Claims

1. An immunogenic composition which is a 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20-valent pneumococcal conjugate composition, comprising a glycoconjugate from *S. pneumoniae* serotype 15B, wherein said serotype 15B glycoconjugate comprises an isolated capsular polysaccharide from *S. pneumoniae* serotype 15B and a carrier protein, wherein said glycoconjugate is prepared using reductive amination in dimethylsulfoxide (DMSO), wherein said capsular polysaccharide from *S. pneumoniae* serotype 15B comprises at least 0.6 mM acetate per mM serotype 15B capsular polysaccharide and wherein said glycoconjugate comprises a serotype 15B polysaccharide having a molecular weight of between 150 kDa and 350 kDa and wherein said carrier protein is CRM_{197}.

2. The immunogenic composition of claim 1 comprising at least one glycoconjugate from *S. pneumoniae* serotype 22F.

3. The immunogenic composition of any one of claims 1-2 comprising at least one glycoconjugate from *S. pneumoniae* serotype 33F.

4. The immunogenic composition of any one of claims 1-3 comprising at least one glycoconjugate from *S. pneumoniae* serotype 12F.

5. The immunogenic composition of any one of claims 1-4 comprising at least one glycoconjugate from *S. pneumoniae* serotype 10A.

6. The immunogenic composition of any one of claims 1-5 comprising at least one glycoconjugate from *S. pneumoniae* serotype 11A.

7. The immunogenic composition of any one of claims 1-6 comprising at least one glycoconjugate from *S. pneumoniae* serotype 8.

8. The immunogenic composition of claim 1 comprising at least one glycoconjugate from *S. pneumoniae* serotype 15B, at least one glycoconjugate from *S. pneumoniae* serotype 22F and at least one glycoconjugate from *S. pneumoniae* serotype 33F.

9. The immunogenic composition of claim 1 comprising at least one glycoconjugate from *S. pneumoniae* serotype 15B, at least one glycoconjugate from *S. pneumoniae* serotype 22F, at least one glycoconjugate from *S. pneumoniae* serotype 33F, at least one glycoconjugate from *S. pneumoniae* serotype 12F, at least one glycoconjugate from *S. pneumoniae* serotype 10A, at least one glycoconjugate from *S. pneumoniae* serotype 11A and at least one glycoconjugate from *S. pneumoniae* serotype 8.

10. The immunogenic composition of any one of claims 1-9 further comprising glycoconjugates from *S. pneumoniae* serotypes 4, 6B, 9V, 14, 18C, 19F and 23F.

11. The immunogenic composition of any one of claims 1-10 further comprising glycoconjugates from *S. pneumoniae* serotypes 1, 5 and 7F.

12. The immunogenic composition of any one of claims 1-11 further comprising glycoconjugates from *S. pneumoniae* serotypes 6A and 19A.

13. The immunogenic composition of any one of claims 1-12 further comprising at least one glycoconjugate from *S. pneumoniae* serotype 3.

14. The immunogenic composition of any one of claims 1-9 further comprising glycoconjugates from *S. pneumoniae* serotypes 1, 4, 5, 6B, 7F, 9V, 14, 18C, 19F and 23F.

15. The immunogenic composition of any one of claims 1-13 which is a 14, 15, 16, 17, 18 or 19-valent pneumococcal conjugate composition.

16. The immunogenic composition of any one of claims 1-13 which is a 16-valent pneumococcal conjugate composition.

17. The immunogenic composition of any one of claims 1-13 which is a 19-valent pneumococcal conjugate composition.

18. The immunogenic composition of any one of claims 1-13 which is a 20-valent pneumococcal conjugate composition.

19. The immunogenic composition of any one of claims 1-18 wherein said glycoconjugates are individually conjugated to CRM_{197}.

20. The immunogenic composition of any one of claims 1-18 wherein all glycoconjugates are individually conjugated to CRM_{197}.

21. The immunogenic composition of claim 14 wherein the glycoconjugates from *S. pneumoniae* serotypes 1, 4, 5, 6B, 7F, 9V, 14 and 23F are individually conjugated to PD (*Haemophilus influenzae* protein D).

22. The immunogenic composition of claim 10, 14 or 21 wherein the glycoconjugate from *S. pneumoniae* serotype 18C is conjugated to TT (Tetanus Toxoid).

23. The immunogenic composition of claim 10, 14 or 21-22 wherein the glycoconjugate from *S. pneumoniae* serotype 19F is conjugated to DT (Diphtheria Toxoid).

24. The immunogenic composition of any one of claims 1-23 wherein, said serotype 15B glycoconjugate has a molecular weight of between 1000 kDa and 20,000 kDa.

25. The immunogenic composition of any one of claims 1-24 wherein, said serotype 15B glycoconjugate has a molecular weight of between 10,000 and 16,000 KDa.

26. The immunogenic composition of any one of claims 1-25 wherein, the ratio (w/w) of serotype 15B capsular polysaccharide to carrier protein in said serotype 15B glycoconjugate is between 0.5 and 3.

27. The immunogenic composition of any one of claims 1-26 wherein, the ratio (w/w) of serotype 15B capsular polysaccharide to carrier protein in said serotype 15B glycoconjugate is between 0.7 and 0.9.

28. The immunogenic composition of any one of claims 1-27 wherein said serotype 15B glycoconjugate comprises less than about 50% of free serotype 15B capsular polysaccharide compared to the total amount of serotype 15B capsular polysaccharide.

29. The immunogenic composition of any one of claims 1-28 wherein at least 40% of the serotype 15B glycoconjugates have a K_d below or equal to 0.3 in a CL-4B column.

30. The immunogenic composition of any one of claims 1-29 wherein said serotype 15B glycoconjugate comprises a capsular polysaccharide from *S. pneumoniae* serotype 15B which comprises at least 0.7 mM acetate per mM serotype 15B capsular polysaccharide.

31. The immunogenic composition of any one of claims 1-30 wherein said serotype 15B glycoconjugate comprises a capsular polysaccharide from *S. pneumoniae* serotype 15B which comprises at least 0.1 mM glycerol per mM serotype 15B capsular polysaccharide.

32. The immunogenic composition of any one of claims 1-31 wherein said serotype 15B glycoconjugate comprises a capsular polysaccharide from *S. pneumoniae* serotype 15B which comprises at least 0.5 mM glycerol per mM serotype 15B capsular polysaccharide.

33. The immunogenic composition of any one of claims 1-32 wherein said serotype 15B glycoconjugate comprises a capsular polysaccharide from *S. pneumoniae* serotype 15B which comprises at least 0.7 mM glycerol per mM serotype 15B capsular polysaccharide.

34. The immunogenic composition of any one of claims 1-33 wherein the number of conjugated lysines to the capsular polysaccharide from *S. pneumoniae* serotype 15B in the carrier protein of said serotype 15B glycoconjugate is between 2 and 15.

35. The immunogenic composition of any one of claims 2, 8 or 9 wherein, said serotype 22F glycoconjugate has a molecular weight of between 1000 kDa and 12,500 kDa and comprises an isolated capsular polysaccharide from *S. pneumoniae* serotype 22F and a carrier protein, wherein the ratio (w/w) of the polysaccharide to the carrier protein is between 0.4 and 2 and wherein said serotype 22F glycoconjugate comprises at least 0.1 mM acetate per mM serotype 22F capsular polysaccharide.

36. The immunogenic composition of any one of claims 1-35 wherein each dose comprise 0.1 to 100 µg of polysaccharide of each serotype.

37. The immunogenic composition of any one of claims 1-36 wherein each dose comprise about 1.0 µg, about 1.2 µg, about 1.4 µg, about 1.6 µg, about 1.8 µg, 2.0 µg, about 2.2 µg, about 2.4 µg, about 2.6 µg, about 2.8 µg, about 3.0 µg, about 3.2 µg, about 3.4 µg, about 3.6 µg, about 3.8 µg, about 4.0 µg, about 4.2 µg, about 4.4 µg, about 4.6 µg, about 4.8 µg, about 5.0 µg, about 5.2 µg, about 5.4 µg, about 5.6 µg, about 5.8 µg or about 6.0 µg of polysaccharide for each particular glycoconjugate.

38. The immunogenic composition of any one of claims 1-37 wherein each dose comprise 1.5 µg to 3.0 µg of polysaccharide for each glycoconjugate from *S. pneumoniae* serotype 1, 3, 4, 5, 6A, 7F, 8, 9V, 10A, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F and/or 33F, if present, and 3.0 µg to 6.0 µg of polysaccharide for glycoconjugate from *S. pneumoniae* serotype 6B, if present.

39. The immunogenic composition of any one of claims 1-38 wherein each dose comprises 10 µg to 150 µg of carrier protein.

40. The immunogenic composition of any one of claims 1-39 wherein said immunogenic composition further comprise antigens from other pathogens.

41. The immunogenic composition of any one of claims 1-40 wherein said immunogenic composition further comprise antigens selected from: a diphtheria toxoid (D), a tetanus toxoid (T), a pertussis antigen (P), which is typically acellular (Pa), a hepatitis B virus (HBV) surface antigen (HBsAg), a hepatitis A virus (HAV) antigen, a conjugated Haemophilus influenzae type b capsular saccharide (Hib), inactivated poliovirus vaccine (IPV).

42. The immunogenic composition of any one of claims 1-41 wherein said immunogenic composition further comprise a conjugated *N. meningitidis* serogroup A capsular saccharide (MenA), a conjugated *N. meningitidis* serogroup W135 capsular saccharide (MenW135), a conjugated *N. meningitidis* serogroup Y capsular saccharide (MenY), and/or a conjugated *N. meningitidis* serogroup C capsular saccharide (MenC).

43. The immunogenic composition of any one of claims 1-42 wherein said immunogenic composition further comprise at least one adjuvant.

44. The immunogenic composition of any one of claims 1-42 wherein said immunogenic composition further comprise at least one adjuvant selected from the group consisting of alum (e.g., aluminum phosphate, aluminum sulfate or aluminum hydroxide), calcium phosphate, liposomes, oil-in-water emulsions such as MF59 (4.3% w/v squalene, 0.5% w/v polysorbate 80 (Tween 80), 0.5% w/v sorbitan trioleate (Span 85)), water-in-oil emulsions such as Montanide, and poly(D,L-lactide-co-glycolide) (PLG) microparticles or nanoparticles.

45. The immunogenic composition of any one of claims 1-42 wherein said immunogenic composition further comprise at least one adjuvant selected from the group consisting of aluminum phosphate, aluminum sulfate and aluminum hydroxide.

46. The immunogenic composition of any one of claims 1-45 comprising a buffer.

47. The immunogenic composition of claim 46 whererin said buffer is succinate at a final concentration of about 5 mM.

48. The immunogenic composition of any one of claims 1-47 comprising a salt.

49. The immunogenic composition of claim 48 comprising sodium chloride at 150 mM.

50. The immunogenic compositions of any one of claims 1-49 comprising a surfactant.

51. The immunogenic composition of claim 50 wherein said surfactant is polysorbate 80.

52. The immunogenic composition of claim 51 wherein the final concentration of the polysorbate 80 in the formulation is 0.01%, 0.02%, 0.03%, 0.04%, 0.05%, 0.06%, 0.07%, 0.08%, 0.09% or 0.1% polysorbate 80 (w/w).

53. The immunogenic composition of any one of claims 1-52 having a pH of 5.8 to 6.0.

54. A syringe filled with any of the immunogenic composition defined at any one of claims 1-53.

55. The immunogenic composition of any one of claims 1-53 for use as a vaccine.

56. The immunogenic composition of any one of claims 1-53 for use in a method for preventing, treating or ameliorating a bacterial infection, disease or condition in a subject.

57. The immunogenic composition of any one of claims 1-53 for use in a method to protect or treat a human susceptible to pneumococcal infection, by means of administering said immunogenic compositions via a systemic or mucosal route.

58. Use of an immunogenic composition according to any one of claims 1-53 in the manufacture of a medicament for preventing, treating or ameliorating an infection, disease or condition associated with *S. pneumoniae* serotype 15B.

59. The immunogenic composition of any one of claims 1-53 which is able to induce the formation of antibodies capable of binding to *S. pneumonia* serotype 15B and 15C as measured by a standard ELISA assay when administered to a subject

60. The immunogenic composition of any one of claims 1-53 which is able, when administered to a subject, to induce the formation of antibodies capable of killing *S. pneumoniae* serotypes 15B and 15C in an opsonophagocytosis assay.

61. Use of an immunogenic composition according to any one of claims 1-53 in the manufacture of a medicament for treating or preventing a *S. pneumoniae* infection, disease or condition associated with *S. pneumoniae* serotype 15B.

62. Use of an immunogenic composition according to any one of claims 1-53 in the manufacture of a medicament for protecting a subject against an infection with serotype 15B *S. pneumoniae* and/or preventing infection with serotype 15B *S. pneumoniae*, and/or for reducing the severity of or delaying the onset of at least one symptom associated with an infection caused by serotype 15B *S. pneumoniae*.

63. Use of an immunogenic composition according to any one of claims 1-53 in the manufacture of a medicament for protecting a subject against an infection induced by *S. pneumoniae* serotype 15B in a subject, wherein the infection is selected from the group consisting of pneumonia, sinusitis, otitis media, acute otitis 25 media, meningitis, bacteremia, sepsis, pleural empyema, conjunctivitis, osteomyelitis, septic arthritis, endocarditis, peritonitis, pericarditis, mastoiditis, cellulitis, soft tissue infection and brain abscess.