

What is claimed:

1. A method of generating a population of therapeutic dendritic cells, the method comprising:
 - obtaining living dendritic cells from a cell donor;
 - priming the dendritic cells with a TLR ligand *ex vivo*;
 - culturing the primed dendritic cells with a non-canonical inflammasome-activating lipid *ex vivo*; and
 - loading the dendritic cells with an immunogen, thereby generating a population of therapeutic dendritic cells.

2. A method of inducing an immune response in a subject, comprising:
 - obtaining living dendritic cells from a cell donor;
 - priming the dendritic cells with a TLR ligand *ex vivo*;
 - culturing the primed dendritic cells with a non-canonical inflammasome-activating lipid *ex vivo*;
 - loading the dendritic cells with an immunogen, thereby generating a population of therapeutic dendritic cells; and
 - administering the living dendritic cells to the subject, thereby inducing an immune response in a subject.

3. A method of treating cancer in a subject, comprising:
 - obtaining living dendritic cells from a cell donor;
 - priming the dendritic cells with a TLR ligand *ex vivo*;
 - culturing the primed dendritic cells with a non-canonical inflammasome-activating lipid *ex vivo*;
 - loading the dendritic cells with an immunogen, thereby generating a population of therapeutic dendritic cells; and
 - administering the living dendritic cells to the subject, thereby treating cancer in a subject.

4. The method of any one of claims 1–3, wherein the cell donor and/or subject is a mammalian subject.
5. The method of claim 4, wherein the cell donor and/or subject is a human subject.
6. The method of any one of claims 1–5, wherein obtaining dendritic cells from a cell donor comprises:
 - harvesting progenitor cells from the cell donor; and
 - culturing the progenitor cells *ex vivo* under conditions effective to induce differentiation, thereby obtaining dendritic cells from the cell donor.
7. The method of any one of claims 1–5, wherein obtaining dendritic cells from a subject comprises harvesting *in vivo* differentiated dendritic cells from the cell donor.
8. The method of any one of claims 1–7, wherein the immunogen is an immunogen from an infectious agent associated with the development of cancer.
9. The method of any one of claims 1–7, wherein the immunogen is a cancer antigen.
10. The method of any one of claims 1–7, wherein the immunogen is whole tumor lysate.
11. The method of claim 9 or claim 10, wherein the immunogen is autologous.
12. The method of any one of claims 1–11, wherein said priming and said culturing occur simultaneously.
13. The method of any one of claims 1–11, wherein said priming occurs before said culturing.
14. The method of any one of claims 1–13, wherein the TLR ligand is selected from a TLR1 ligand, a TLR2 ligand, a TLR3 ligand, a TLR4 ligand, a TLR5 ligand, a TLR6 ligand,

a TLR7 ligand, a TLR8 ligand, a TLR9 ligand, a TLR10 ligand, a TLR11 ligand, a TLR12 ligand, a TLR13 ligand, and combinations thereof.

15. The method of any one of claims 1–13, wherein the TLR ligand is a TLR4 ligand.

16. The method of claim 15, wherein the TLR4 ligand is selected from monophosphoryl lipid A (MPLA), lipopolysaccharide (LPS), or combinations thereof.

17. The method of any one of claims 1–16, wherein the non-canonical inflammasome-activating lipid comprises a species of oxidized 1-palmitoyl-2-arachidonoyl-*sn*-glycero-3-phosphorylcholine (oxPAPC).

18. The method of any one of claims 1–16, wherein the non-canonical inflammasome-activating lipid comprises 2-[[[(2R)-2-[(E)-7-carboxy-5-hydroxyhept-6-enoyl]oxy-3-hexadecanoyloxypropoxy]-hydroxyphosphoryl]oxyethyl-trimethylazanium (**HODiA-PC**), [(2R)-2-[(E)-7-carboxy-5-oxohept-6-enoyl]oxy-3-hexadecanoyloxypropyl] 2-(trimethylazaniumyl)ethyl phosphate (**KODiA-PC**), 1-palmitoyl-2-(5-hydroxy-8-oxooctenoyl)-*sn*-glycero-3-phosphorylcholine (**HOOA-PC**), 2-[[[(2R)-2-[(E)-5,8-dioxooct-6-enoyl]oxy-3-hexadecanoyloxypropoxy]-hydroxyphosphoryl]oxyethyl-trimethylazanium (**KOOA-PC**), [(2R)-3-hexadecanoyloxy-2-(5-oxopentanoxy)propyl] 2-(trimethylazaniumyl)ethyl phosphate (**POVPC**), [(2R)-2-(4-carboxybutanoxy)-3-hexadecanoyloxypropyl] 2-(trimethylazaniumyl)ethyl phosphate (**PGPC**), [(2R)-3-hexadecanoyloxy-2-[4-[3-[(E)-[2-[(Z)-oct-2-enyl]-5-oxocyclopent-3-en-1-ylidene]methyl]oxiran-2-yl]butanoxy]propyl] 2-(trimethylazaniumyl)ethyl phosphate (**PECPC**), [(2R)-3-hexadecanoyloxy-2-[4-[3-[(E)-[3-hydroxy-2-[(Z)-oct-2-enyl]-5-oxocyclopentylidene]methyl]oxiran-2-yl]butanoxy]propyl] 2-(trimethylazaniumyl)ethyl phosphate (**PEIPC**), or a combination thereof.

19. The method of any one of claims 1–16, wherein the non-canonical inflammasome-activating lipid comprises [(2R)-2-(4-carboxybutanoxy)-3-hexadecanoyloxypropyl] 2-(trimethylazaniumyl)ethyl phosphate (**PGPC**).

20. The method of any one of claims 2–19, further comprising administering an anti-cancer agent to the subject.

21. The method of claim 20, wherein the anti-cancer agent is a chemotherapeutic agent.