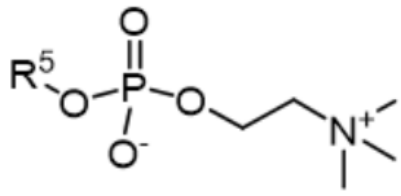
CLAIMS

1. A composition comprising a therapeutically effective amount of at least one antibiotic and at least one phospholipid, for use in the treatment of bacterial chronic rhinosinusitis (CRS) in a subject, wherein the at least one phospholipid is represented by formula II, or a pharmaceutically acceptable salt or solvate thereof:

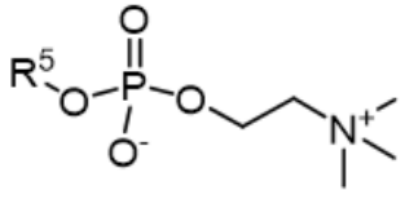


II

wherein:

$R_5$ is a saturated or unsaturated $C_{11}$, $C_{12}$, $C_{13}$, $C_{14}$, or $C_{15}$ alkyl chain.

2. Use of a composition comprising a therapeutically effective amount of at least one antibiotic and at least one phospholipid, in the manufacture of a medicament for the treatment of bacterial chronic rhinosinusitis (CRS) in a subject, wherein the at least one phospholipid is represented by formula II, or a pharmaceutically acceptable salt or solvate thereof:



II

wherein:

$R_5$ is a saturated or unsaturated $C_{11}$, $C_{12}$, $C_{13}$, $C_{14}$, or $C_{15}$ alkyl chain.

3. The composition for use of claim 1 or use of claim 2, wherein R5 is a saturated or unsaturated $C_{12}$, $C_{13}$, or $C_{14}$ alkyl chain.

4. The composition for use of claim 1 or use of claim 2, wherein R5 is a saturated $C_{11}$, $C_{12}$, $C_{13}$, $C_{14}$, or $C_{15}$ alkyl chain.

5. The composition for use of claim 1 or use of claim 2, wherein when $R_5$ is an unsaturated alkyl chain $R_5$ has between 1 to 3 double bonds having a *cis*-configuration, a *trans*-configuration, or a mixture of *cis*- and *trans*-configurations.

6. The composition for use of claim 1 or use of claim 2, wherein the phospholipid is dodecylphosphocholine, or a pharmaceutically acceptable salt or solvate thereof.

7. The composition for use of claim 1 or use of claim 2, wherein the phospholipid is tetradecylphosphocholine, or a pharmaceutically acceptable salt or solvate thereof.

8. The composition for use of claim 1 or use of claim 2, wherein the phospholipid and the antibiotic are configured to be administered to the subject simultaneously.

9. The composition for use of claim 1 or use of claim 2, wherein a pharmaceutical composition comprising the phospholipid and the antibiotic are to be administered through a nasal sinus of the subject.

10. The composition for use or use of claim 9, wherein the pharmaceutical composition is a dry composition, an aerosolized composition or a liquid composition.

11. The composition for use or use of claim 9, wherein the pharmaceutical composition is to be administered to the subject via an inhaler, a syringe device, an aerosol device or a nebulizer.

12. The composition for use or use of claim 9, wherein the pharmaceutical composition is to be administered to the subject in combination with a steroid or an antifungal compound.

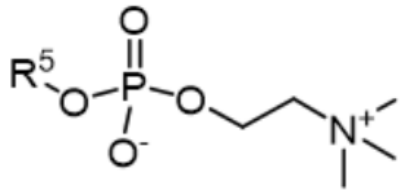
13. The composition for use of claim 1 or use of claim 2, wherein the composition is configured to improve sinus symptoms, lower volume of nasal fluid or post-nasal drip, partially or completely remove biofilm in a sinus, or decrease the appearance of inflammation in the sinus in the subject.

14. The composition for use of claim 1 or use of claim 2, wherein the composition disrupts pre-formed bacterial biofilm, prevents the formation of bacterial biofilm, or a combination of the foregoing.

15. The composition for use or use of claim 14, wherein the bacterium is present in a sinonasal passage of the subject.

16. The composition for use of claim 1 or use of claim 2, wherein the at least one antibiotic comprises gentamicin, tobramycin, or a combination of the foregoing.

17. A therapeutic kit or pharmaceutical composition for use in the treatment of chronic rhinosinusitis (CRS), comprising at least one antibiotic and at least one phospholipid, wherein the phospholipid is represented by formula II, or a pharmaceutically acceptable salt or solvate thereof:

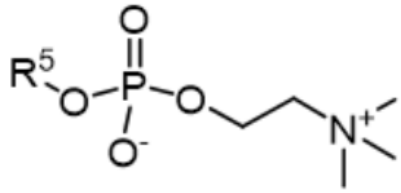


II

wherein:

$R_5$ is a saturated or unsaturated $C_{11}$, $C_{12}$, $C_{13}$, $C_{14}$, or $C_{15}$ alkyl chain.

18. Use of a therapeutic kit or pharmaceutical composition in the manufacture of a medicament for the treatment of chronic rhinosinusitis (CRS), wherein the therapeutic kit or pharmaceutical composition comprises at least one antibiotic and at least one phospholipid, wherein the phospholipid is represented by formula II, or a pharmaceutically acceptable salt or solvate thereof:



II

wherein:

$R_5$ is a saturated or unsaturated $C_{11}$, $C_{12}$, $C_{13}$, $C_{14}$, or $C_{15}$ alkyl chain.

19. The kit or composition for use of claim 17, or the use of claim 18, wherein the at least one phospholipid is dodecylphosphocholine, or a pharmaceutically acceptable salt or solvate thereof, or tetradecylphosphocholine, or a pharmaceutically acceptable salt or solvate thereof, and the at least one antibiotic comprises one or both of gentamicin and tobramycin.

20. The kit or composition for use of claim 17, or the use of claim 18, wherein $R_5$ is a saturated $C_{11}$, $C_{12}$, $C_{13}$, $C_{14}$, or $C_{15}$ alkyl chain.

21. The kit or composition for use of claim 17, or the use of claim 18, wherein $R_5$ is a saturated or unsaturated $C_{12}$, $C_{13}$, or $C_{14}$, alkyl chain.

22. The kit or composition for use of claim 17, or the use of claim 18, wherein when $R_5$ is an unsaturated alkyl chain $R_5$ has between 1 to 3 double bonds having a *cis*-configuration, a *trans*-configuration, or a mixture of *cis*- and *trans*- configurations.

23. The kit or composition for use of claim 17, or the use of claim 18, wherein the at least one antibiotic comprises gentamicin, tobramycin, or a combination of the foregoing.