CLAIMS

1. A vector comprising a first and second nucleic acid, wherein the first nucleic acid encodes a toll-like receptor and the second nucleic acid encodes a toll-like receptor agonist.

2. The vector of claim 1, wherein the toll-like receptor agonist is flagellin.

3. The vector of claim 1, wherein the vector is an expression vector.

4. The vector of claim 3, wherein the vector is a mammalian expression vector.

5. The vector of claim 3, wherein the vector is expressed from an adenovirus, a lentivirus or a liposome.

6. The vector of claim 1, wherein the first nucleic acid is a secreted form of a toll-like receptor.

7. The vector of claim 2 wherein the flagellin is a secreted form of flagellin.

8. The vector of claim 1, wherein the toll-like receptor is TLR-5.

9. Use of an agent comprising the vector of claim 1 in the manufacture of a medicament for treating cancer in a mammal in need thereof.

10. The use of claim 9, wherein the cancer is a tumor.

11. The use of claim 10, wherein the tumor is derived from the group consisting of prostate, breast, colon, esophagus, stomach, lung, pancreatic, renal, thyroid, ovaries, throat, or the cervix.

12. The use of claim 10, wherein the tumor is derived from the group consisting of sarcomas, melenomas, leukemias, and lymphomas.

13. The use of claim 10, wherein the agent is administered in trans from the tumor of the mammal.

14. The use of claim 10, wherein the agent is administered directly into a tumor of the mammal.

15. The use of claim 9, wherein the agent is administered in combination with an immunostimulant.

16. The use of claim 15, wherein the immunostimulant is selected from the group consisting of growth hormone, prolactin and vitamin D.

17. The use of claim 16, wherein the growth hormone is somatotrophin.

18. The use of claim 9, wherein the agent is administered in combination with a cytokine.

19. The use of claim 18, wherein the cytokine is stem cell factor.

20. Use of an agent comprising the vector of claim 1 in the manufacture of a medicament for treating an infection in a mammal in need thereof.

21. The use of claim 20, wherein the infection is by an organism selected from the group consisting of a virus, a bacterium, a protozoan parasites, and a fungus.

CLAIMS

1. A vector comprising a first and second nucleic acid, wherein the first nucleic acid encodes a toll-like receptor and the second nucleic acid encodes a toll-like receptor agonist selected from the group consisting of heat shock proteins, high mobility group box 1, fibrinogen, fibronectin, RSV fusion protein, mouse mammary tumor virus envelope proteins, flagellin, and profilin.

2. The vector of claim 1, wherein the toll-like receptor agonist is flagellin.

3. The vector of claim 1, wherein the vector is an expression vector.

4. The vector of claim 3, wherein the vector is a mammalian expression vector.

5. The vector of claim 3, wherein the vector is expressed from an adenovirus, a lentivirus or a liposome.

6. The vector of claim 1, wherein the first nucleic acid is a secreted form of a toll-like receptor.

7. The vector of claim 2 wherein the flagellin is a secreted form of flagellin.

8. The vector of claim 1, wherein the toll-like receptor is TLR-5.

9. Use of an agent comprising the vector of claim 1 in the manufacture of a medicament for treating cancer in a mammal in need thereof .

10. The use of claim 9, wherein the cancer is a tumor.

11. The use of claim 10, wherein the tumor is derived from the group consisting of prostate, breast, colon, esophagus, stomach, lung, pancreatic, renal, thyroid, ovaries, throat, or the cervix.

12. The use of claim 10, wherein the tumor is derived from the group consisting of sarcomas, melenomas, leukemias, and lymphomas.

13. The use of claim 10, wherein the agent is administered in trans from the tumor of the mammal.

14. The use of claim 10, wherein the agent is administered directly into a tumor of the mammal.

15. The use of claim 9, wherein the agent is administered in combination with an immunostimulant.

16. The use of claim 15, wherein the immunostimulant is selected from the group consisting of growth hormone, prolactin and vitamin D.

17. The use of claim 16, wherein the growth hormone is somatotrophin.

18. The use of claim 9, wherein the agent is administered in combination with a cytokine.

19. The use of claim 18, wherein the cytokine is stem cell factor.

20. Use of an agent comprising the vector of claim 1 in the manufacture of a medicament for treating an infection in a mammal in need thereof.

21. The use of claim 20, wherein the infection is by an organism selected from the group consisting of a virus, a bacterium, a protozoan parasites, and a fungus.