What is Claimed is:

1. An isolated extracellular vesicle (EV) comprising (i) at least one antigen and (ii) at least one adjuvant.
2. The EV of claim 1, which comprises at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more different antigens.
3. The EV of claim 1 or 2, which comprises at least at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more different adjuvants.
4. The EV of any one of claims 1 to 3, wherein the antigen is not presented on MHC class I and/or II molecules.
5. The EV of any one of claims 1 to 4, wherein the EV is not derived from a naturally-existing antigen-presenting cell.
6. The EV of any one of claims 1 to 5, wherein the EV is not derived from a naturally-existing dendritic cell, a naturally-existing B cell, a naturally-existing mast cell, a naturally-existing macrophage, a naturally-existing neutrophil, naturally-existing Kupffer-Browicz cell, cell derived from any of these cells, or any combination thereof.
7. The EV of any one of claims 1 to 6, which induces a cellular immune response, a humoral immune response, or both cellular and humoral immune responses.
8. The EV of claim 7, wherein the induction of the cellular immune response, the humoral immune response, or both cellular and humor immune responses is increased by at least about 5%, at least about 10%, at least about 20%, at least about 30%, at least about 40%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, at least about 100% or more, compared to (i) a corresponding EV that does not comprise the adjuvant or the antigen or (ii) the adjuvant or the antigen without the EV.
9. The EV of any one of claims 1 to 8, which induces a CD4+ T cell response, a CD8+ T cell response, or both CD4+ and CD8+ T cell responses.
10. The EV of any one of claims 1 to 9, wherein the EV does not directly interact with T Cell Receptors of T cells.
11. The EV of any one of claims 1 to 10, wherein the EV further comprises a first scaffold moiety.
12. The EV of claim 11, wherein the antigen is linked to the first scaffold moiety.
13. The EV of claim 11 or 12, wherein the adjuvant is linked to the first scaffold moiety.

14. The EV of any one of claims 11 to 13, wherein the EV further comprises a second scaffold moiety.
15. The EV of claim 14, wherein the antigen is linked to the first scaffold moiety, and the adjuvant is linked to the second scaffold moiety.
16. The EV of claim 14 or 15, wherein the first scaffold moiety and the second scaffold moiety are the same.
17. The EV of claim 14 or 15, wherein the first scaffold moiety and the second scaffold moiety are different.
18. The EV of any one of claims 11 to 17, wherein the first scaffold moiety is a Scaffold X.
19. The EV of any one of claims 11 to 17, wherein the first scaffold moiety is a Scaffold Y.
20. The EV of any one of claims 14 to 19, wherein the second scaffold moiety is a Scaffold Y.
21. The EV of any one of claims 14 to 19, wherein the second scaffold moiety is a Scaffold X.
22. The EV of claim 18 or 21, wherein the Scaffold X is capable of: (i) anchoring the antigen on the luminal surface of the EV; (ii) anchoring the antigen on the exterior surface of the EV; (iii) anchoring the adjuvant on the luminal surface of the EV; (iv) anchoring the adjuvant on the exterior surface of the EV; or (v) combinations thereof.
23. The EV of any one of claims 18, 21, and 22, wherein the Scaffold X is selected from the group consisting of prostaglandin F2 receptor negative regulator (the PTGFRN protein); basigin (the BSG protein); immunoglobulin superfamily member 2 (the IGSF2 protein); immunoglobulin superfamily member 3 (the IGSF3 protein); immunoglobulin superfamily member 8 (the IGSF8 protein); integrin beta-1 (the ITGB1 protein); integrin alpha-4 (the ITGA4 protein); 4F2 cell-surface antigen heavy chain (the SLC3A2 protein); a class of ATP transporter proteins (the ATP1A1, ATP1A2, ATP1A3, ATP1A4, ATP1B3, ATP2B1, ATP2B2, ATP2B3, ATP2B4 proteins), and any combination thereof.
24. The EV of claim 19 or 20, wherein the Scaffold Y is capable of: (i) anchoring the antigen on the luminal surface of the EV; (ii) anchoring the adjuvant on the luminal surface of the EV; or (iii) both.
25. The EV of any one of claims 19, 20, and 24, wherein the Scaffold Y is selected from the group consisting of myristoylated alanine rich Protein Kinase C substrate (the MARCKS protein); myristoylated alanine rich Protein Kinase C substrate like 1 (the MARCKSL1 protein); brain acid soluble protein 1 (the BASP1 protein), and any combination thereof.

26. The EV of any one of claims 11 to 25, wherein the antigen is linked to a first scaffold moiety on the luminal surface of the EV, and the adjuvant is linked to a second scaffold moiety on the luminal surface of the EV.

27. The EV of claim 26, wherein

    a. each of the first scaffold moiety and the second scaffold moiety is Scaffold Y;

    b. the first scaffold moiety is Scaffold Y, and the second scaffold moiety is Scaffold X;

    c. the first scaffold moiety is Scaffold X, and the second scaffold moiety is Scaffold Y; or

    d. each of the first scaffold moiety and the second scaffold moiety is Scaffold X.

28. The EV of any one of claims 11 to 25, wherein the antigen is linked to a first scaffold moiety on the luminal surface of the EV, and the adjuvant is in the lumen of the EV.

29. The EV of any one of claims 11 to 25, wherein the antigen is in the lumen of the EV, and the adjuvant is linked to a first scaffold moiety on the luminal surface of the EV.

30. The EV of any one of claims 11 to 25, wherein the antigen is linked to a first scaffold moiety on the luminal surface of the EV and the adjuvant is linked to a second scaffold moiety on the exterior surface of the EV.

31. The EV of any one of claims 28 to 30, wherein:

    a. the first scaffold moiety is Scaffold Y, and the second scaffold moiety is Scaffold X; or

    b. each of the first scaffold moiety and the second scaffold moiety is Scaffold X.

32. The EV of any one of claims 11 to 25, wherein the antigen is linked to a first scaffold moiety on the exterior surface of the EV, and the adjuvant is linked to a second scaffold moiety on the luminal surface of the EV.

33. The EV of claim 32, wherein:

    a. the first scaffold moiety is Scaffold X, and the second scaffold moiety is Scaffold Y; or

    b. each of the first scaffold moiety and the second scaffold moiety is Scaffold X.

34. The EV of any one of claims 11 to 25, wherein the antigen is in the lumen of the EV and the adjuvant is in the lumen of the EV.
35. The EV of any one of claims 11 to 25, wherein the antigen is linked to a first scaffold moiety on the exterior surface of the EV and the adjuvant is linked to a second scaffold moiety on the exterior surface of the EV.
36. The EV of claim 35, wherein the first scaffold and the second scaffold moiety are Scaffold X.
37. The EV of any one of claims 11 to 25, wherein the antigen is linked to a first scaffold moiety on the exterior surface of the EV and the adjuvant is in the lumen of the EV.
38. The EV of claim 37, wherein the first scaffold moiety is Scaffold X.
39. The EV of any one of claims 11 to 25, wherein the antigen is in the lumen of the EV and the adjuvant is linked to a first scaffold moiety on the exterior surface of the EV.
40. The EV of claim 39, wherein the first scaffold moiety is Scaffold X.
41. The EV of any one of claims 11 to 25, wherein the antigen is linked to a first scaffold moiety on the surface of the EV and the adjuvant is linked to the first scaffold moiety on the luminal surface of the EV.
42. The EV of any one of claims 11 to 25, wherein the antigen is linked to a first scaffold moiety on the luminal surface of the EV and the adjuvant is linked to the first scaffold moiety on the exterior surface of the EV.
43. The EV of claim 41 or 42, wherein the first scaffold moiety is Scaffold X.
44. The EV of any one of claims 11 to 43, wherein: (i) the antigen is linked to the first scaffold moiety by a linker, (ii) the antigen is linked to the second scaffold moiety by a linker, (iii) the adjuvant is linked to the first scaffold moiety by a linker, (iv) the adjuvant is linked to the second scaffold moiety by a linker, or (v) combinations thereof.
45. The EV of claim 44, wherein the linker is a polypeptide.
46. The EV of claim 44, wherein the linker is a non-polypeptide moiety.
47. The EV of any one of claims 44 to 46, wherein the linker comprises a maleimide moiety.
48. The EV of any one of claims 44 to 47, wherein the linker comprises a cholesterol moiety.
49. The EV of any one of claims 11 to 48, wherein the first scaffold moiety or the second scaffold moiety is PTGFRN protein.
50. The EV of any one of claims 11 to 48, wherein the first scaffold moiety or the second scaffold moiety comprises an amino acid sequence as set forth in SEQ ID NO: 33.

51. The EV of any one of claims 11 to 49, wherein the first scaffold moiety or the second scaffold moiety comprises an amino acid sequence at least 50%, at least 60%, at least 70%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or about 100% identical to SEQ ID NO: 1.

52. The EV of any one of claims 9 to 51, wherein the first scaffold moiety or the second scaffold moiety is BASP1 protein.

53. The EV of any one of claims 9 to 51, wherein the first scaffold moiety or the second scaffold moiety comprises a peptide of (M)(G)(π)(X)(Φ/π)(π)(+)(+) or (G)(π)(X)(Φ/π)(π)(+)(+), wherein each parenthetical position represents an amino acid, and wherein π is any amino acid selected from the group consisting of Pro, Gly, Ala, and Ser, X is any amino acid, Φ is any amino acid selected from the group consisting of Val, Ile, Leu, Phe, Trp, Tyr, and Met, and (+) is any amino acid selected from the group consisting of Lys, Arg, and His; and wherein position five is not (+) and position six is neither (+) nor (Asp or Glu).

54. The EV of any one of claims 9 to 51, wherein the first scaffold moiety or the second scaffold moiety comprises an amino acid sequence set forth in any one of SEQ ID NOs: 50-155.

55. The EV of any one of claims 9 to 54, wherein the first scaffold moiety or the second scaffold moiety comprises an amino acid sequence at least 50%, at least 60%, at least 70%, at least 80%, at least 85%, at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or about 100% identical to SEQ ID NO: 3.

56. An isolated extracellular vesicle comprising (i) an antigen and (ii) an adjuvant, wherein:

    a. the antigen is linked to a first Scaffold Y on the luminal surface, and the adjuvant is linked to a second Scaffold Y on the luminal surface of the EV;
    b. the antigen is linked to a Scaffold Y on the luminal surface, and the adjuvant is in the lumen of the EV;
    c. the antigen is in the lumen of the EV, and the adjuvant is linked to a Scaffold Y on the luminal surface of the EV;
    d. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the adjuvant is linked to a Scaffold X on the exterior surface of the EV;
    e. the antigen is in the lumen of the EV, and the adjuvant is linked to a Scaffold X on the exterior surface of the EV;
    f. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the adjuvant is linked to a Scaffold X on the luminal surface of the EV;

g. the antigen is in the lumen of the EV, and the adjuvant is linked to a Scaffold X on the luminal surface of the EV;

h. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the adjuvant is linked to the Scaffold X on the exterior surface of the EV;

i. the antigen is linked to a first Scaffold X on the exterior surface of the EV, and the adjuvant is linked to a second Scaffold X on the exterior surface of the EV;

j. the antigen is linked to a Scaffold X on the exterior surface of the EV, and the adjuvant is linked to a Scaffold Y on the luminal surface of the EV;

k. the antigen is linked to a Scaffold X on the exterior surface of the EV, and the adjuvant is in the lumen of the EV;

l. the antigen is linked to a Scaffold X on the exterior surface of the EV, and the adjuvant is linked to the Scaffold X on the luminal surface of the EV;

m. the antigen is linked to a first Scaffold X on the luminal surface of the EV, and the adjuvant is linked to a second Scaffold X on the luminal surface of the EV;

n. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the adjuvant is linked to a Scaffold Y on the luminal surface of the EV;

o. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the adjuvant is in the lumen of the EV;

p. the antigen is linked to a first Scaffold X on the exterior surface of the EV, and the adjuvant is linked to a second Scaffold X on the luminal surface of the EV;

q. the antigen is linked to a first Scaffold X on the luminal surface of the EV, and the adjuvant is linked to a second Scaffold X on the exterior surface of the EV;

r. the antigen is in the lumen of the EV, and the adjuvant is in the lumen of the EV

s. the antigen is linked directly to the luminal surface of the EV, and the adjuvant is linked directly to the luminal surface of the EV;

t. the antigen is linked directly to the luminal surface of the EV, and the adjuvant is in the lumen of the EV;

u. the antigen is linked directly to the luminal surface of the EV, and the adjuvant is linked to a Scaffold Y on the luminal surface of the EV;

v. the antigen is linked directly to the luminal surface of the EV, and the adjuvant is linked to a Scaffold X on the luminal surface of the EV;

w. the antigen is linked directly to the luminal surface of the EV, and the adjuvant is linked directly to the exterior surface of the EV;

x. the antigen is linked directly to the luminal surface of the EV, and the adjuvant is linked to a Scaffold X on the exterior surface of the EV;

y. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the adjuvant is linked directly to the luminal surface of the EV;

z. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the adjuvant is linked directly to the exterior surface of the EV;

aa. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the adjuvant is linked directly to the luminal surface of the EV;

bb. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the adjuvant is linked directly to the exterior surface of the EV;

cc. the antigen is in the lumen of the EV, and the adjuvant is linked directly to the luminal surface of the EV; or

dd. the antigen is in the lumen of the EV, and the adjuvant is linked directly to the exterior of the EV.

57. The EV of any one of claims 1 to 56, wherein the EV further comprises an immune modulator.

58. The EV of claim 57, wherein the immune modulator is linked directly to the luminal surface or exterior surface of the EV.

59. The EV of claim 57 or 58, wherein the immune modulator is linked to a Scaffold X on the exterior surface of the EV or on the luminal surface of the EV.

60. The EV of claim 57 or 58 wherein the immune modulator is linked to a Scaffold Y on the luminal surface of the EV.

61. The EV of any one of claims 56 to 60, wherein: (i) the antigen is linked directly to the luminal surface by a linker, (ii) the adjuvant is linked directly to the luminal surface by a linker, (iii) the immune modulator is linked directly to the luminal surface by a linker, (iv) the antigen is linked directly to the exterior surface by a linker, (v) the adjuvant is linked

directly to the exterior surface by a linker, (vi) the immune modulator is linked directly to the exterior surface by a linker, or (vii) combinations thereof.

62. The EV of any one of claims 56 to 61, wherein: (i) the antigen is linked to a Scaffold X by a linker, (ii) the adjuvant is linked to a Scaffold X by a linker, (iii) the immune modulator is linked to a Scaffold X by a linker, (iv) the antigen is linked to a Scaffold Y by a linker, (v) the adjuvant is linked to a Scaffold Y by a linker, (vi) the immune modulator is linked to a Scaffold Y by a linker, or (vii) combinations thereof.

63. The EV of claim 61 or 62, wherein the linker is a polypeptide.

64. The EV of claim 61 or 62, wherein the linker is a non-polypeptide moiety.

65. The EV of any one of claims 61 to 64, wherein the linker comprises a maleimide moiety.

66. The EV of any one of claims 61 to 64, wherein the linker comprises a cholesterol moiety.

67. The EV of claim 57 or 58, wherein the immune modulator is in the lumen of the EV.

68. The EV of any one of claims 57 to 67, wherein the immune modulator comprises an inhibitor for a negative checkpoint regulator or an inhibitor for a binding partner of a negative checkpoint regulator.

69. The EV of claim 68, wherein the negative checkpoint regulator comprises cytotoxic T-lymphocyte-associated protein 4 (CTLA-4), programmed cell death protein 1 (PD-1), lymphocyte-activated gene 3 (LAG-3), T-cell immunoglobulin mucin-containing protein 3 (TIM-3), B and T lymphocyte attenuator (BTLA), T cell immunoreceptor with Ig and ITIM domains (TIGIT), V-domain Ig suppressor of T cell activation (VISTA), adenosine A2a receptor (A2aR), killer cell immunoglobulin like receptor (KIR), indoleamine 2,3-dioxygenase (IDO), CD20, CD39, CD73, or any combination thereof.

70. The EV of any one of claims 57 to 67, wherein the immune modulator comprises an activator for a positive co-stimulatory molecule or an activator for a binding partner of a positive co-stimulatory molecule.

71. The EV of claim 70, wherein the positive co-stimulatory molecule is a TNF receptor superfamily member (*e.g.*, CD120a, CD120b, CD18, OX40, CD40, Fas receptor, M68, CD27, CD30, 4-1BB, TRAILR1, TRAILR2, TRAILR3, TRAILR4, RANK, OCIF, TWEAK receptor, TACI, BAFF receptor, ATAR, CD271, CD269, AITR, TROY, CD358, TRAMP, and XEDAR).

72. The EV of claim 70, wherein the activator for a positive co-stimulatory molecule is a TNF superfamily member (*e.g.*, TNFα, TNF-C, OX40L, CD40L, FasL, LIGHT, TL1A, CD27L,

Siva, CD153, 4-1BB ligand, TRAIL, RANKL, TWEAK, APRIL, BAFF, CAMLG, NGF, BDNF, NT-3, NT-4, GITR ligand, and EDA-2).

73. The EV of claim 70, wherein the positive co-stimulatory molecule is a CD28-superfamily co-stimulatory molecule (*e.g.*, ICOS or CD28).

74. The EV of claim 70, wherein the activator for a positive co-stimulatory molecule is ICOSL, CD80, or CD86.

75. The EV of any one of claims 57 to 67, wherein the immune modulator comprises a cytokine or a binding partner of a cytokine.

76. The EV of claim 75, wherein the cytokine comprises IL-2, IL-4, IL-7, IL-10, IL-12, IL-15, IL-21, IFN-γ, IL-1α, IL-1β, IL-1ra, IL-18, IL-33, IL-36α, IL-36β, IL-36γ, IL-36ra, IL-37, IL-38, IL-3, IL-5, IL-6, IL-11, IL-13, IL-23, granulocyte-macrophage colony stimulating factor (GM-CSF), granulocyte-colony stimulating factor (G-CSF), leukemia inhibitory factor (LIF), stem cell factor (SCF), thrombopoietin (TPO), macrophage-colony stimulating factor (M-CSF), erythropoieticn (EPO), Flt-3, IFN-α, IFN-β, IFN-γ, IL-19, IL-20, IL-22, IL-24, TNF-α, TNF-β, BAFF, APRIL, lymphotoxin beta (TNF-γ), IL-17A, IL-17B, IL-17C, IL-17D, IL-17E, IL-17F, IL-25, TSLP, IL-35, IL-27, TGF-β, or combinations thereof.

77. The EV of any one of claims 57 to 67, wherein the immune modulator comprises a protein that supports intracellular interactions required for germinal center responses.

78. The EV of claim 77 wherein the protein that supports intracellular interactions required for germinal center responses comprises a signaling lymphocyte activation molecule (SLAM) family member, a SLAM-associated protein (SAP), : ICOS-ICOSL, CD40-40L, CD28/B7, PD-1/L1, IL-4/IL4R, IL21/IL21R, TLR4, TLR7, TLR8, TLR9, CD180, CD22, or combinations thereof.

79. The EV of claim 78, wherein the SLAM family member comprises SLAM, CD48, CD229 (Ly9), Ly108, 2B4, CD84, NTB-A, CRACC, BLAME, CD2F-10, or combinations thereof.

80. An isolated extracellular vesicle comprising (i) an antigen and (ii) an immune modulator, wherein:

    a. the antigen is linked to a first Scaffold Y on the luminal surface of the EV, and the immune modulator is linked to a second Scaffold Y on the luminal surface of the EV;

b. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the immune modulator is in the lumen of the EV;

c. the antigen is in the lumen of the EV, and the immune modulator is linked to a Scaffold Y on the luminal surface of the EV;

d. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the immune modulator is linked to a Scaffold X on the exterior surface the EV;

e. the antigen is in the lumen of the EV, and the immune modulator is linked to a Scaffold X on the exterior surface of the EV;

f. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the immune modulator is linked to a Scaffold X on the luminal surface of the EV;

g. the antigen is in the lumen of the EV, and the immune modulator is linked to a Scaffold X on the luminal surface of the EV;

h. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the immune modulator is linked to the Scaffold X on the exterior surface of the EV;

i. the antigen is linked to a first Scaffold X on the exterior surface of the EV, and the immune modulator is linked to a second Scaffold X on the exterior surface of the EV;

j. the antigen is linked to a Scaffold X on the exterior surface of the EV, and the immune modulator is linked to a Scaffold Y on the luminal surface of the EV;

k. the antigen is linked to a Scaffold X on the exterior surface of the EV, and the immune modulator is in the lumen of the EV;

l. the antigen is linked to a Scaffold X on the exterior surface of the EV, and the immune modulator is linked to the Scaffold X on the luminal surface of the EV;

m. the antigen is linked to a first Scaffold X on the luminal surface of the EV, and the immune modulator is linked to a second Scaffold X on the luminal surface of the EV;

n. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the immune modulator is linked to a Scaffold Y on the luminal surface of the EV;

o. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the immune modulator is in the lumen of the EV;

p. the antigen is linked to a first Scaffold X on the exterior surface of the EV, and the immune modulator is linked to a second Scaffold X on the luminal surface of the EV;

q. the antigen is linked to a first Scaffold X on the luminal surface of the EV, and the immune modulator is linked to a second Scaffold X on the exterior surface of the EV;

r. the antigen is in the lumen of the EV, and the immune modulator is in the lumen of the EV;

s. the antigen is linked directly to the luminal surface of the EV, and the immune modulator is linked directly to the luminal surface of the EV;

t. the antigen is linked directly to the luminal surface of the EV, and the immune modulator is in the lumen of the EV;

u. the antigen is linked directly to the luminal surface of the EV, and the immune modulator is linked to a Scaffold Y on the luminal surface of the EV;

v. the antigen is linked directly to the luminal surface of the EV, and the immune modulator is linked to a Scaffold X on the luminal surface of the EV;

w. the antigen is linked directly to the luminal surface of the EV, and the immune modulator is linked directly to the exterior of the EV;

x. the antigen is linked directly to the luminal surface of the EV, and the immune modulator is linked to a Scaffold X on the exterior of the EV;

y. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the immune modulator is linked directly to the luminal surface of the EV;

z. the antigen is linked to a Scaffold Y on the luminal surface of the EV, and the immune modulator is linked directly to the exterior of the EV;

aa. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the immune modulator is linked directly to the luminal surface of the EV;

bb. the antigen is linked to a Scaffold X on the luminal surface of the EV, and the immune modulator is linked directly to the exterior of the EV;

cc. the antigen is in the lumen of the EV, and the immune modulator is linked directly to the luminal surface of the EV; or

dd. the antigen is in the lumen of the EV, and the immune modulator is linked directly to the exterior of the EV.

81. The EV of claim 80, further comprising an adjuvant.

82. The EV of claim 81, wherein the adjuvant is linked directly to the luminal surface or exterior surface of the EV.

83. The EV of claim 81, wherein the adjuvant is linked to a Scaffold X on the exterior surface of the EV or in the lumen of the EV.

84. The EV of claim 81, wherein the adjuvant is linked to a Scaffold Y on the luminal surface of the EV.

85. The EV of claim 81, wherein the adjuvant is in the lumen of the EV.

86. The EV of any one of claims 1 to 85, wherein the antigen is a tumor antigen.

87. The EV of claim 86, wherein the tumor antigen comprises alpha-fetoprotein (AFP), carcinoembryonic antigen (CEA), epithelial tumor antigen (ETA), mucin 1 (MUC1), Tn-MUC1, mucin 16 (MUC16), tyrosinase, melanoma-associated antigen (MAGE), tumor protein p53 (p53), CD4, CD8, CD45, CD80, CD86, programmed death ligand 1 (PD-L1), programmed death ligand 2 (PD-L2), NY-ESO-1, PSMA, TAG-72, HER2, GD2, cMET, EGFR, Mesothelin, VEGFR, alpha-folate receptor, CE7R, IL-3, Cancer-testis antigen, MART-1 gp100, TNF-related apoptosis-inducing ligand, Brachyury (e.g., antigen in melanoma (PRAME)), Wilms tumor 1 (WT1), CD19, CD22, or any combination thereof.

88. The EV of any one of claims 1 to 85, wherein the antigen is derived from a bacterium, a virus, fungus, protozoa, or any combination thereof.

89. The EV of claim 88, wherein the antigen is derived from an oncogenic virus.

90. The EV of claim 88, wherein the antigen is derived from a Human Gamma herpes virus 4 (Epstein Barr virus), influenza A virus, influenza B virus, cytomegalovirus, staphylococcus aureus, mycobacterium tuberculosis, chlamydia trachomatis, HIV (*e*.g., HIV-2), corona viruses (*e.g.*, COVID-19, MERS-CoV, and SARS CoV), filoviruses (*e.g.*, Marburg and

Ebola), Streptococcus pyogenes, Streptococcus pneumoniae, Plasmodia species (*e.g.*, vivax and falciparum), Chikungunya virus, Human Papilloma virus (HPV), Hepatitis B, Hepatitis C, human herpes virus 8, Merkel cell polyomavirus (MCV), bunyavirus (*e.g.*, hanta virus), arena virus (*e.g.*, LCMV and Lassa virus), flavivirus (*e.g.*, dengue, Zika, Japanese encephalitis, west nile, and yellow fever), enterovirus (*e.g.*, polio), astrovirus (*e.g.*, gastroenteritis), rhabdoviridae (*e.g.*, rabies), Borrelia burgdorferi and Burrelia mayonii (*e.g.*, Lyme disease), herpes simplex virus 2 (HSV2), Klebsiella sp., Pseudomonas aeruginosa, Enterococcus sp., Proteus sp., Enterobacter sp., Actinobacter sp., coagulase-negative staphylococci (CoNS), Mycoplasma sp., Adenovirus, Adeno-associated virus (AAV), or combinations thereof.

91. The EV of any one of claims 1 to 79 and 81 to 90, the adjuvant is a Stimulator of Interferon Genes (STING) agonist, a toll-like receptor (TLR) agonist, an inflammatory mediator, RIG-I agonists, alpha-gal-cer (NKT agonist), heat shock proteins (*e.g.*, HSP65 and HSP70), C-type lectin agonists (*e.g.*, beta glucan (Dectin 1), chitin, and curdlan), or any combination thereof.

92. The EV of claim 91, wherein the adjuvant is a STING agonist.

93. The EV of claim 92, wherein the STING agonist comprises a cyclic dinucleotide STING agonist or a non-cyclic dinucleotide STING agonist.

94. The EV of claim 91, wherein the adjuvant is a TLR agonist.

95. The EV of claim 94, wherein the TLR agonist comprises a TLR2 agonist (*e.g.*, lipoteichoic acid, atypical LPS, MALP-2 and MALP-404, OspA, porin, LcrV, lipomannan, GPI anchor, lysophosphatidylserine, lipophosphoglycan (LPG), glycophosphatidylinositol (GPI), zymosan, hsp60, gH/gL glycoprotein, hemagglutinin), a TLR3 agonist (*e.g.*, double-stranded RNA, *e.g.*, poly(I:C)), a TLR4 agonist (*e.g.*, lipopolysaccharides (LPS), lipoteichoic acid, β-defensin 2, fibronectin EDA, HMGB1, snapin, tenascin C), a TLR5 agonist (*e.g.*, flagellin), a TLR6 agonist, a TLR7/8 agonist (*e.g.*, single-stranded RNA, CpG-A, Poly G10, Poly G3, Resiquimod), a TLR9 agonist (*e.g.*, unmethylated CpG DNA), or any combination thereof.

96. The EV of any one of claims 1 to 95, wherein the EV is an exosome.

97. The EV of any one of claims 1 to 96, further comprising a targeting moiety.

98. The EV of claim 97, wherein the targeting moiety specifically binds to a marker for a dendritic cell.

99. The EV of claim 98, wherein the marker is present only on the dendritic cell.

100. The EV of claim 98 or 99, wherein the dendritic cell comprises a plasmacytoid dendritic cell (pDC), a myeloid/conventional dendritic cell 1 (cDC1), a myeloid/conventional dendritic cell 2 (cDC2), inflammatory monocyte derived dendritic cells, Langerhans cells, dermal dendritic cells, lysozyme-expressing dendritic cells (LysoDCs), Kupffer cells, or any combination thereof.

101. The EV of claim 100, wherein the dendritic cell is cDC1.

102. The EV of any one of claims 98 to 101, wherein the marker comprises a C-type lectin domain family 9 member A (Clec9a) protein, a dendritic cell-specific intercellular adhesion molecule-3-grabbing non-integrin (DC-SIGN), CD207, CD40, Clec6, dendritic cell immunoreceptor (DCIR), DEC-205, lectin-like oxidized low-density lipoprotein receptor-1 (LOX-1), MARCO, Clec12a, Clec10a, DC-asialoglycoprotein receptor (DC-ASGPR), DC immunoreceptor 2 (DCIR2), Dectin-1, macrophage mannose receptor (MMR), BDCA-1 (CD303, Clec4c), Dectin-2, Bst-2 (CD317), Langerin, CD206, CD11b, CD11c, CD123, CD304, XCR1, AXL, Siglec 6, CD209, SIRPA, CX3CR1, GPR182, CD14, CD16, CD32, CD34, CD38, CD10, or any combination thereof.

103. The EV of claim 102, wherein the marker is Clec9a protein.

104. The EV of claim 97 wherein the targeting moiety specifically binds to a marker for a T cell.

105. The EV of claim 104, wherein the marker comprises a CD3 molecule.

106. The EV of any one of claims 97 to 105, wherein the targeting moiety is linked directly to the exterior surface of the EV.

107. The EV of any one of claims 97 to 105, wherein the targeting moiety is linked to a Scaffold X on the exterior surface of the EV.

108. The EV of claim 106, wherein the targeting moiety is linked directly to the exterior surface of the EV by a linker.

109. The EV of claim 107, wherein the targeting moiety is linked to the Scaffold X by a linker.

110. The EV of claim 108 or 109, wherein the linker is a polypeptide.

111. The EV of claim 108 or 109, wherein the linker is a non-polypeptide moiety.

112. The EV of any one of claims 108 to 111, wherein the linker comprises a maleimide moiety.

113. The EV of any one of claims 108 to 111, wherein the linker comprises a cholesterol moiety.

114. A pharmaceutical composition comprising the EV of any one of claims 1 to 113 and a pharmaceutically acceptable carrier.

115. A cell that produces the EV of any one of claims 1 to 113.

116. A cell comprising one or more vectors, wherein the vectors comprises a nucleic acid sequence encoding: (i) the antigen in any one of claims 1 to 113, (ii) the adjuvant in any one of claims 1 to 79 and 81 to 113, (iii) the immune modulator in any one of claims 57 to 113, (iv) the targeting moiety in any one of claims 97 to 113, or (v) combinations thereof.

117. A kit comprising the EV of any one of claims 1 to 113 and instructions for use.

118. An EV-drug conjugate comprising the EV of any one of claims 1 to 113.

119. A method of making EVs comprising culturing the cell of claim 115 or 116 under a suitable condition and obtaining the EVs.

120. The EV of any one of claims 1 to 113 for use in inducing an immune response in a subject in need thereof.

121. Use of the EV of any one of claims 1 to 113 in the manufacture of a medicament for preventing or treating a disease in a subject in need thereof, wherein the disease is cancer or an infection and wherein the disease is associated with the antigen.

122. The use of claim 121, wherein the cancer comprises bladder cancer, cervical cancer, renal cell cancer, testicular cancer, colorectal cancer, lung cancer, head and neck cancer, ovarian, lymphoma, liver cancer, glioblastoma, melanoma, myeloma, leukemia, pancreatic cancer, or combinations thereof.

123. The use of claim 121 or claim 122, wherein the EV is to be administered parenterally, orally, intravenously, intramuscularly, intra-tumorally, intranasally, subcutaneously, or intraperitoneally.

124. The use of any one of claims 121 to 123, wherein an additional therapeutic agent is to be administered.

125. Use of the EV of any one of claims 1 to 113 in the manufacture of a medicament for inhibiting or reducing metastasis of cancer in a subject,.

126. The EV of any one of claims 19, 20, and 24 to 113, the pharmaceutical composition of claim 114, the cell of claim 115 or 116, the kit of claim 117, the EV-drug conjugate of claim 118, or the method of claim 119, the EV of claim 120 or the use of claims 121 to 125, wherein the Scaffold Y comprises an N terminus domain (ND) and an effector domain (ED), wherein the ND and/or the ED are associated with the luminal surface of the EV.

127. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 126, wherein the ND is associated with the luminal surface of the exosome via myristoylation.

128. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 126 or 127, wherein the ED is associated with the luminal surface of the exosome by an ionic interaction.

129. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 128, wherein the ED comprises (i) a basic amino acid or (ii) two or more basic amino acids in sequence, wherein the basic amino acid is selected from the group consisting of Lys, Arg, His, and any combination thereof.

130. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 129, wherein the basic amino acid is (Lys)n, wherein n is an integer between 1 and 10.

131. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 130, wherein the ED comprises Lys (K), KK, KKK, KKKK (SEQ ID NO: 205), KKKKK (SEQ ID NO: 206), Arg (R) , RR, RRR, RRRR (SEQ ID NO: 207); RRRRR (SEQ ID NO: 208), KR, RK, KKR, KRK, RKK, KRR, RRK, (K/R)(K/R)(K/R)(K/R) (SEQ ID NO: 209), (K/R)(K/R)(K/R)(K/R)(K/R) (SEQ ID NO: 210), or any combination thereof.

132. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 131, wherein the ND comprises the amino acid sequence as set forth in G:X2:X3:X4:X5:X6, wherein G represents Gly; wherein ":" represents a peptide bond, wherein each of the X2 to the X6 is independently an amino acid, and wherein the X6 comprises a basic amino acid.

133. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 132, wherein:

(i) the X2 is selected from the group consisting of Pro, Gly, Ala, and Ser;

(ii) the X4 is selected from the group consisting of Pro, Gly, Ala, Ser, Val, Ile, Leu, Phe, Trp, Tyr, Gln and Met;

(iii) the X5 is selected from the group consisting of Pro, Gly, Ala, and Ser;

(iv) the X6 is selected from the group consisting of Lys, Arg, and His; or

(v) any combination of (i)-(iv).

134. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 133, wherein the ND comprises the amino acid sequence of G:X2:X3:X4:X5:X6, wherein

(i) G represents Gly;

(ii) ":" represents a peptide bond;

(iii) the X2 is an amino acid selected from the group consisting of Pro, Gly, Ala, and Ser;

(iv) the X3 is an amino acid;

(v) the X4 is an amino acid selected from the group consisting of Pro, Gly, Ala, Ser, Val, Ile, Leu, Phe, Trp, Tyr, Gln and Met;

(vi) the X5 is an amino acid selected from the group consisting of Pro, Gly, Ala, and Ser; and

(vii) the X6 is an amino acid selected from the group consisting of Lys, Arg, and His.

135. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 132 to 134, wherein the X3 is selected from the group consisting of Asn, Gln, Ser, Thr, Asp, Glu, Lys, His, and Arg.

136. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 135, wherein the ND and the ED are joined by a linker.

137. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 136, wherein the linker comprises one or more amino acids.

138. The EV, the pharmaceutical composition, the cell, the kit, the method of any one of claims 126 to 137, wherein the ND comprises an amino acid sequence selected from the group consisting of (i) GGKLSKK (SEQ ID NO: 211), (ii) GAKLSKK (SEQ ID NO: 212), (iii) GGKQSKK (SEQ ID NO: 213), (iv) GGKLAKK (SEQ ID NO: 214), (v) GGKLSK (SEQ ID NO: 215), or (vi) any combination thereof.

139. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 138, wherein the ND comprises an amino acid sequence selected from the group consisting of (i) GGKLSKKK (SEQ ID NO: 238), (ii) GGKLSKKS (SEQ ID NO: 239), (iii) GAKLSKKK (SEQ ID NO: 240), (iv) GAKLSKKS (SEQ ID NO: 241), (v) GGKQSKKK (SEQ ID NO: 242), (vi) GGKQSKKS (SEQ ID NO: 243), (vii)

GGKLAKKK (SEQ ID NO: 244), (viii) GGKLAKKS (SEQ ID NO: 245), and (ix) any combination thereof.

140. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 139, wherein the ND comprises the amino acid sequence GGKLSKK (SEQ ID NO: 211).

141. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 140, wherein the Scaffold Y is at least about 8, at least about 9, at least about 10, at least about 11, at least about 12, at least about 13, at least about 14, at least about 15, at least about 16, at least about 17, at least about 18, at least about 19, at least about 20, at least about 21, at least about 22, at least about 23, at least about 24, at least about 25, at least about 30, at least about 35, at least about 40, at least about 45, at least about 50, at least about 55, at least about 60, at least about 65, at least about 70, at least about 75, at least about 80, at least about 85, at least about 90, at least about 95, at least about 100, at least about 105, at least about 110, at least about 120, at least about 130, at least about 140, at least about 150, at least about 160, at least about 170, at least about 180, at least about 190, or at least about 200 amino acids in length.

142. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 141, wherein the Scaffold Y comprises (i) GGKLSKKKKGYNVN (SEQ ID NO: 246), (ii) GAKLSKKKKGYNVN (SEQ ID NO: 247), (iii) GGKQSKKKKGYNVN (SEQ ID NO: 248), (iv) GGKLAKKKKGYNVN (SEQ ID NO: 249), (v) GGKLSKKKKGYSGG (SEQ ID NO: 250), (vi) GGKLSKKKKGSGGS (SEQ ID NO: 251), (vii) GGKLSKKKKSGGSG (SEQ ID NO: 252), (viii) GGKLSKKKSGGSGG (SEQ ID NO: 253), (ix) GGKLSKKSGGSGGS (SEQ ID NO: 254), (x) GGKLSKSGGSGGSV (SEQ ID NO: 255), or (xi) GAKKSKKRFSFKKS (SEQ ID NO: 256).

143. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 141, wherein the Scaffold Y consists of (i) GGKLSKKKKGYNVN (SEQ ID NO: 246), (ii) GAKLSKKKKGYNVN (SEQ ID NO: 247), (iii) GGKQSKKKKGYNVN (SEQ ID NO: 248), (iv) GGKLAKKKKGYNVN (SEQ ID NO: 249), (v) GGKLSKKKKGYSGG (SEQ ID NO: 250), (vi) GGKLSKKKKGSGGS (SEQ ID NO: 251), (vii) GGKLSKKKKSGGSG (SEQ ID NO: 252), (viii) GGKLSKKKSGGSGG (SEQ ID NO: 253), (ix) GGKLSKKSGGSGGS (SEQ ID NO:

254), (x) GGKLSKSGGSGGSV (SEQ ID NO: 255), or (xi) GAKKSKKRFSFKKS (SEQ ID NO: 256).

144. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 143, wherein the Scaffold Y does not comprise Met at the N terminus.

145. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of any one of claims 126 to 144, wherein the Scaffold Y comprises a myristoylated amino acid residue at the N terminus of the scaffold protein.

146. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 145, wherein the amino acid residue at the N terminus of the Scaffold Y is Gly.

147. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 145 or 146, wherein the amino acid residue at the N terminus of the Scaffold Y is synthetic.

148. The EV, the pharmaceutical composition, the cell, the kit, the method, the EV or the use of claim 145 or 146, wherein the amino acid residue at the N terminus of the Scaffold Y is a glycine analog.