WHAT IS CLAIMED IS:

1. An extracellular vesicle (EV) comprising at least one heterologous extracellular vesicle protein (HEVP) or a functional fragment thereof, wherein the EV is produced from a producer cell which does not naturally express the HEVP, and wherein the HEVP is produced naturally by a donor cell.

2. The EV of claim 1, wherein the EV comprises 2, 3, 4, 5, 6, 7, 8, 9 or 10 heterologous extracellular vesicle proteins (HEVPs) or fragments thereof, wherein the EV is produced from a producer cell which does not naturally express the HEVPs, and wherein the HEVPs are produced naturally by a donor cell.

3. The EV of any one of the above claims, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of HEVP in the exosomes produced by the donor cell is equal to or greater than 20 peptide spectral matches (PSM) measured using liquid chromatography with tandem mass spectrometry (LC-MS/MS).

4. The EV of any one of the above claims, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of HEVP in the exosomes produced by the donor cell is equal to or greater than 80 peptide spectral matches (PSM) measured using LC-MS/MS.

5. The EV of any one of the above claims, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of HEVP in the exosomes produced by the donor cell is equal to or greater than 125 peptide spectral matches (PSM) measuring using LC-MS/MS.

6. The EV of any one of the above claims, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of HEVP in the exosomes produced by the donor cell is equal to or greater than 170 peptide spectral matches (PSM) measuring using LC-MS/MS.

7. The EV of any one of the above claims, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of HEVP in the exosomes produced by the donor cell is equal to or greater than 200 peptide spectral matches (PSM) measuring using LC-MS/MS.

8. The EV of any one of the above claims, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of HEVP in the exosomes produced by the donor cell is equal to or greater than 700 peptide spectral matches (PSM) measuring using LC-MS/MS.

9. The EV of any one of claims 1-6, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of HEVP in the exosomes produced by the donor cell is about 177 peptide spectral matches (PSM) measuring using LC-MS/MS.

10. The EV of any one of claims 1-8, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of HEVP in the exosomes produced by the donor cell is about 742 peptide spectral matches (PSM) measuring using LC-MS/MS.

11. The EV of any one of claims 1-3, wherein the level of the at least one HEVP in the exosomes produced by the donor cell is between 20 and 80 peptide spectral matches (PSM) measured using LC-MS/MS.

12. The EV of any one of claims 1-5, wherein the level of the at least one HEVP in the exosomes produced by the donor cell is between 80 and 200 peptide spectral matches (PSM) measured using LC-MS/MS.

13. The EV of any one of claims 1-8, wherein the level of the at least one HEVP in the exosomes produced by the donor cell is between 150 and 750 peptide spectral matches (PSM) measured using LC-MS/MS.

14. The EV of any one of the above claims, wherein the at least one HEVP is produced naturally by a donor cell which produces exosomes, and wherein the level of the at least one HEVP in the exosomes produced by the donor cell is equal to or greater than 5% of the total protein content of the exosomes produced by the donor cell.

15. The EV of any one of the above claims, wherein the at least one HEVP or fragment thereof is a fusion protein.

16. The EV of any one of the above claims, wherein the at least one HEVP or fragment thereof is modified by the addition of a functional moiety.

17. The EV of claim 16, wherein the functional moiety has affinity to a binding agent.

18. The EV of claim 17, wherein the functional moiety is an affinity tag.

19. The EV of claim 18, wherein the affinity tag is a peptide.

20. The EV of claim 16, wherein the functional moiety is a therapeutic compound.

21. The EV of claim 20, wherein the therapeutic compound is selected from the group consisting of a natural peptide, a recombinant peptide, a synthetic peptide, and any combination thereof.

22. The EV of claim 20, wherein the therapeutic compound is selected from the group consisting of nucleotides, amino acids, lipids, carbohydrates, small molecules, and any combination thereof.

23. The EV of claim 20, wherein the therapeutic compound is an antibody or a fragment thereof.

24. The EV of claim 20, wherein the therapeutic compound is an enzyme, a ligand, a receptor, or a fragment thereof.

25. The EV of claim 16, wherein the functional moiety is a targeting moiety.

26. The EV of claim 25, wherein the targeting moiety is specific to an organ, a tissue, or a cell.

27. The EV of any one of claims 15-26, wherein the fusion protein comprises a linker.

28. The EV of any one of claims 16-27, further comprising a linker between the at least one HEVP or fragment thereof and the functional moiety.

29. The EV of claim 27 or 28, wherein the linker is a flexible linker or a rigid linker.

30. The EV of any one of claims 27-29, wherein the linker is a straight-chain carbon linker, a branched-chain carbon linker, a heterocyclic carbon linker, or a peptide linker.

31. The EV of any one of claims 27-30, wherein the linker is a cleavable linker.

32. The EV of any one of the above claims, wherein the producer cell is selected from the group consisting of HEK, CHO, MB-231, Raji, PER.C6, CAP, MSC cells, and any combination thereof.

33. The EV of any one of the above claims, wherein the at least one HEVP is selected from the group consisting of a lung fibroblast EVP, an aortic endothelium cell EVP, an acute myeloid leukemia cell EVP, a monocyte EVP, a B-cell lymphoma EVP, a macrophage EVP, a brain endothelium cell EVP, a mesenchymal cell EVP, and any combination thereof.

34. The EV of claim 33, wherein the at least one HEVP is a human EVP, mouse EVP, rat EVP, dog EVP, or monkey EVP.

35. The EV of any one of the above claims, wherein the at least one HEVP is selected from the group consisting of CD13, MME, ENPP1, and NRP1, or a fragment thereof.

36. The EV of any one of the above claims, wherein the at least one HEVP is selected from the group consisting of CD13, MME, ENPP1, and NRP1, or a fragment thereof and wherein the producer cell is a CHO cell.

37. The EV of any one of the above claims, wherein the at least one HEVP is selected from the group consisting of CD13, MME, and NRP1, or a fragment thereof and wherein the producer cell is a CHO cell or a HEK cell.

38. The EV of any one of claims 1-34, wherein the at least one HEVP is selected from the group consisting of PTGFRN, BSG, IGSF3, ITGB1, ITGA4, SLC3A2, ATP transporter, or a fragment thereof, and any combination thereof.

39. The EV of any one of claims 1-37, where the extracellular vesicle further comprises an EVP selected from the group consisting of PTGFRN, BSG, IGSF3, ITGB1, ITGA4, SLC3A2, aATP transporter, or a fragment thereof, and any combination thereof.

40. The EV of any one of the above claims, wherein the producer cell is a non-human cell and wherein the at least one HEVP is a human HEVP.

41. The EV of any one of claims 1-39, wherein the producer cell is a human cell and wherein the at least one HEVP is a non-human HEVP.

42. A pharmaceutical formulation comprising the EV of any one of the above claims.

43. A kit comprising an EV or pharmaceutical formulation of any one of the above claims, wherein the EV or pharmaceutical formulation is contained in a container or package, and wherein the kit further comprises instructions describing a recommended use of the EV or pharmaceutical formulation.

44. Use of the EV of any one of claims 1-41, or pharmaceutical formulation of claim 42 in the manufacture of a medicament for the treatment of a cancer, hemophilia, diabetes, growth factor deficiency, an eye disease, a graft-versus-host disease (GvHD), an autoimmune disease, gastrointestinal disease, a cardiovascular disease, a respiratory disease, an allergic disease, a degenerative disease, an infectious disease, a fibrotic disease, or any combination thereof, or a disease or disorder associated with chronic inflammation, wherein the medicament further comprises a therapeutic compound.

45. A method of expressing a non-naturally occurring protein in an EV derived from a cell, comprising transfecting a nucleic acid encoding at least one heterologous extracellular vesicle protein (HEVP) or a fragment thereof in the cell and isolating an EV comprising the HEVP or a fragment thereof from the cell, wherein the HEVP is not naturally occurring in the EV derived from the cell.

46. The method of claim 45, wherein the EV comprises the EV of any one of claims 1 to 41.