

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 March 2001 (15.03.2001)

PCT

(10) International Publication Number
WO 01/17614 A3

(51) International Patent Classification⁷: **A61P 35/00**,
A61K 31/135, 31/235, 31/33, 31/519, 31/4045, 47/48

(21) International Application Number: PCT/IB00/01427

(22) International Filing Date:
7 September 2000 (07.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/152,681 7 September 1999 (07.09.1999) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
28 February 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND COMPOSITIONS CONTAINING SUCCINIMIDE OR MALEIMIDE DERIVATIVES OF ANTI-NEOPLASTIC AGENTS

(57) Abstract: Derivatives of antineoplastic agents are prepared. The derivatives are capable of forming covalent bonds with one or more blood components, preferably a mobile blood component.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 00/01427

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61P35/00 A61K31/135 A61K31/235 A61K31/33 A61K31/519
A61K31/4045 A61K47/48

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 A61K

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US1993 DEMANT ERLAND J F ET AL: "Recognition of anthracycline binding domains in bovine serum albumin and design of a free fatty acid sensor protein." Database accession no. PREV199395093150 XP002172298	1-3,9-13
Y	abstract & BIOCHIMICA ET BIOPHYSICA ACTA, vol. 1156, no. 2, 1993, pages 151-160, ISSN: 0006-3002 --- -/--	14-27, 45,46

☒ Further documents are listed in the continuation of box C.

☒ 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
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- "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

"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

20 July 2001

Date of mailing of the international search report

10.10.01

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 00/01427

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 011, no. 365 (C-460), 27 November 1987 (1987-11-27) & JP 62 138430 A (TEIJIN LTD), 22 June 1987 (1987-06-22) abstract	1,2,5, 9-13
X	--- KRATZ F ET AL: "PREPARATION, CHARACTERIZATION AND IN VITRO EFFICACY OF ALBUMIN CONJUGATES OF DOXORUBICIN" BIOLOGICAL & PHARMACEUTICAL BULLETIN (OF JAPAN), PHARMACEUTICAL SOCIETY OF JAPAN, JP, vol. 21, no. 1, 1998, pages 56-61, XP000738275 ISSN: 0918-6158	1-3,9-13
Y	abstract figure 1	14-27, 45,46
X	--- DEMANT E J F ET AL: "CHARACTERIZATION OF THE COOPERATIVE CROSS-LINKING OF DOXORUBICIN N-HYDROXYSUCCINIMIDE ESTER DERIVATIVES TO WATER SOLUBLE PROTEINS" BIOCHIMICA ET BIOPHYSICA ACTA, NL, AMSTERDAM, vol. 1118, 1991, pages 83-90, XP002062905 ISSN: 0006-3002	1-3,9-13
Y	abstract page 84 figure 1	14-27, 45,46
X,P	--- KRATZ F ET AL: "A NOVEL MACROMOLECULAR PRODRUG CONCEPT EXPLOITING ENDOGENOUS SERUM ALBUMIN AS A DRUG CARRIER FOR CANCER CHEMOTHERAPY" JOURNAL OF MEDICINAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY, WASHINGTON, US, vol. 43, 6 April 2000 (2000-04-06), pages 1253-1256, XP000990088 ISSN: 0022-2623	1-3,9-13
Y	abstract page 1253	14-27, 45,46
X	--- WO 98 10794 A (KRATZ FELIX DR) 12 March 1998 (1998-03-12) cited in the application	1-3,9-13
Y	the whole document	14-27, 45,46
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 00/01427

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 23243 A (SQUIBB BRISTOL MYERS CO) 3 July 1997 (1997-07-03)	1-3,9-13
Y	abstract page 44	14-27, 45,46
X	--- PATENT ABSTRACTS OF JAPAN vol. 013, no. 516 (C-656), 17 November 1989 (1989-11-17) & JP 01 211530 A (POLA CHEM IND INC), 24 August 1989 (1989-08-24)	1-3,9-13
Y	abstract	14-27, 45,46
X	--- DE 41 22 210 A (DEUTSCHES KREBSFORSCH) 14 January 1993 (1993-01-14) example claims	1,9-13
P,X, L	--- WO 99 48536 A (CONJUCHEM INC ;HOLMES DARREN L (CA); BRIDON DOMINIQUE P (CA); EZRI) 30 September 1999 (1999-09-30) L: PRIORITY examples 1-6 claims	1-3, 9-27,45, 46
E	--- WO 00 76551 A (KRATZ FELIX ;KTB TUMORFORSCHUNGS GMBH (DE)) 21 December 2000 (2000-12-21) examples claims	1-3, 9-27,45, 46
Y	--- WO 95 10302 A (REDCELL INC) 20 April 1995 (1995-04-20) examples 4,5 & US 5 612 034 A (POULETTY PHILLIPE ET AL) 18 March 1997 (1997-03-18) paragraph [EXPERIMENTAL] claims	14-21
Y	--- WO 98 00171 A (REDCELL CANADA INC) 8 January 1998 (1998-01-08) examples claims 10-14,17,18 -----	14-21

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 00/01427

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:

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.:

3, 22-27, 45 and 46 and part of 1, 2, 9-21

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

1. Claims: 3, 22-27, 45 and 46, and part of 1, 2, 9-21

Use, method, agent and composition as claimed, in which the antineoplastic agent is doxorubicin

2. Claims: 4, 28-31, 47, 48, and part of 1, 2 and 9-21

Use, method, agent and composition as claimed, in which the antineoplastic agent is taxol

3. Claims: 5, 32-35, 49-54, and part of 1, 2 and 9-21

Use, method, agent and composition as claimed, in which the antineoplastic agent is methotrexate

4. Claims: 6, 36, 37, 66, 56, and part of 1, 2 and 9-21

Use, method, agent and composition as claimed, in which the antineoplastic agent is hydroxyurea

5. Claims: 7, 38, 39, 57-60 and part of 1, 2 and 9-21

Use, method, agent and composition as claimed, in which the antineoplastic agent is tamoxifen

6. Claims: 8, 40, 41, 61, 62 and part of 1, 2 and 9-21

Use, method, agent and composition as claimed, in which the antineoplastic agent is Mitomycin C

7. Claims: 44, 63, 64 and part of 1, 2 and 9-21

Use, method, agent and composition as claimed, in which the antineoplastic agent is a vinca alkaloid

8. Claims: 42, 43 and part of 1 and 9-21

Use, method, agent and composition as claimed, in which the antineoplastic agent is 5-fluorouracil

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 00/01427

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