Claims

1. An immunogenic composition comprising an isolated *S. aureus* clumping factor A (ClfA) polypeptide, an isolated *S.aureus* capsular polysaccharide type 5 conjugated to CRM197, and an isolated *S. aureus* capsular polysaccharide type 8 conjugated to CRM197, wherein the capsular polysaccharide type 5 is a high molecular weight capsular polysaccharide of between 70 and 300 kDa, and wherein the capsular polysaccharide type 8 is a high molecular weight capsular polysaccharide of between 70 and 300 kDa.

2. The immunogenic composition of claim 1, wherein the high molecular weight capsular polysaccharide type 5 has a molecular weight of between 70 and 150 kDa.

3. The immunogenic composition of any of claims 1 or 2, wherein the high molecular weight capsular polysaccharide type 8 has a molecular weight of between 70 and 150 kDa.

4. The immunogenic composition of any of claims 1-3, further comprising an isolated *S. aureus* MntC protein.

5. The immunogenic composition of any of claims 1-4, further comprising an isolated *S. aureus* clumping factor B (ClfB) polypeptide.

6. The immunogenic composition of any of claims 1-5, wherein the ClfA polypeptide is a polypeptide fragment comprising the fibrinogen binding domain of ClfA.

7. The immunogenic composition of claim 6, wherein the ClfA polypeptide fragment is a fibrinogen binding domain comprising the N1, N2 and N3 domains of ClfA or wherein the ClfA polypeptide fragment is a fibrinogen binding domain comprising the N2 and N3 domains of ClfA.

8. The immunogenic composition of any of claims 5-7 wherein the ClfB polypeptide is a polypeptide fragment comprising the fibrinogen binding domain of ClfB.

9. The immunogenic composition of claim 8, wherein the ClfB polypeptide fragment is a fibrinogen binding domain comprising the N1, N2 and N3 domains of ClfB or wherein the ClfB polypeptide fragment is a fibrinogen binding domain comprising the N2 and N3 domains of ClfB.

10. The immunogenic composition according to any of claims 1-9, wherein the fibrinogen binding domain of ClfA binds to fibrinogen at a reduced level compared to the binding observed to fibrinogen with the native fibrinogen binding domain of ClfA.

11. The immunogenic composition of claim 10, wherein the ClfA polypeptide has an amino acid substitution at one or more of Tyr 338, Tyr 256, Pro 336, Lys 389, Ala 254 or Ile 387.

12. The immunogenic composition of claim 11, wherein the amino acid substitution is to Ala or Ser.

13. The immunogenic composition of claim 12, wherein the Tyr 338 is substituted to Ala.

14. The immunogenic composition of any of claims 1-13, wherein the capsular polysaccharide type 5 is between 10% and 100% O acetylated, between 50 and 100% O acetylated or between 75% and 100% O acetylated.

15. The immunogenic composition of any of claims 1-14, wherein the capsular polysaccharide type 8 is between 10% and 100% O acetylated, between 50 and 100% O acetylated, or between 75% and 100% O acetylated.

16. The immunogenic composition of any of claims 4-15 wherein the *S. aureus* MntC protein is a lipidated protein.

17. The immunogenic composition of any of claims 4-15 wherein the *S. aureus* MntC protein is a non-lipidated protein.

18. The immunogenic composition of any of claims 1-17, further comprising an adjuvant.

19. The immunogenic composition of any of claims 1-18, further comprising a pharmaceutically acceptable carrier.

20. The immunogenic composition of any of claims 1-19, further comprising an antigen selected from the group consisting of Opp3a, DltD, HtsA, LtaS, IsdA, IsdB, IsdC, SdrC, SdrD, SdrE, SdrF, SdrG, SdrH, SrtA, SpA, Sbi, FmtB, alphahemolysin (hla), beta-hemolysin, fibronectin-binding protein A (fnbA), fibronectin-binding protein B (fnbB), coagulase, Fig, map, Panton-Valentine leukocidin (pvl), alpha-toxin and its variants, gamma toxin (hlg) and variants, ica, immunodominant ABC transporter, Mg2+ transporter, Ni ABCtransporter, RAP, autolysin, laminin receptors, IsaA/PisA, IsaB/PisB, SPOIIIE, SsaA, EbpS, Sas A, SasF, SasH, EFB (FIB), SBI, Npase, EBP, bone sialo binding protein II, aureolysin precursor (AUR)/Seppl, Cna, and fragments thereof such as M55, TSST-1, mecA, poly-N acetylglucosamine (PNAG/dPNAG) exopolysaccharide, GehD, EbhA, EbhB, SSP-1, SSP-2, HBP, vitronectin binding protein, HarA, EsxA, EsxB, Enterotoxin A, Enterotoxin B, Enterotoxin C1, and novel autolysin.