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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

[Continued on next page]

(54) Title: ANTIBACTERIAL COMPOUNDS AGAINST DRUG RESISTANT BACTERIA

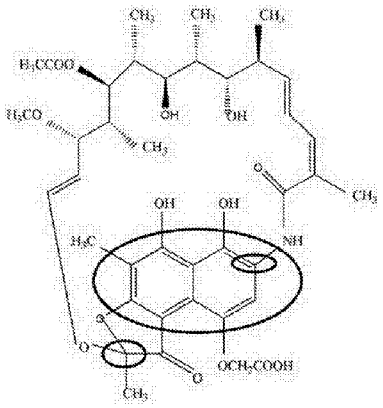

Figure 1: The chemical structure of rifamycin B. The ansa chain joins the naphthoquinone moiety at C-2 and C-12 (circled in black). The naphthoquinone moiety (circled in black) imparts reddish brown colour to the compound.

(57) Abstract: The invention relates to the production of rifamycin analogs against drug resistant bacteria. The invention also relates to antibacterial compounds against drug resistant mycobacteria. The invention also provides for pharmaceutical composition comprising antibacterial compound against drug resistant bacteria, particularly mycobacteria. The invention also provides for use of antibacterial compounds for the treatment of disease caused by bacteria and in particular mycobacteria.

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— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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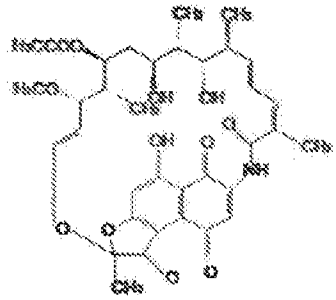
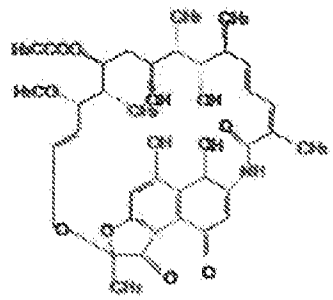
AMENDED CLAIMS
received by the International Bureau on 15.01.2015

We claim:

1. Antibacterial compounds and/or salts thereof having following chemical structure:



24- desmethylrifamycin S



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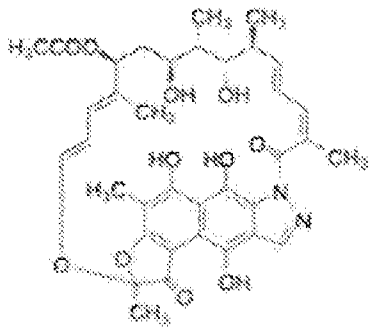


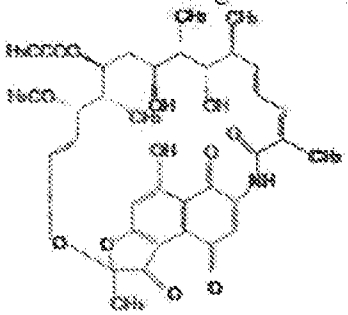
24-desemthylrifampicin

2. The antibacterial compounds as claimed in claim 1, wherein the antibacterial compounds are useful against infection or a disease caused by bacteria.

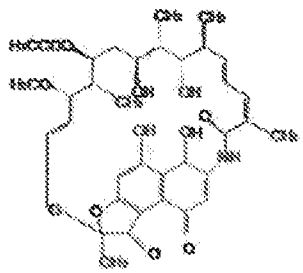
3. The antibacterial compounds as claimed in claims 1-2, wherein the antibacterial compounds are useful against infection or a disease caused by *Mycobacterium* species.

4. The antibacterial compounds as claimed in claims 1-3, wherein *Mycobacterium* species selected are *Mycobacterium tuberculosis* and MDR strains of *M. tuberculosis*.

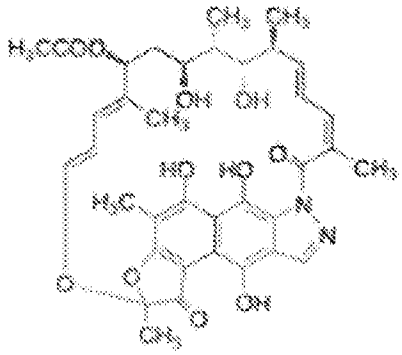
5. A pharmaceutical composition comprising antibacterial compounds and/or salts thereof having following chemical structure:



24- desmethylrifamycin S



24- desmethylrifamycin SV



24-desmethylrifampicin

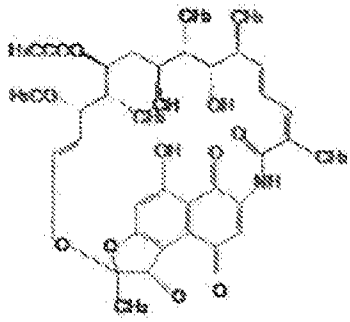
along with their pharmaceutical acceptable carriers.

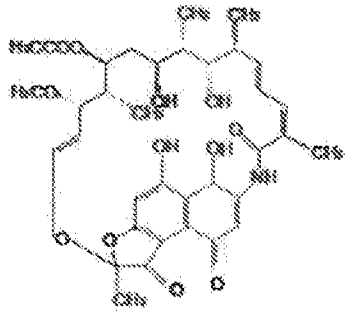
6. The pharmaceutical composition as claimed in claim 5, wherein the antibacterial compounds are useful against infection or a disease caused by bacteria.

7. The pharmaceutical composition as claimed in claims 5-6, wherein the antibacterial compounds are useful against infection or a disease caused by *Mycobacterium* species.

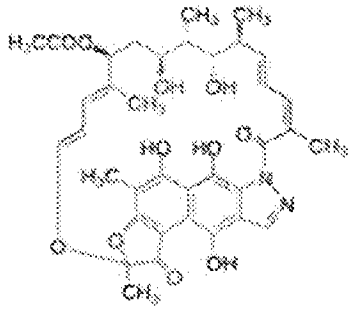
8. The pharmaceutical composition as claimed in claims 5-6, wherein the antibacterial compounds are useful against infection or a disease caused by *Mycobacterium tuberculosis* and MDR strains of *M. tuberculosis*..

9. A method of treatment comprising administering to a patient an antibacterial compounds and/or salts thereof having following structure:



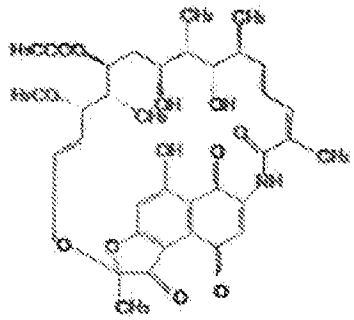


24- desmethylrifamycin S 24- desmethylrifamycin SV



24-desmethyrifampicin

10. Use of antibacterial compounds or salts thereof having following chemical structure and/or salts thereof for treatment of disease or an infection.



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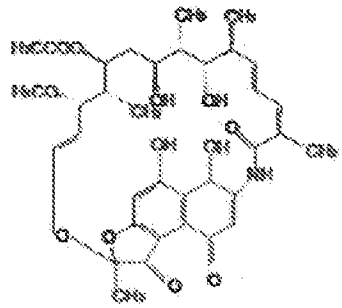
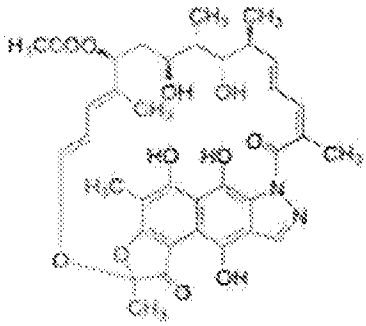
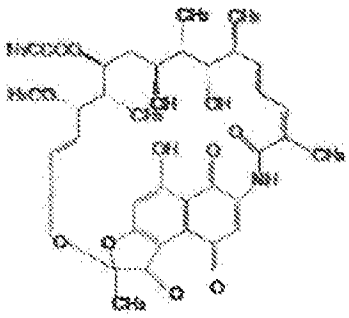


24- desmethylrifamycin SV

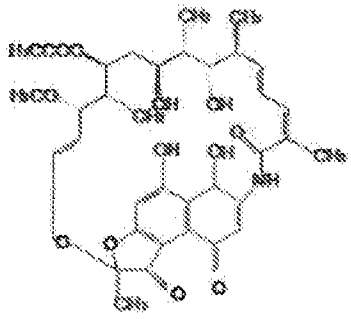


24-desmethylrifampicin

11. Use of antibacterial compounds and/or salts thereof having following chemical structure:



24- desmethylrifamycin S



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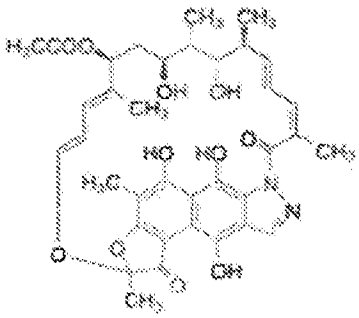

24-desmethylrifampicin
for the preparation of a medicament.

12. Use of medicament as claimed in claim 10, for the treatment of a disease or an infection.

13. Use of medicament as claimed in claim 10, for the treatment of a diseases or an infection caused by bacteria.

14. Use of medicament as claimed in claim 10, for the treatment of a diseases or an infection caused by caused by *Mycobacterium* species.

15. Use of medicament as claimed in claim 10 or 13, for the treatment of a diseases or an infection caused by *Mycobacterium* species, *Mycobacterium tuberculosis* and MDR strains of *M. tuberculosis*.

16. Method of preparing a pharmaceutical composition as claimed in 5, said method comprising antibacterial compounds as claimed in claim 1 along with pharmaceutical acceptable carrier.

17. A method of preparing the 24-desmethyrifamycin S as claimed in claim 1, said method comprising the steps of:

(a) reacting 24-desmethyrifamycin B in presence of reagents selected from Copper chloride;
(b) carrying the reaction of step (a) overnight at room temperature; and
(c) obtaining 24-desmethyrifamycin S.

18. A method of preparing the 24-desmethyrifampicin as claimed in claim 1, said method comprising the steps of:

(a) reacting 24-desmethyrifamycin B in presence of Dimethylformamide (DMF) and acetic acid;
(b) adding paraformaldehyde and 1,3,5-trimethyl-hexhydro-1,3,5-triazine to the mixture of step (a);
(c) obtaining 3-methyl-1,3-oxazino (5,6-c)-24-demethylrifamycin'
(d) reacting the compound of step (c) with 1-amino-4-emthyl-piperazine; and
(e) obtaining 24-desmethyrifampicin.