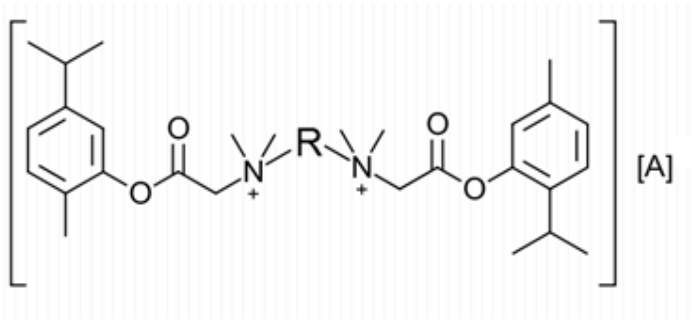
Claims

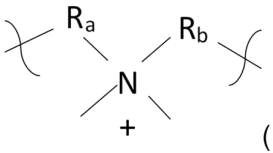
1. A compound having the following formula:



(*I*)

wherein R is an alkane chain having between 8 and 20 carbon atoms, and A is one or more anions having a total charge of -2;

or R is a quaternary amine having the following formula:



(*Ia*)

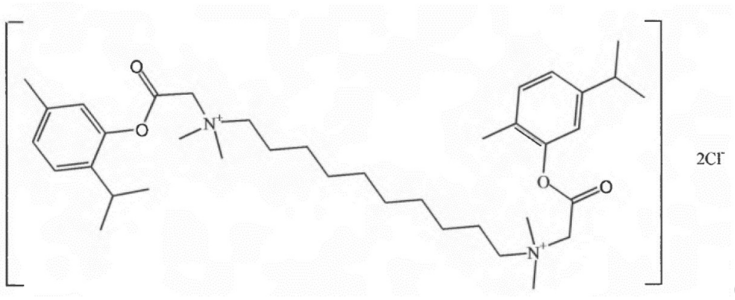
wherein R_a and R_b are each an alkane chain having between 8 and 20 carbon atoms, and A is one or more anions having a total charge of -3.

2. A compound according to claim 1, wherein R is a saturated linear alkane chain having between 8 and 16 carbon atoms.

3. A compound according to claim 1, wherein R_a and R_b are saturated linear alkane chains having between 8 and 16 carbon atoms.

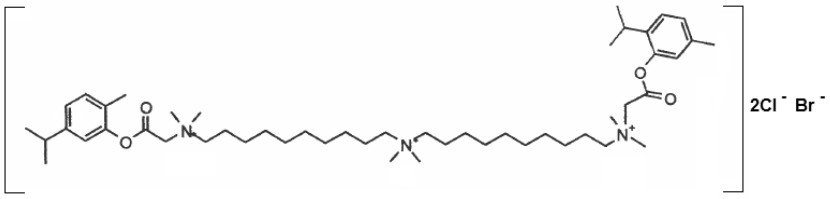
4. A compound according to any preceding claim, wherein the one or more anions are selected from chloride anions and bromide anions.

5. A compound according to any preceding claim having the following formula:



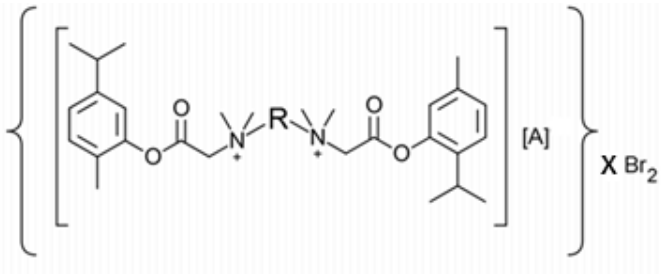
(*II*)

or



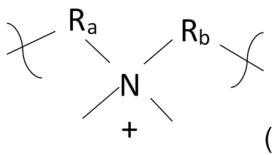
(*III*)

6. A compound having the following formula:



(*IV*)

wherein R is an alkane chain having between 8 and 20 carbon atoms and A is one or more anions having a total charge of -2; or R is a quaternary amine having the following formula:



(*Ia*)

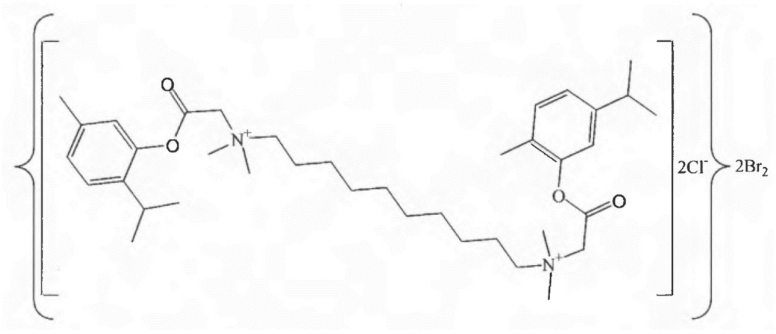
wherein R_a and R_b are each an alkane chain having between 8 and 20 carbon atoms, and A is one or more anions having a total charge of -3; and wherein X is 2, 4, 6, 8 or 10.

7. A compound according to claim 6, wherein R is a saturated linear alkane chain having between 8 and 16 carbon atoms.

8. A compound according to claim 6, wherein R_a and R_b are saturated linear alkane chains having between 8 and 16 carbon atoms.

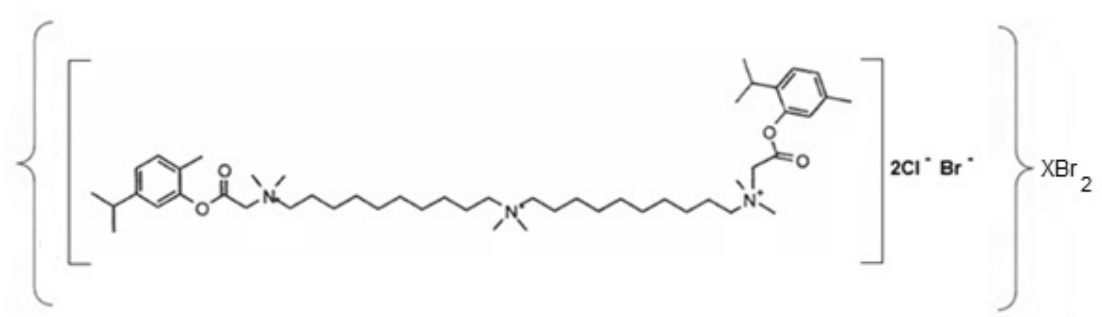
9. A compound according to any of claims 6, 7 or 8, wherein the one or more anions are selected from chloride anions and bromide anions.

10. A compound according to any of claims 6, 7, 8 or 9 having the following formula:



(*V*)

or



(VI) wherein X is 4, 8 or 10.

11. A pharmaceutical composition comprising the compound of any preceding claim.

12. A pharmaceutical composition according to claim 11, further comprising a pharmaceutically acceptable carrier.

13. A compound according to any of claims 1 to 10 for use as a medicament.

14. A compound according to any of claims 1 to 10 for use in the treatment of fungal infections and/or bacterial infections.

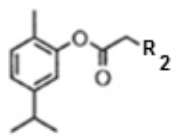
15. A compound according to any of claims 1 to 10 for use in the treatment of Herpes virus and/or Human Papilloma virus.

16. A compound for use according to claim 15 wherein the Herpes virus is a Herpes Simplex virus or Cytomegalovirus.

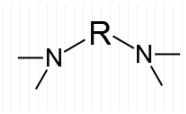
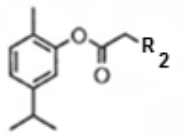
17. A compound for use according to claim 16, wherein the Herpes Simplex virus is Herpes Simplex virus 1 or Herpes Simplex virus 2.

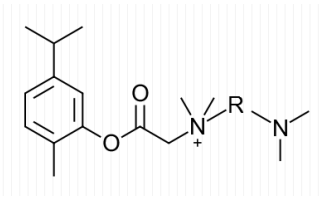
18. A process for producing the compound of any one of claims 1 to 5 comprising:

i) reacting carvacrol with R_2CH_2COCl to form a compound having the formula:



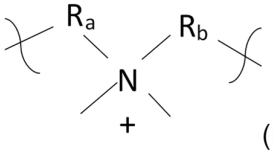
(*VII*), wherein R_2 is a halogen, for example chlorine or bromine;

ii) reacting a compound having the formula  (*VIII*) with the compound having the formula  (*VII*) to form the compound having the formula



(*IX*),

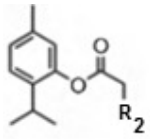
wherein R is an alkane chain having between 8 and 20 carbon atoms; or R is a quaternary amine having the following formula:

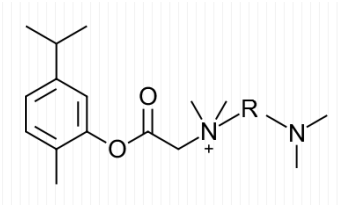


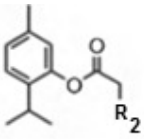
(Ia)

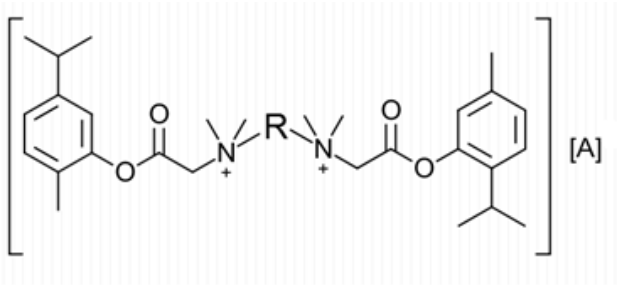
wherein R_a and R_b are each an alkane chain having between 8 and 20 carbon atoms;

iii) reacting thymol with R_2CH_2COCl to form a compound having the formula

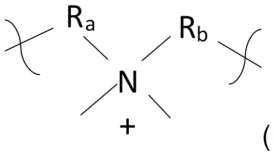
 (*X*), wherein R_2 is a halogen, for example chlorine or bromine;

iv) reacting the compound having formula  (*IX*)

with the compound having the formula  (*X*) to form the final product having the formula

 (*I*)

wherein R is an alkane chain having between 8 and 20 carbon atoms, and A is one or more anions having a total charge of -2 ; or R is a quaternary amine having the following formula:

 (Ia)

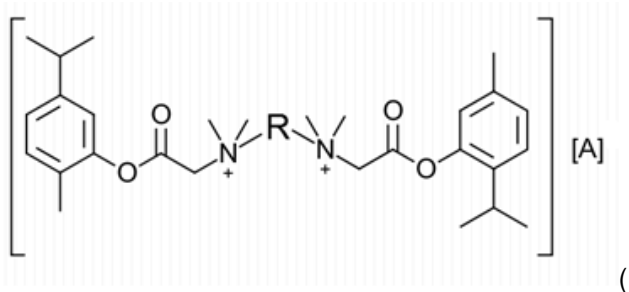
wherein R_a and R_b are each an alkane chain having between 8 and 20 carbon atoms, and A is one or more anions having a total charge of -3.

19. A process according to claim 18, wherein R is a saturated linear alkane chain having between 8 and 16 carbon atoms.

20. A process according to claim 18 wherein R_a and R_b are each a saturated linear alkane chain having between 8 and 16 carbon atoms.

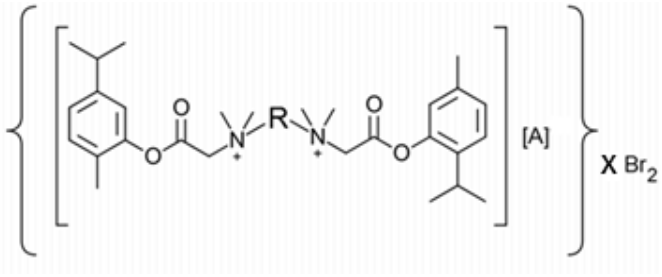
21. A process according to any of claims 18 to 20, further comprising one or more steps of separation and/or extraction.

22. A process for the production of a compound according to any of claims 6 to 10, comprising reacting the compound having the formula



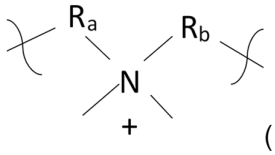
(*II*)

with bromine to form a compound having the formula



(*IV*)

wherein R is an alkane chain having between 8 and 20 carbon atoms and A is one or more anions having a total charge of -2; or R is a quaternary amine having the following formula:



(Ia)

wherein R_a and R_b are each an alkane chain having between 8 and 20 carbon atoms, and A is one or more anions having a total charge of -3; and wherein X is 2, 4, 6, 8 or 10.

23. Use of a compound according to any of claims 1 to 10 in the manufacture of a medicament for treating fungal infections and/or bacterial infections.

24. Use of a compound according to any of claims 1 to 10 in the manufacture of a medicament for treating Herpes virus and/or Human Papilloma virus.

25. The use according to claim 24, wherein the Herpes virus is a Herpes Simplex virus or Cytomegalovirus.

26. The use according to claim 25, wherein the Herpes Simplex virus is Herpes Simplex virus 1 or Herpes Simplex virus 2.