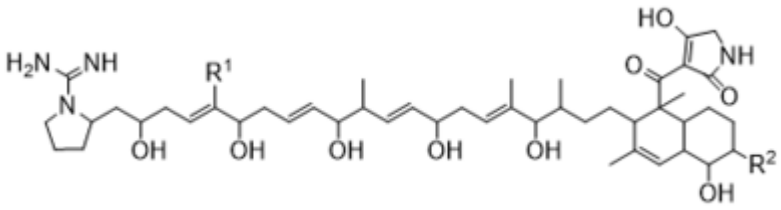
CLAIMS

1. A method of modulating production of a secondary metabolite in an *actinomycetes* bacterium, the method comprising increasing the expression or activity of the Sporulation and Antibiotic Production Related gene A (SarA) polypeptide to modulate production of the metabolite in the *actinomycetes* bacterium,
   wherein the secondary metabolite is valinomycin, daidzein, fluvirucin or demethyllydicamycin or a compound having the formula of:



   wherein R^1 is H or Me and wherein R^2 is H or OH.

2. The method of claim 1 or 2, wherein the method increases or decreases the production of the secondary metabolite in the *actinomycetes* bacterium.

3. The method of claim 1, wherein the *actinomycetes* bacterium is a *Streptomyces* bacterium.

4. The method of any one of claims 1 to 3, wherein the method comprises genetically modifying the *actinomycetes* bacterium to have increased expression or activity of the SarA polypeptide.

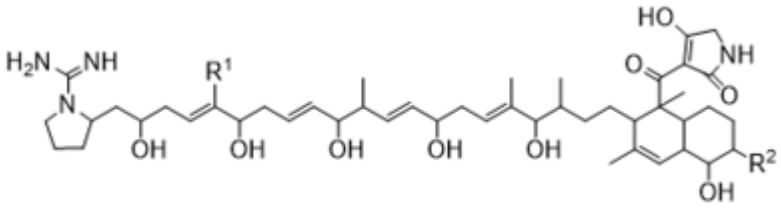
5. The method of any one of claim 1 to 4, wherein the method comprises introducing an expression construct comprising a heterologous SarA gene that is operably linked to a promoter to the *actinomycetes* bacterium.

6. The method of any one of claim 1 to 5, wherein the method comprises culturing the *actinomycetes* bacterium so as to modulate the production of the secondary metabolite in the *actinomycetes* bacterium.

7. A method of screening for a secondary metabolite produced by an *actinomycetes*

bacterium, the method comprising a) increasing the expression or activity of the Sporulation and Antibiotic Production Related gene A (SarA) polypeptide in the *actinomycetes* bacterium to modulate production of the secondary metabolite in the *actinomycetes* bacterium: and b) screening for production of the secondary metabolite in the *actinomycetes* bacterium,

wherein the secondary metabolite is valinomycin, daidzein, fluvirucin or demethyllydicamycin or a compound having the formula of:

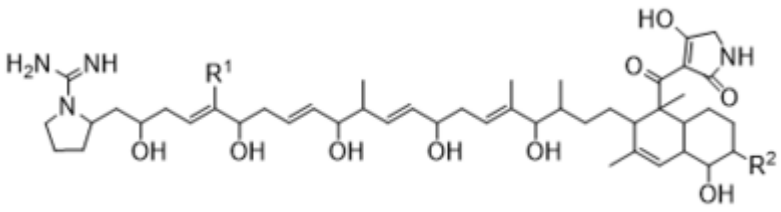


wherein R^1 is H or Me and wherein R^2 is H or OH.

8. The method of claim 6, wherein the method comprises introducing an expression construct comprising a heterologous SarA gene that is operably linked to a promoter.

9. A method of preparing a drug compound library, the method comprising a) increasing the expression or activity of the Sporulation and Antibiotic Production Related gene A (SarA) polypeptide in an *actinomycetes* bacterium to modulate production of secondary metabolites in the *actinomycetes* bacterium: and b) isolating secondary metabolites from the *actinomycetes* bacterium to prepare the drug compound library.

10. Use of an *actinomycetes* bacterium engineered to overexpress the Sporulation and Antibiotic Production Related gene A (SarA) gene for producing a secondary metabolite, wherein the secondary metabolite is valinomycin, daidzein, fluvirucin or demethyllydicamycin or a compound having the formula



of:

wherein R^1 is H or Me and wherein R^2 is H or OH.