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(54) Title: THE SYNTHESIS OF NATURALLY OCCURING ECTEINASCIDINS AND RELATED COMPOUNDS

(57) Abstract: Ecteinascidin compounds with a quinone ring for ring E are active as anti-cancer agents. Related processes and compounds are provided.

INTERNATIONAL SEARCH REPORT

Int onal Application No
PCT/GB 03/00481

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07D515/22 A61K31/50 A61P35/00

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)
IPC 7 C07D 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)
EPO-Internal, WPI Data, BEILSTEIN Data, CHEM ABS Data, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,Y	WO 00 18233 A (HARVARD COLLEGE) 6 April 2000 (2000-04-06) see pages 85,97 and claim 58	1-20
X	KUBO A ET AL: "STEREOSELECTIVE TOTAL SYNTHESIS OF RACEMIC SAFRAMYCIN B" JOURNAL OF ORGANIC CHEMISTRY, vol. 53, no. 18, 1988, pages 4295-4310, XP002242726 ISSN: 0022-3263 page 4303	1
X,Y	WO 01 87895 A (CHICHARRO JOSE LUIS ;CUEVAS CARMEN (ES); GALLEGO PILAR (ES); PEREZ) 22 November 2001 (2001-11-22) pages 6-10; examples	1-20
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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"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

"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)

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"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 novel or 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.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
28 May 2003	01. 10. 03

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Steendijk, M.

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

INTERNATIONAL SEARCH REPORT

Int ›nal Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 51238 A (UNIV ILLINOIS) 14 October 1999 (1999-10-14) page 5	1-20
P,X	WO 03 008423 A (MARTINEZ VALENTIN ;CUEVAS CARMEN (ES); GALLEGO PILAR (ES); PHARMA) 30 January 2003 (2003-01-30) page 30 page 104	1-20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/00481

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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:

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:

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 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.:

1-11, 12-17 (part), 18, 19, 20 (part)

Remark on Protest

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

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11, 12-17 (part), 18,19, 20 (part)

Ecteinascidin compounds having a quinone group in ring E and process involving such compounds

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2. claims: 12-13 (part), 15-16 (part)

process for preparing ecteinascidin compounds (not having a quinone group in ring E) involving the removal of a N12-protecting group

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3. claim: 14(part)

preparation of ecteinascidin compounds with formation of a 1,4 bridge using a 10-hydroxy, 12-protected, di-6,8-enone precursor (not involving the removal of the 12-protecting group)

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4. claims: 17(part),20(part)

ecteinascidin compounds of formula A or Ac in which the E ring is not a quinone group

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Int ›nal Application No
PCT/GB 03/00481

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte nal Application No
PCT/GB 03/00481

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