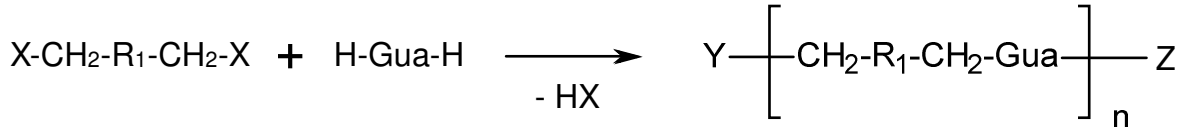
CLAIMS:

1. A method for preparing polycondensation products from guanidine, aminoguanidine or diaminoguanidine G with one or more benzyl or allyl derivatives BA according to the following reaction scheme:



BA G (I), (II), (III)

wherein

each X independently represents a leaving group;

each R_1 independently represents either an aromatic ring system with at least one aromatic ring, optionally containing one or more hetero atoms selected from O, N and S and optionally being substituted with one or two vinyl groups to which the -CH_2-X group(s) is/are bound, or represents ethylene;

Gua represents a guanidindiyl, aminoguanidindiyl or diaminoguanidindiyl residue;

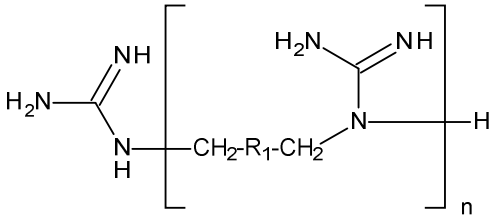
Y represents H-Gua, and

Z represents H; or

Y and Z together represent a chemical bond to obtain a cyclic structure; and

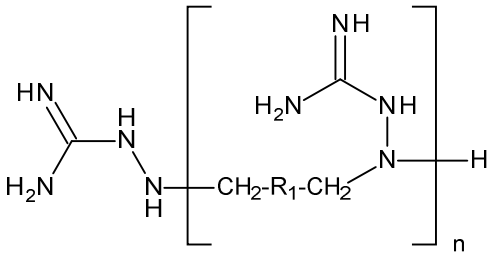
n is ≥ 2;

wherein at least one benzyl or allyl derivative BA is subjected to a polycondensation reaction with excessive guanidine, aminoguanidine or diaminoguanidine G upon elimination of HX in order to provide a polyguanidine corresponding to the following formula (I), (II) or (III):



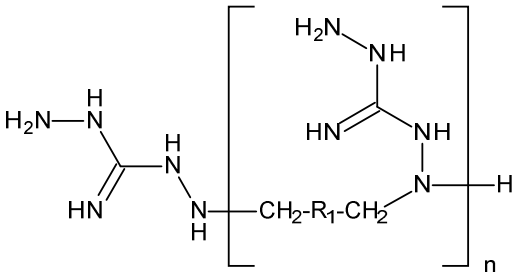
,

(I)



,

(II)



,

(III)

or having a cyclic structure resulting from cyclization upon elimination of a corresponding guanidine, or a salt of said polyguanidine.

2. The method of Claim 1, characterized in that R_1 is selected from divalent residues of optionally substituted benzene, divinylbenzene, furan, pyrrole, thiophene, pyridine, biphenyl, fluorene or ethylene.

3. The method of Claim 2, characterized in that R_1 is selected from divalent residues of benzene, divinylbenzene, pyridine, biphenyl or ethylene.

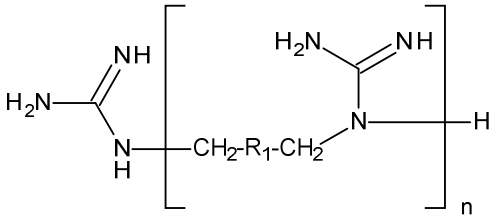
4. The method of one of the Claims 1 to 3, characterized in that the leaving group is selected from chlorine, bromine, iodine, mesylate, triflate or tosylate.

5. The method of any one of the Claims 1 to 4, characterized in that the at least one benzyl or allyl derivative BA is reacted with guanidine, aminoguanidine or

diaminoguanidine G by heating the reactants at a temperature above their melting temperatures.

6. The method of any one of the Claims 1 to 5, characterized in that the reaction is conducted for a period of at least 2 h, preferably at least 3 h.

7. A polyguanidine of the following formula (I):

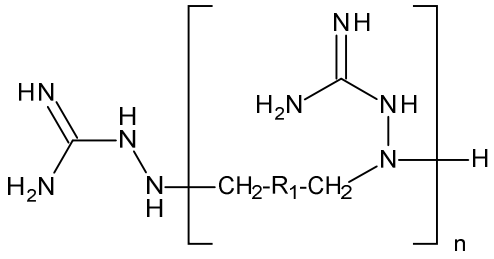


,

(I)

wherein R_1 represents either an aromatic ring system with at least one aromatic ring, optionally containing one or more heteroatoms selected from O, N and S and optionally being substituted with one or two vinyl groups to which the -CH_2-X group(s) is/are bound, or represents ethylene, and wherein n is ≥ 2;
or having a cyclic structure resulting from cyclization upon elimination of a corresponding guanidine, or a salt of said polyguanidine.

8. A polyguanidine of the following formula (II):



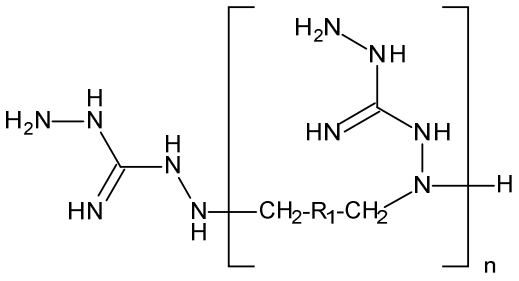
,

(II)

wherein R_1 represents either an aromatic ring system with at least one aromatic ring, optionally containing one or more heteroatoms selected from O, N and S and option-

ally being substituted with one or two vinyl groups to which the -CH_2-X group(s) is/are bound, or represents ethylene, and wherein n is ≥ 2;
or having a cyclic structure resulting from cyclization upon elimination of a corresponding guanidine, or a salt of said polyguanidine.

9. A polyguanidine of the following formula (III):



,

(III)

wherein R_1 represents either an aromatic ring system with at least one aromatic ring, optionally containing one or more heteroatoms selected from O, N and S and optionally being substituted with one or two vinyl groups to which the -CH_2-X group(s) is/are bound, or represents ethylene, and wherein n is ≥ 2;
or having a cyclic structure resulting from cyclization upon elimination of a corresponding guanidine, or a salt of said polyguanidine.

10. The polyguanidine of any one of the Claims 7 to 9, characterized in that R_1 is selected from divalent residues of optionally substituted benzene, divinylbenzene, furan, pyrrole, thiophene, pyridine, biphenyl, fluorene or ethylene.

11. The polyguanidine of Claim 10, characterized in that R_1 is selected from divalent residues of benzene, divinylbenzene, pyridine, biphenyl or ethylene.

12. The polyguanidine as defined in any one of the Claims 7 to 11 for use as an antiinfective.

13. The polyguanidine for the use of Claim 12, characterized in that the polyguanidine is for antagonizing bacterial, viral or fungal infections in a human or animal patient.

14. The polyguanidine for the use of Claim 13, characterized in that the polyguanidine serves for topical or systemic administration.

15. The polyguanidine for the use of Claim 14, characterized in that the polyguanidine serves for administration in the form of a drug or a pharmaceutical composition.

16. The use of a polyguanidine as defined in any one of the Claims 7 to 11 as an *ex vivo* antimicrobial agent.

17. The use of Claim 16, characterized in that the polyguanidine serves as an active component of antimicrobial paints, coatings, foils, or membranes, or the like.

18. A drug or pharmaceutical composition for antagonizing bacterial infections in a human or animal patient comprising a polyguanidine of any one of the Claims 7 to 11 as an antiinfective.

19. The drug or pharmaceutical composition of Claim 18, characterized in that it further comprises at least one pharmaceutically acceptable carrier or excipient and optionally one or more adjuvants and/or one or more further active agents.

20. The drug or pharmaceutical composition of Claim 19, characterized in that it comprises at least one further active agent that also shows an antiinfective effect.

21. The drug or pharmaceutical composition of Claim 19 or 20, characterized in that it comprises at least one further active agent that is effective against a condition other than bacterial infections.