WHAT IS CLAIMED IS:

1. A nucleic acid construct comprising a nucleic acid sequence encoding a modified Eastern Equine Encephalitis virus (EEEV) genome or replicon RNA, wherein the modified EEEV genome or replicon RNA is devoid of at least a portion of the nucleic acid sequence encoding one or more viral structural proteins.

2. The nucleic acid construct of claim 1, further comprising one or more expression cassettes, wherein each of the expression cassettes comprises a promoter operably linked to a heterologous nucleic acid sequence.

3. The nucleic acid construct of claim 2, wherein at least one of the expression cassettes comprises a subgenomic (*sg*) promoter operably linked to a heterologous nucleic acid sequence.

4. The nucleic acid construct of any one of claims 1-3, wherein the nucleic acid construct further comprises one or more untranslated regions (UTRs), optionally wherein at least one of the UTRs is a heterologous UTR.

5. The nucleic acid construct of any one of claims 2-4, wherein at least one of expression cassettes comprises a coding sequence for a gene of interest (GOI).

6. The nucleic acid construct of claim 5, wherein the GOI encodes a polypeptide selected from the group consisting of a therapeutic polypeptide, a prophylactic polypeptide, a diagnostic polypeptide, a nutraceutical polypeptide, an industrial enzyme, and a reporter polypeptide.

7. The nucleic acid construct of any one of claims 5-6, wherein the GOI encodes a polypeptide selected from the group consisting of an antibody, an antigen, an immune modulator, an enzyme, a signaling protein, and a cytokine.

8. The nucleic acid construct of any one of claims 5-7, wherein the coding sequence of the GOI is optimized for expression at a level higher than the expression level of a reference coding sequence.

9. The nucleic acid construct of any one of claims 5-8, wherein the coding sequence of the GOI is optimized for enhanced RNA stability.

10. The nucleic acid construct of any one of claims 1-9, wherein the nucleic acid construct is incorporated into a vector, optionally wherein the vector is a self-replicating RNA (srRNA) vector.

11. A recombinant cell comprising a nucleic acid construct according to any one of claims 1-10.

12. A cell culture comprising at least one recombinant cell according to claim 11, and a culture medium.

13. A transgenic animal comprising a nucleic acid construct according to any one of claims 1-10.

14. A method for producing a polypeptide of interest, comprising (i) rearing a transgenic animal according to claim 13, or (ii) culturing a recombinant cell comprising a nucleic acid construct according to any one of claims 5-10 under conditions wherein the transgenic animal or the recombinant cell produces the polypeptide encoded by the GOI.

15. A method for producing a polypeptide of interest in a subject, comprising introducing to the subject a nucleic acid construct according to any one of claims 5-10.

16. A recombinant polypeptide produced by the method of any one of claims 14-15.

17. A pharmaceutical composition comprising a pharmaceutically acceptable excipient and:
    a) a nucleic acid construct of any one of claims 1-10;
    b) a recombinant cell of claim 11; and/or
    c) a recombinant polypeptide of claim 16.

18. The pharmaceutical composition of claim 17, wherein the composition is formulated in a liposome, a lipid-based nanoparticle (LNP), or a polymer nanoparticle.

19. Use of a composition in the manufacture of a medicament for inducing a pharmacodynamic effect, preventing, and/or treating a health condition in a subject in need thereof, wherein the composition comprises:
    a) a nucleic acid construct of any one of claims 1-10;
    b) a recombinant cell of claim 11;
    c) a recombinant polypeptide of claim 16; and/or

d) a pharmaceutical composition of any one of claims 17-18,

wherein the health condition may be or is selected from a proliferative disorder, an infectious disease, a rare disease, an autoimmune disease, or an inflammatory disease.

20. A kit for inducing a pharmacodynamic effect, eliciting an immune response, for the prevention, and/or for the treatment of a health condition, the kit comprising:

a) a nucleic acid construct of any one of claims 1-10;

b) a recombinant cell of claim 11;

c) a recombinant polypeptide of claim 16; and/or

d) a pharmaceutical composition of any one of claims 17-18.

21. A nucleic acid construct of any one of claims 1-10, a recombinant cell of claim 11, a recombinant polypeptide of claim 16 and/or a pharmaceutical composition of any one of claims 17-18 for use in therapy.