoprotein particle comprises a scaffold protein encircling a bilipid layer of membrane-forming lipids;

wherein one or more of said membrane-forming lipids is a C_{4-28} fatty-acyl and wherein said fatty-acyl is conjugated to a short peptide of 20-60 amino acids;

wherein said membrane-forming lipids are conjugated to 5-100 molecules of said antigen-binding polypeptide via a functionalized group on said membrane-forming lipid and a C-terminally located complementary functional group on said antigen-binding polypeptide;

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide,

thereby delivering said short peptide to said individual in a stable liquid formulation.

20. A liquid formulation comprising a conjugate of an antigen-binding polypeptide (*e.g.*, said Fab) and a nanolipoprotein particle, for use in delivering a short peptide 20-60

amino acids in length to an individual in need thereof, in a potent, low viscosity formulation,

wherein said liquid formulation is to be administered to said individual;

wherein said nanolipoprotein particle comprises a scaffold protein encircling a bilipid layer of membrane-forming lipids;

wherein one or more of said membrane-forming lipids is a C_{4-28} fatty-acyl and wherein said fatty-acyl is conjugated to a short peptide of 20-60 amino acids;

wherein one or more of said membrane-forming lipids is conjugated to said antigen-binding polypeptide via a functionalized group on said one or more membrane-forming lipids and a C-terminally located complementary functional group on said antigen-binding polypeptide;

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide; and

wherein said liquid formulation has a viscosity of 10-50 cP and a concentration of 100-300 mg of said conjugate/mL,

thereby delivering said short peptide to said individual in a low viscosity formulation.

21. A liquid formulation comprising a conjugate of an antigen-binding polypeptide (*e.g.*, a Fab), a nanolipoprotein particle, and a biologically active agent or a detectable agent, for use in delivering a biologically active agent or a detectable agent to an individual in need thereof, in a stable liquid formulation,

wherein said liquid formulation is to be administered to said individual,

wherein said nanolipoprotein particle comprises a scaffold protein encircling a bilipid layer of membrane-forming lipids;

wherein said membrane-forming lipids are conjugated to 5-100 molecules of said antigen-binding polypeptide via a functionalized group on said membrane-forming lipid and a C-terminally located complementary functional group on said antigen-binding polypeptide;

wherein said biologically active agent or said detectable agent is conjugated to at least one of said scaffold protein, said membrane-forming lipid, or said antigen-binding polypeptide;

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide,

thereby delivering said biologically active agent or said detectable agent to said individual in need thereof in a stable liquid formulation.

22. A liquid formulation comprising a conjugate of an antigen-binding polypeptide (*e.g.*, a Fab), a nanolipoprotein particle, and a biologically active agent or a detectable agent, for use in delivering a biologically active agent or a detectable agent to an individual in need thereof, in a low viscosity formulation,

wherein said liquid formulation is to be administered to said individual,

wherein said nanolipoprotein particle comprises a scaffold protein encircling a bilipid layer of membrane-forming lipids;

wherein one or more of said membrane-forming lipids is conjugated to said antigen-binding polypeptide via a functionalized group on said one or more membrane-forming lipids and a C-terminally located complementary functional group on said antigen-binding polypeptide;

wherein said biologically active agent or said detectable agent is conjugated to at least one of said scaffold protein, said membrane-forming lipid, or said antigen-binding polypeptide;

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide; and

wherein said liquid formulation has a viscosity of 10-50 cP and a concentration of 100-300 mg of said conjugate/mL,

thereby delivering said biologically active agent or said detectable agent to said individual in need thereof in a low viscosity formulation.

23. A liquid formulation comprising a conjugate of an antigen-binding polypeptide (*e.g.*, a Fab), a nanolipoprotein particle, and a biologically active agent or a detectable agent, for use in delivering a biologically active agent or a detectable agent to the brain or central nervous system of an individual in need thereof,

wherein said liquid formulation is for administration systemically,

wherein said nanolipoprotein particle comprises a scaffold protein encircling a bilipid layer of membrane-forming lipids;

wherein one or more of said membrane-forming lipids is conjugated to said antigen-binding polypeptide via a functionalized group on said one or more membrane-forming lipids and a C-terminally located complementary functional group on said antigen-binding polypeptide;

wherein said biologically active agent or said detectable agent is conjugated to at least one of said scaffold protein, said membrane-forming lipid, or said antigen-binding polypeptide;

optionally wherein a spacer connects said functionalized group to said membrane-forming lipid and/or a spacer connects said complementary functional group to said antigen-binding polypeptide; and

wherein said conjugate translocates across the blood-brain barrier,

thereby delivering said biologically active agent or said detectable agent to the brain or central nervous system of an individual in need thereof.

24. A system or kit for delivering an antigen-binding polypeptide to a target cell, the system or kit comprising:

one or more components for preparing the conjugate of claim 1, or the pharmaceutical composition of claim 3, or the formulation of claim 4, wherein said components are provided in one or more compartments of said kit or system, and

optionally instructions for preparing said conjugate, composition, or formulation and/or instructions for delivering said antigen-binding polypeptide.

25. A system or kit for delivering a short peptide of 20-60 amino acids (*e.g.* a cystine-knot peptide) to a target cell, the system or kit comprising:

one or more components for preparing the conjugate of claim 2, or the pharmaceutical composition of claim 3, or the formulation of claim 4, wherein said components are provided in one or more compartments of said kit or system, and

optionally instructions for preparing said conjugate or composition and/or instructions for delivering said short peptide (*e.g.*, said cystine-knot peptide).

26 A method of reducing lipid-scaffold protein conjugation in preparing a conjugate of a nanolipoprotein particle and an antigen-binding polypeptide, comprising:

a) providing a scaffold protein and a membrane-forming lipid under conditions allowing assembly of a nanolipoprotein particle comprising a lipid bilayer of said membrane-forming lipids encircled by said scaffold protein, wherein one or more of said membrane-forming lipids presents a functionalized group on one or both surfaces of said particle;

b) allowing said particle to contact an antigen-binding polypeptide (*e.g.*, a Fab) having a C-terminally located complementary functional group at a low pH that favors conjugation of said functionalized group to said functional group rather than to said scaffold protein; and

c) optionally purifying the conjugate of said particle and said antigen-binding polypeptide.

27. A method of increasing the biological activity of a short peptide attached to the surface of a lipid-based nanoparticle, comprising

(a) providing a lipid-based nanoparticle comprising a short peptide attached its surface, wherein one or more lipids of the lipid-based nanoparticle presents a functionalized group, and

(b) allowing the nanoparticle to contact a polypeptide having a functional group under conditions that favor conjugation of said functionalized group to said functional group.