What is claimed is:

1. A vaccine composition comprising an injectable oil-in-water (O/W) emulsion, comprising:
   (i) an aqueous solution comprising at least one immunogen;
   (ii) an aqueous solution comprising a hydrophilic ionic surfactant
   (iii) an optional aqueous solution comprising aluminum hydroxide
   (iv) a mineral oil;
   (v) a non-ionic lipophilic surfactant;
   (vi) a non-ionic hydrophilic surfactant having a high hydrophilic-lipophilic balance (HLB) value between 13 and 40; and
   (vii) a non-ionic hydrophilic surfactant having a low hydrophilic-lipophilic balance (HLB) value between 9 and 13.
2. The composition of claim 1, wherein the hydrophilic ionic surfactant is saponin and wherein the concentration of the saponin is between about 0.35 mg/dose and about 3.0 mg/dose and wherein the concentration of the aluminum hydroxide is between about 0% and about 1.0% (w/v).
3. The composition of claim 2, wherein the high HLB non-ionic hydrophilic surfactant is present at a concentration of 0.1 to 1.5% expressed as a weight by volume of emulsion (w/v), and wherein the percentage of the surfactants is from about 4% to about 8% weight/volume.
4. The composition of claim 2, wherein the low HLB non-ionic hydrophilic surfactant is present at a concentration of 1% to 8% expressed as a weight by volume of emulsion (w/v).
5. The composition of claim 2, wherein the non-ionic lipophilic surfactant is present at a concentration of 0.1% to 2.5% expressed as a weight by volume of emulsion (w/v).
6. The composition of claim 2, wherein the mineral oil is present at a concentration of 20% to 40% (v/v), and wherein the emulsion has a phase inversion temperature (PIT) of between about 33 °C to about 66 °C.
7. The composition of claim 2, wherein the low HLB non-ionic hydrophilic surfactant is selected from the group consisting of ethoxylated fatty acid triesters of sorbitan, ethoxylated fatty acid diesters of sorbitan, ethoxylated fatty acid monoesters of sorbitan, ethoxylated fatty alcohols, ethoxylated fatty acids ethoxylated castor oil and combinations thereof, and wherein the ester of said ethoxylated fatty acid ester is

selected from the group consisting of oleate, palmitate, stearate, isostearate, laurate and combinations thereof.

8. The composition of claim 2, wherein the non-ionic lipophilic surfactant is selected from the group consisting of fatty acid esters of sorbitan, fatty acid esters of mannide, di-ethoxylated fatty acid esters of mannide, tri- ethoxylated fatty acid esters of mannide, tetra-ethoxylated fatty acid esters of mannide and combinations thereof, and wherein the ester of the fatty acid esters is selected from the group consisting of oleate, palmitate, stearate, isostearate, laurate and combinations thereof.

9. The composition of claim 2, wherein the high HLB non-ionic hydrophilic surfactant is selected from the group consisting of ethoxylated fatty acid monoesters of sorbitan, ethoxylated fatty alcohols, ethoxylated fatty acids, non-ionic block-copolymer, and combinations thereof, and wherein the ethoxylated monoester of sorbitan is selected from the group consisting of ethoxylated sorbitan monolaurate, ethoxylated sorbitan monopalmitate, ethoxylated sorbitan monostearate, ethoxylated sorbitan monooleate, and combinations thereof.

10. The composition of claim 2, wherein the mineral oil is selected from the group consisting of paraffin oil, squalane, pristane, polyisobutene oil, hydrogenated polyisobutene oil, polydecene oil, polyisoprene oil, polyisopropene oil and, combinations thereof.

11. The composition of claim 2 which comprises a paraffin oil, a sorbitan fatty acid monoester as a non-ionic lipophilic surfactant, an ethoxylated fatty acid triester of sorbitan as a low HLB non-ionic hydrophilic surfactant and a non-ionic block-copolymer as a high HLB non-ionic hydrophilic surfactant.

12. The composition of claim 9, wherein the sorbitan fatty acid monoester is a sorbitan monooleate, the ethoxylated fatty acid triester of sorbitan is an ethoxylated trioleate of sorbitan and the non-ionic block-copolymer is a polyoxyethylene/polyoxypropylene polymer (POE-POP).

13. The composition of claim 12, wherein the paraffin oil is present at a concentration of 10% to 40%v/v, the sorbitan monooleate is present at a concentration of 0.2% to 1.5% w/v, the ethoxylated trioleate of sorbitan is present at a concentration of 2% to 5% w/v and the POE-POP is present at a concentration of 0.1% to 0.5%w/v.

14. The composition of claim 12, wherein the paraffin oil is present at a concentration of 29.3% v/v, the sorbitan monooleate is present at a concentration of 0.6% w/v, the

ethoxylated trioleate of sorbitan is present at a concentration of 3.4% w/v and the POE-POP is present at a concentration of 0.25% w/v.

15. The composition of claim 2, wherein the immunogen is selected from the group consisting of an inactivated pathogen, an attenuated pathogen, a subunit, a recombinant expression vector, and a plasmid or combinations thereof, and wherein the inactivated pathogen is selected from the group consisting of a virus, a bacterium, a fungus, protozoal parasite or combinations thereof.
16. The composition of claim 15, wherein the immunogen is an inactivated Foot-and-Mouth disease (FMD) virus, an inactivated porcine circovirus type 2 (PCV-2) virus, or an inactivated *Mycoplasma hyopneumoniae* bacterium.
17. A method for inducing an immunological response in an animal against a pathogen comprising administering to said animal a vaccine composition according to claim 15.
18. A method according to claim 17, wherein the immunogen is selected from the group consisting of an inactivated pathogen, an attenuated pathogen, a subunit, a recombinant expression vector, and a plasmid or combinations thereof.
19. A method according to claim 17, wherein the immunogen is selected from the group consisting of an inactivated *Mycoplasma hyopneumoniae* bacterium, an inactivated porcine circovirus type 2 (PCV-2) virus or combinations thereof.
20. The method of claim 19, wherein the administration is intramuscular (IM), intradermal (ID) or subcutaneous (SC) injection, or wherein the administration is done with a needleless injector.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A stable immunological composition comprising an injectable oil-in-water (O/W) emulsion, comprising:

(i) an aqueous solution comprising at least one immunogen;

(ii) an aqueous solution comprising a saponin in the amount of about 0.7 mg/dose to about 2.7 mg/dose;

(iii) an aqueous solution comprising aluminum hydroxide in the amount of about 0.065% w/v to about 0.42% w/v;

(iv) a mineral oil;

(v) a non-ionic lipophilic surfactant;

(vi) a non-ionic hydrophilic surfactant having a high hydrophilic-lipophilic balance (HLB) value between 13 and 40 selected from ethoxylated fatty acid monoesters of sorbitan, ethoxylated fatty acids, and combinations thereof; and

(vii) a non-ionic hydrophilic surfactant having a low hydrophilic-lipophilic balance (HLB) value between 9 and 13 selected from ethoxylated fatty acid triesters of sorbitan, ethoxylated fatty acid diesters of sorbitan, ethoxylated fatty acid monoesters of sorbitan, ethoxylated fatty acids, ethoxylated castor oil and, combinations thereof; and

wherein the final HLB of the emulsion is from about 9 to about 12.

2. A composition according to claim 1, which remains an O/W emulsion for at least about 24 months.

3. The composition of claim 1 or 2, wherein the concentration of the aluminum hydroxide is from about 0.37% (w/v) to about 0.42% (w/v).

4. The composition of any one of claims 1 to 3, wherein the high HLB non-ionic hydrophilic surfactant is present at a concentration of 0.1 to 1.5% expressed as a weight by volume of emulsion (w/v), and wherein the percentage of the surfactants is from about 4% to about 8% weight/volume.

5. The composition of any one of claims 1 to 4, wherein the low HLB non-ionic hydrophilic surfactant is present at a concentration of 1% to 8% expressed as a weight by volume of emulsion (w/v).

6. The composition of any one of claims 1 to 5, wherein the non-ionic lipophilic surfactant is present at a concentration of 0.1% to 2.5% expressed as a weight by volume of emulsion (w/v).

7. The composition of any one of claims 1 to 6, wherein the mineral oil is present at a concentration of 20% to 40% (v/v), and wherein the emulsion has a phase inversion temperature (PIT) of between about 36°C and 46°C.

8. The composition of any one of claims 1 to 7, wherein the low HLB non-ionic hydrophilic surfactant is selected from the group consisting of ethoxylated fatty acid triesters of sorbitan, and wherein the ester of said ethoxylated fatty acid ester is selected from the group consisting of oleate, palmitate, stearate, isostearate, laurate and combinations thereof.

9. The composition of any one of claims 1 to 8, wherein the non-ionic lipophilic surfactant is selected from the group consisting of fatty acid esters of sorbitan, and wherein the ester of the fatty acid esters is selected from the group consisting of oleate, palmitate, stearate, isostearate, laurate and combinations thereof.

10. The composition of any one of claims 1 to 9, wherein the high HLB non-ionic hydrophilic surfactant is selected from the group consisting of ethoxylated fatty acid monoesters of sorbitan, and wherein the ethoxylated monoester of sorbitan is selected from the group consisting of ethoxylated sorbitan monolaurate, ethoxylated sorbitan monopalmitate, ethoxylated sorbitan monostearate, ethoxylated sorbitan monooleate, and combinations thereof.

11. The composition of any one of claims 1 to 10, wherein the mineral oil is selected from the group consisting of paraffin oil, squalane, pristane, polyisobutene oil, hydrogenated polyisobutene oil, polydecene oil, polyisoprene oil, polyisopropene oil and, combinations thereof.

12. The composition of any one of claims 1 to 11 which comprises a paraffin oil, a sorbitan fatty acid monoester as a non-ionic lipophilic surfactant, an ethoxylated fatty acid triester of sorbitan as a low HLB non-ionic hydrophilic surfactant and a non-ionic block- copolymer as a high HLB non-ionic hydrophilic surfactant.

13. The composition of claim 12, wherein the sorbitan fatty acid monoester is a sorbitan monooleate, the ethoxylated fatty acid triester of sorbitan is an ethoxylated trioleate of sorbitan and the non-ionic block-copolymer is a polyoxyethylene/polyoxypropylene polymer (POE-POP).

14. The composition of any one of claims 1 to 13, wherein the paraffin oil is present at a concentration of 10% to 40%v/v, the sorbitan monooleate is present at a concentration of 0.2% to 1.5% w/v, the ethoxylated trioleate of sorbitan is present at a concentration of 2% to 5% w/v and the POE-POP is present at a concentration of 0.1% to 0.5%w/v.

15. The composition of any one of claims 1 to 14, wherein the paraffin oil is present at a concentration of 29.3% v/v, the sorbitan monooleate is present at a concentration of 0.6% w/v, the ethoxylated trioleate of sorbitan is present at a concentration of 3.4% w/v and the POE-POP is present at a concentration of 0.25% w/v.

16. The composition of any one of claims 1 to 15, wherein the immunogen is selected from the group consisting of an inactivated pathogen, an attenuated pathogen, a subunit, a recombinant expression vector, and a plasmid or combinations thereof, and wherein the inactivated pathogen is selected from the group consisting of a virus, a bacterium, a fungus, protozoal parasite or combinations thereof.

17. The composition of claim 16, wherein the immunogen is an inactivated Foot-and- Mouth disease (FMD) virus, an inactivated porcine circovirus type 2 (PCV-2) virus, or an inactivated Mycoplasma hyopneumoniae bacterium.

18. Use of a composition according to any one of claims 1 to 17, in the manufacture of a medicament for inducing an immunological response in an animal against an immunogen.

19. Use of a composition according to claim 18, wherein the immunogen is selected from the group consisting of an inactivated Mycoplasma hyopneumoniae bacterium, an inactivated porcine circovirus type 2 (PCV-2) virus or combinations thereof.