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(54) Title: SMALL MOLECULES FOR TREATING CANCER AND ABNORMAL CELL PROLIFERATION DISORDERS

(57) Abstract: Novel compounds and compositions that can be used to bind tubulin, prevent tubulin polymerization, inhibit cell growth, arrest cell cycle, cause cell death, or treat cancer or abnormal cell proliferation disorders. Also disclosed are methods for identifying, synthesizing, and using such compounds.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/00560

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) -- C07C 409/00, A61K 39/00 (2007.01) USPC -- 558/23, 424/277.1 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) USPC -- 558/23, 424/277.1		
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) WEST -- PGPB,USPT,USOC,EPAB,JPAB; Dialog Classic Files 351, 652, 654, 155; Google Patents; USPTO Web Page Search terms -- tubuin, inhibitor, Baylis-Hillman, tetrabromide, pharmacophore, cancer, cell death, computer-readable media, homoallylic alcohol, triphenylphosphene		
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 01/012189 A1 (PEVARELLO et al.) 22 February 2001 (22.02.2001) pg 1-7, 36, 42, 85.	1-8,11-25 ----- 9-10, 26-27
Y	US 2005/0233975 A1 (GANEM et al.) 20 October 2005 (20.10.2005) para [0017].	9-10
Y	US 2005/0148534 A1 (CASTELLINO et al.) 07 July 2005 (07.07.2005) para [0389], [0584].	9-10
Y	US 2005/0256111 A1 (KATH et al.) 17 November 2005 (17.11.2005) para [0223].	9-10
Y	US 2005/0266496 A1 (GILON) 01 December 2005 (01.12.2005) para [0015], [0022], [0047].	26-27
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
* Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"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 09 July 2007 (09.07.2007)	Date of mailing of the international search report 25 SEP 2007	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774	

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of:
 - a. type of material
 - a sequence listing
 - table(s) related to the sequence listing
 - b. format of material
 - on paper
 - in electronic form
 - c. time of filing/furnishing
 - contained in the international application as filed
 - filed together with the international application in electronic form
 - furnished subsequently to this Authority for the purposes of search
2. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

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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:

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:

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 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.:

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.

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Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)