Title: TETRACYCLINE DERIVATIVES FOR THE TREATMENT OF BACTERIAL, VIRAL AND PARASITIC INFECTIONS

Abstract: The present invention pertains, at least in part, to a substituted tetracycline compound of Formula (I): wherein X is CHCl(R13VY), CR6 R6, C=CR6 R6, S, NR6, or O; E is NR7dR7 β, OR7f or (CH2o)i(C=O)WR7s; W is O, S, NR71 1 or CR75R7*; W is O, S or NR7*. These tetracycline compounds can be used to treat numerous tetracycline compound-responsive states, such as bacterial infections and neoplasms.
## A. CLASSIFICATION OF SUBJECT MATTER

**INV.**
- C07D207/50
- C07D239/20
- C07D241/12
- C07D261/02
- C07D261/04
- C07D263/32
- C07D265/02
- C07C237/26
- A61P31/04
- A61P33/06

According to International Patent Classification (IPC) or its national classification and IPC.

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
- C07D
- C07C
- A61K
- A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched.

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
- E.PO-Internal
- WPI Data
- BEILSTEIN Data
- CHEM ABS Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Relevant to claim No.</th>
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Further document are listed in the continuation of Box C.

See patent family annex.

- "A" document defining the general state of the art which is not considered to be of particular relevance.
- "E" earlier document but published on or after the international filing date.
- "I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified).
- "O" document referred to in oral disclosure, use, exhibition or other means.
- "P" document published prior to the international filing date but later than the priority claim.
- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention.
- "X" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is taken alone.
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "K" document member of the same patent family.

Date of the actual completion of the international search: 19 June 2008

Date of mailing of the international search report: 28/10/2008

Name and mailing address of the ISA/Authorised officer:
- European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk
- Tel: (+31-70) 340-2040, Fax: (+31-70) 340-3016

Cortes, Jose
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Continuation of Box II.1

Although claims 377-389 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box II.I

Claims Nos.: -

Rule 39.1(v) PCT - Method for treatment of the human or animal body by therapy
**INTERNATIONAL SEARCH REPORT**

**Box No. II**  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [ ] Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
   
   see FURTHER INFORMATION sheet PCT/ISA/210

2. [ ] Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. [ ] Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III**  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

   see additional sheet

1. [ ] As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this International search report covers only those claims for which fees were paid, specifically claims Nos.:

4. [ ] No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
   
   see additional sheet(s)

**Remark on Protest**

- [ ] The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- [ ] The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- [ ] No protest accompanied the payment of additional search fees.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-63, 377-391(partly)
   compounds of formula (I)

2. claims: 64-99, 377-391(partly)
   compounds of formula (II)

3. claims: 100-121, 377-391(partly)
   compounds of formula (IIia)

4. claims: 122-141, 377-391(partly)
   compounds of formula (IVa)

5. claims: 142-184, 377-391(partly)
   compounds of formula (Va)

6. claims: 185-193, 377-391(partly)
   compounds of formula (VI)

7. claims: 194-231, 377-391(partly)
   compounds of formula (Vila)

8. claims: 232-304, 377-391(partly)
   compounds of formula (Villa)

9. claims: 305-315, 377-391(partly)
   compounds of formula (IXa)

10. claims: 316-328, 377-391(partly)
    compounds of formula (Xa)

11. claims: 329, 377-391(partly)
6 individual compounds (no reference to previous claims)

12. claims: 330-335, 377-391(partly)
   compounds of formula (XIa)

   compounds of formula (XIII)

14. claims: 341-363, 377-391(partly)
   compounds of formula (XIV)

15. claims: 364-372, 377-391(partly)
   compounds of formula (XV)

16. claims: 373-376, 377-391(partly)
   compounds of formula (XVI)
### INTERNATIONAL SEARCH REPORT

**Information on patent family members**

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