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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A61K 31/35 | A3

(11) International Publication Number: **WO 99/48461**

(43) International Publication Date: 30 September 1999 (30.09.99)

(21) International Application Number: PCT/US99/06494

(22) International Filing Date: 25 March 1999 (25.03.99)

(30) Priority Data:
60/079,383 26 March 1998 (26.03.98) US

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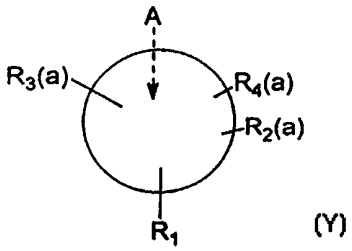
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(81) Designated States: AU, CA, GB, JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(88) Date of publication of the international search report:
16 December 1999 (16.12.99)

(54) Title: SUBSTITUTED AROMATIC COMPOUNDS FOR TREATMENT OF ANTIBIOTIC RESISTANT INFECTIONS



(Y)

(57) Abstract

This invention relates to compounds of general formula (Y) wherein A is an aromatic hydrocarbon ring system and R_1 is a carbon bound directly to an oxygen and is also bound to a nitrogen through a saturated carbon and wherein at least one of R_2, R_3 and R_4 is an electron–rich substituent. The active agents are useful for treating patients suffering from infections including gram positive organisms, such as streptococcus, staphylococcus, anthracis, gram negative bacteria such as neisseria species, yeasts and mycobacterium. They are effective against strains which have shown resistance to other antimicrobial agents.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/06494

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61K 31/35
US CL :514/454

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/454

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 practicable, search terms used)

APS, CAS-on-line

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,461,078 A (PATTERSON) 24 October 1995, see the entire document.	1, 2-7, 20 and 24

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"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
"L"	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)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 29 SEPTEMBER 1999	Date of mailing of the international search report 01 November 1999 (01.11.99)
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer KEVIN E. WEDDINGTON Telephone No. (703) 308-1235

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Form PCT/ISA/210 (second sheet)(July 1992)★

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/06494

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international 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:

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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

Please See Extra 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 fee, this Authority did not invite payment of any additional fee.

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.:
1, 2-7, 20 and 24

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/06494

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING
This ISA found multiple inventions as follows:

Group I, claim(s)1, 2-7, 20 and 24 are drawn to a method of treating or preventing infection caused by bacteria, mycobacterium or fungi with a compound with an anthracene ring system.

Group II, claim(s) 1, 8-12, 20 and 23 are drawn to a method of treating and preventing infection caused by bacteria, mycobacterium or fungi with a compound with a naphthalene ring system.

Group III, claim(s) 1, 13-16, 20 and 21 are drawn to a method of treating or preventing infection caused by bacteria, mycobacterium or fungi with a compound with a benzene ring system.

Group IV, claim(s) 1, 17-20 and 22 are drawn to a method of treating or preventing infection caused by bacteria, mycobacterium or fungi with a compound with a phenanthrene ring system.

The inventions listed as Groups I-IV do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:
The four inventions are independent and distinct, each from the other as they have acquired a separate status in the art as shown by their separate subject matter using different ring systems (species) to treat or prevent infections.