CLAIMS

1. A circular polyribonucleotide comprising (a) a sequence encoding a polypeptide immunogen and (b) a sequence encoding an adjuvant or a sequence that is an innate immune system stimulator.

2. The circular polyribonucleotide of claim 1, wherein the sequence encoding:

(a) the polypeptide immunogen is operably linked to an IRES; or

(b) the adjuvant is operably linked to an IRES.

3. The circular polyribonucleotide of claim 1 or 2, wherein the adjuvant is a polypeptide.

4. The circular polyribonucleotide of claim 3, wherein the polypeptide immunogen and the adjuvant polypeptide are encoded by a single open-reading frame operably linked to the single IRES, wherein the expression of the open reading frame produces a polypeptide comprising the amino acid sequence of each of the polypeptide immunogen and the adjuvant polypeptide, optionally wherein the polypeptide immunogen and the adjuvant polypeptide are each separated by a polypeptide linker or a cleavage domain.

5. The circular polyribonucleotide of claim 3, wherein the circular polyribonucleotide comprises a plurality of IRESs, optionally wherein a first IRES is operably linked to the sequence encoding the polypeptide immunogen and a second IRES is operably linked to the sequence encoding the adjuvant polypeptide.

6. The circular polyribonucleotide of any one of claims 1-5, wherein the expression of the sequence encoding the polypeptide immunogen is at least 2-fold greater than the expression of the sequence encoding the adjuvant, optionally wherein the expression of the sequence encoding the polypeptide immunogen is at least 5-fold, 10-fold, or 100-fold greater than the expression of the sequence encoding the adjuvant.

7. An immunogenic composition comprising a plurality of circular polyribonucleotides, wherein the composition comprises (a) at least a first circular polyribonucleotide comprising a sequence encoding a polypeptide immunogen and (b) at least a second circular polyribonucleotide comprising a sequence encoding an adjuvant or a sequence that is an innate immune system stimulator, optionally wherein the adjuvant is a polypeptide.

8. The immunogenic composition of claim 7, wherein the polypeptide immunogen and the adjuvant are each operably linked to an IRES.

9. The circular polyribonucleotide or immunogenic composition of any one of claims 1-8, wherein the adjuvant is a cytokine, a chemokine, a costimulatory molecule, an innate immune stimulator, a signaling molecule, a transcriptional activator, a cytokine receptor, a bacterial component, or a component of the innate immune system.

10. A circular polyribonucleotide comprising a plurality of sequences, each sequence encoding a polypeptide immunogen, wherein at least two of the polypeptide immunogens have at least 90% amino acid sequence identity, optionally wherein the circular polyribonucleotide comprises at least three, at least four, at least five, at least six, at least seven, at least eight, or at least nine sequences, each sequence encoding a polypeptide immunogen.

11. The circular polyribonucleotide of claim 10, wherein each of the sequences encoding each of the polypeptide immunogens is operably linked to an internal ribosomal entry site (IRES).

12. The circular polyribonucleotide of claim 11, wherein each of the polypeptide immunogens is encoded by a single open-reading frame operably linked to a single IRES, wherein the expression of the open reading frame produces a polypeptide comprising the amino acid sequence of each the polypeptide immunogens, optionally wherein the polypeptide immunogens are each separated by a polypeptide linker or cleavage domain.

13. The circular polyribonucleotide of claim 11, wherein the circular polyribonucleotide comprises a plurality of IRESs, optionally wherein each IRES is operably linked to an open reading frame comprising a sequence encoding a polypeptide immunogen.

14. The circular polyribonucleotide of any one of claims 10-13, wherein the circular polyribonucleotide further comprises at least one sequence encoding an adjuvant, optionally wherein the at least one sequence encoding the adjuvant is operably linked to an IRES.

15. The circular polyribonucleotide of claim 14, wherein the adjuvant is a polypeptide, optionally wherein the adjuvant is a cytokine, a chemokine, a costimulatory molecule, an innate immune stimulator, a signaling molecule, a transcriptional activator, a cytokine receptor, a bacterial component, or a component of the innate immune system.

16. An immunogenic composition comprising (a) at least a first circular polyribonucleotide comprising a sequence encoding a first polypeptide immunogen and (b) at least a second circular polyribonucleotide comprising a sequence encoding a second polypeptide immunogen, wherein the first and second polypeptide immunogens have at least 90% amino acid sequence identity and less than 100% amino acid sequence identity.

17. The immunogenic composition of claim 16, wherein each polypeptide immunogen is operably linked to an IRES.

18. The circular polyribonucleotide or immunogenic composition of any one of claims 10-17, wherein each of the polypeptide immunogens comprises one or more epitopes that identifies a target, optionally wherein the target is a pathogen.

19. A pharmaceutical composition comprising the circular polyribonucleotide or immunogenic composition of any one of claims 1-18, and a pharmaceutically acceptable excipient.

20. The circular polyribonucleotide or immunogenic composition, or pharmaceutical composition of any one of claims 1-19 for use in inducing an immune response in a subject.

21. Use of the circular polyribonucleotide or immunogenic composition, or pharmaceutical composition of any one of claims 1-19 in the manufacture of a medicament for inducing an immune response in a subject.