What is claimed is:

1. A lipid composition consisting of the following components:

(1) a permanently anionic lipid;

(2) a permanently cationic lipid;

(3) a neutral lipid;

wherein the molar ratio of the permanently anionic lipid, the permanently cationic lipid, and the neutral lipid in the lipid composition is (14 to 33):(40 to 57):(22 to 40);

the permanently anionic lipid is selected from any one or more of the following:

2-acetamidoethyl ((R)-2,3-bis(oleoyloxy)propyl) phosphate, (Z)-(R)-3-(phosphonooxy)propane-1,2-diyl dioleate, 1,2-dioleoyl-sn-glycero-3-phospho-rac-glycerol, or salts thereof;

the permanently cationic lipid is selected from:

1,2-di-O-octadecenyl-3-trimethylammonium propane, or salts thereof;

the neutral lipid is selected from:

1,2-dioleoyl-sn-glycero-3-phosphoethanolamine or salts thereof;

the charge ratio of net positive to negative charge in the lipid composition is 1:2 to 1:5.

2. The lipid composition according to claim 1, wherein the lipid composition consists of the following components:

(1) 25 mol% of the permanently anionic lipid;

(2) 50 mol% of the permanently cationic lipid; and

(3) 25 mol% of the neutral lipid;

or, the lipid composition consists of the following components :

(1) 20 mol% of the permanently anionic lipid;

(2) 40 mol% of the permanently cationic lipid; and

(3) 40 mol% of the neutral lipid;

or, the lipid composition consists of the following components :

(1) 14 mol% of the permanently anionic lipid;

(2) 57 mol% of the permanently cationic lipid; and

(3) 29 mol% of the neutral lipid;

or, the lipid composition consists of the following components :

(1) 33 mol% of the permanently anionic lipid;

(2) 45 mol% of the permanently cationic lipid; and

(3) 22 mol% of the neutral lipid.

3. A use of a lipid composition in preparing a reagent enhancing the targeting specificity of antigen-presenting cells in target organs, wherein the lipid composition consists of the following components:

(1) a permanently anionic lipid;

(2) a permanently cationic lipid;

(3) a neutral lipid;

wherein the molar ratio of the permanently anionic lipid, the permanently cationic lipid, and the neutral lipid in the lipid composition is (14 to 33):(40 to 57):(22 to 40);

the permanently anionic lipid is selected from any one or more of the following:

2-acetamidoethyl ((R)-2,3-bis(oleoyloxy)propyl) phosphate, (Z)-(R)-3-(phosphonooxy)propane-1,2-diyl dioleate, 1,2-dioleoyl-sn-glycero-3-phospho-rac-glycerol, or salts thereof;

the permanently cationic lipid is selected from:

1,2-di-O-octadecenyl-3-trimethylammonium propane, or salts thereof;

the neutral lipid is selected from:

1,2-dioleoyl-sn-glycero-3-phosphoethanolamine or salts thereof;

the target organ is spleen;

the antigen-presenting cells comprise one or more of the following: dendritic cells, macrophages, or B cells;

the charge ratio of net positive to negative charge in the lipid composition is 1:2 to 1:5.

4. A composition for use in delivering the therapeutic and/or prophylactic agent to antigen-presenting cells in target organs, comprising:

(A) a therapeutic and/or prophylactic agent comprising one or more of nucleic acid molecules, small molecule compounds, polypeptides, or proteins;

(B) the lipid composition according to claim 1 or 2;

the target organ is spleen;

the antigen-presenting cells comprise one or more of the following: dendritic cells, macrophages, or B cells;

the therapeutic and/or prophylactic agent and the lipid composition are used in an amount such that the charge ratio of net positive to negative charge in the composition is 1:2 to 1:5.

5. The composition according to claim 4, wherein the therapeutic and/or prophylactic agent is a nucleic acid molecule capable of encoding one or more antigens.

6. The composition according to claim 4 or 5, wherein the nucleic acid molecule is capable of eliciting an immune response against disease-associated antigens.

7. The composition according to claim 4 or 5, wherein the nucleic acid molecule is capable of eliciting an immune response against cells expressing disease-associated antigens.

8. The composition according to claim 5, wherein the antigen is a disease-associated antigen.

9. The composition according to claim 5, wherein the antigen is capable of eliciting an immune response against disease-associated antigens.

10. The composition according to claim 5, wherein the antigen is capable of eliciting an immune response against cells expressing disease-associated antigens.

11. The composition according to claim 4, wherein the charge ratio of net positive to negative charge in the composition is 1:2;

or, the charge ratio of net positive to negative charge in the composition is 2:5;

or, the charge ratio of net positive to negative charge in the composition is 1:3;

or, the charge ratio of net positive to negative charge in the composition is 1:5.

12. The composition according to claim 4 or 5, wherein the nucleic acid molecule is RNA encoding one or more antigens.

13. The composition according to claim 4, wherein the composition further comprises at least one adjuvant;

and/or, the composition further comprises one or more excipients;

and/or, the composition further comprises one or more hydrophobic small molecules, permeability-enhancing molecules, carbohydrates, polymers, surface modifiers, functionalized lipids, or cytokines.

14. The composition according to claim 4, wherein the composition further comprises at least one auxiliary ingredient.

15. The composition according to claim 4, wherein the composition further comprises one or more pharmaceutically acceptable carriers.

16. The composition according to claim 4, wherein the composition further comprises one or more diluents.

17. A method for preparing a composition for delivering a therapeutic and/or prophylactic agent to antigen-presenting cells in target organs, wherein the method comprises:

(a) dissolving a permanently anionic lipid, a permanently cationic lipid, and a neutral lipid in an organic solvent to form a lipid solution, wherein the molar ratio of the permanently anionic lipid, permanently cationic lipid, and neutral lipid is (14 to 33):(40 to 57):(22 to 40), the permanently anionic lipid is selected from any one or more of the following:

2-acetamidoethyl ((R)-2,3-bis(oleoyloxy)propyl) phosphate, (Z)-(R)-3-(phosphonooxy)propane-1,2-diyl dioleate, 1,2-dioleoyl-sn-glycero-3-phospho-rac-glycerol, or salts thereof;

the permanently cationic lipid is selected from:

1,2-di-O-octadecenyl-3-trimethylammonium propane, or salts thereof;

the neutral lipid is selected from:

1,2-dioleoyl-sn-glycero-3-phosphoethanolamine or salts thereof;

(b) mixing the lipid solution obtained in step (a) with water to obtain a lipid mixture;

(c) mixing the lipid mixture obtained in step (b) with the therapeutic and/or prophylactic agent to form the composition, wherein the therapeutic and/or prophylactic agent comprises a nucleic acid buffer solution obtained by dissolving a nucleic acid molecule in a buffer with a pH of 6.8 to 7.6;

in step (c), the lipid mixture and the therapeutic and/or prophylactic agent are used in an amount such that the charge ratio of net positive to negative charge in the obtained composition is 1:2 to 1:5.

18. The method according to claim 17, wherein in step (a), the organic solvent is an alcohol solvent;

and/or, in step (b), the lipid mixture is capable of passing through a polycarbonate membrane with a pore size of 100 to 400 nm;

and/or, in step (c), the buffer comprises an aqueous HEPES buffer;

and/or, in step (c), the nucleic acid molecule is a nucleic acid molecule capable of encoding one or more antigens.

19. The method according to claim 17 or 18, wherein in step (a), the organic solvent comprises an alcohol with 1 to 4 carbon atoms;

and/or, in step (c), the buffer comprises an aqueous HEPES buffer and EDTA;

and/or, in step (c), the nucleic acid molecule is capable of eliciting an immune response against disease-associated antigens.

20. The method according to claim 17 or 18, wherein in step (c), the nucleic acid molecule is capable of eliciting an immune response against cells expressing disease-associated antigens.

21. The method according to claim 18, wherein in step (c), the antigen is a disease-associated antigen.

22. The method according to claim 18, wherein the antigen is capable of eliciting an immune response against disease-associated antigens.

23. The method according to claim 18, wherein the antigen is capable of eliciting an immune response against cells expressing disease-associated antigens.

24. A use of the composition according to any one of claims 4 to 16, or a composition prepared with the method according to any one of claims 17 to 23 in the manufacture of a medicament for the prevention, treatment, or amelioration of tumours in a mammalian subject.

25. The use according to claim 24, wherein the mammalian subject is selected from one or more of humans and non-human primates.