WHAT IS CLAIMED IS:

1. Use of a fluoroquinolone antibiotic in the manufacture of a medicament for the treatment of a pulmonary bacterial infection, wherein a therapeutically effective amount of an aerosol of the fluoroquinolone antibiotic is to be administered; wherein the fluoroquinolone antibiotic is levofloxacin, wherein the pulmonary bacterial infection comprises *Pseudomonas aeruginosa* bacteria growing under anaerobic conditions, and wherein the bacteria is to be exposed to at least 0.75 mg/L of the fluoroquinolone antibiotic.

2. The use of Claim 1, wherein before the fluoroquinolone antibiotic is administered, the pulmonary bacterial infection is to be assayed for the presence of bacteria growing under anaerobic conditions.

3. The use of Claim 1 or 2, wherein the bacteria is capable of growing under anaerobic conditions using nitrate or nitrite.

4. The use of Claim 3, wherein before the fluoroquinolone antibiotic is administered, the pulmonary bacterial infection is to be assayed for the presence of bacteria capable of growing under anaerobic conditions using nitrate or nitrite.

5. The use of any one of claims 1 to 4, wherein the pulmonary bacterial infection is to be assayed for the presence of *Pseudomonas aeruginosa.*

6. The use of any one of Claims 1-5, wherein said pulmonary bacterial infection is identified as having at least a portion of said bacteria growing under anaerobic conditions.

7. The use of any one of Claims 1-6, wherein the pulmonary bacterial infection is in a subject with cystic fibrosis.

8. The use of any one of Claims 1-7, wherein the pulmonary bacterial infection is characterized by sputum comprising nitrate levels of at least 250 µM.

9. The use of any one of Claims 1-8, wherein the pulmonary bacterial infection is identified as having sputum comprising nitrate levels of at least 500 µM.

10. The use of any one of claims 1 to 9, wherein a therapeutically effective amount of an antibiotic selected from the group consisting of tobramycin, amikacin and aztreonam is not to be administered for the treatment of the pulmonary bacterial infection.

11. The use of any one of claims 1 to 10, wherein no other antibiotics are to be administered in a therapeutically effective amount for the treatment of the pulmonary bacterial infection.

12. The use of any one of claims 1 to 11, wherein the fluoroquinolone antibiotic is to be administered by intrapulmonary delivery.

13. The use of any one of Claims 1-12, where said therapeutically effective amount of fluoroquinolone is more than about 5 mg.

14. The use of any one of Claims 1-13, where said therapeutically effective amount of fluoroquinolone is no more than about 150 mg.

15. Use of a fluoroquinolone antibiotic in the manufacture of a medicament for the treatment of a *Pseudomonas aeruginosa* bacterial infection growing under anaerobic conditions, comprising an effective amount of a fluoroquinolone antibiotic to be exposed to said bacteria to inhibit the growth of said bacteria, wherein the bacteria is to be exposed to a mixture comprising at least 0.75 mg/L of the fluoroquinolone antibiotic; wherein the fluoroquinolone antibiotic is levofloxacin.

16. The use of claim 15, wherein a sample of said bacteria is to be assayed to determine that said bacteria is growing under anaerobic conditions, before administering the fluoroquinolone antibiotic.

17. The use of any claim 15 or claim 16,, wherein a sample of the bacteria is characterized by nitrate levels of at least 250 µM.

18. Use of a fluoroquinolone antibiotic in the manufacture of a medicament for the treatment of a *Pseudomonas aeruginosa* bacterial infection growing under anaerobic conditions comprising an effective amount of a fluoroquinolone antibiotic to be exposed to said bacteria to inhibit the growth of said bacteria, wherein the fluoroquinolone antibiotic is levofloxacin at a concentration ranging from 0.125 mg/L to 128 mg/L.

19. The use of any of claims 15 to 18, wherein the fluoroquinolone antibiotic is to be administered to a patient with a pulmonary bacterial infection caused by the *Pseudomonas aeruginosa* bacteria, for example wherein the fluoroquinolone antibiotic is to be administered to a cystic fibrosis patient with a pulmonary bacterial infection caused by the *Pseudomonas aeruginosa* bacteria.