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(54) Title: PHOSPHORYLATED HISTONE H2B AS AN APOPTOSIS MARKER

(57) Abstract: The present invention is directed to the generation of antibodies against an α -phosphorylated serine 14 residue on Histone 2B. This posttranslational modification of the amino terminus of Histone 2B is associated with cells that are about to enter or are already undergoing apoptosis. These antibodies are useful in identifying apoptotic cells and serve as diagnostic and screening tools. The present invention is also directed to the Mst1 kinase and the isolation of compounds that modulate the activity of Mst1. This kinase has been identified as the enzyme responsible for creating this posttranslational modification on Histone 2B *in vivo*.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/24405

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07K 16/00, 14/00; G01N 33/53

US CL : 530/387.1; 530/350; 435/7.1

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)

U.S. : 530/387.1; 530/350; 435/7.1

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)
MPSRCH sequence similarity search**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 92/11029 A1 (THE JOHNS HOPKINS UNIVERSITY) 09 July 1992 (09.07.1992).	1, 3-4
---	See pages 68-70, and especially page 69, last paragraph). MPSRCH search report, 2004,	-----
Y	pct/us-2-24405-2.closed.rag, page 3.	2, 5-7, 15



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 application or patent 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		

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28 September 2004 (28.09.2004)

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INTERNATIONAL SEARCH REPORT

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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. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim 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. ☐ Claim 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.: 1-7 and 10-16

Remark on Protest

☐
☐

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

No protest accompanied the payment of additional search fees.