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Previous Correction:
see Notice of 19 June 2008

(54) Title: NA+/K+-ATPASE-SPECIFIC PEPTIDE INHIBITORS/ACTIVATORS OF SRC AND SRC FAMILY KINASES

(57) Abstract: A method for regulating Src and its downstream signaling pathway which includes binding between Src and Na+/K+-ATPase is disclosed. The Na+/K+-ATPase/Src complex is a functional receptor for cardiotonic steroids such as ouabain. Also disclosed are Src inhibitors or activators which include either Na+/K+-ATPase or Src that interfere with the interaction between the Na/K-ATPase and Src, act via a different mechanism from ATP analogues, and is pathway (Na+/K+-ATPase) specific.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/23011

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: A61K 31/55(2006.01),31/517(2006.01),31/519(2006.01),31/404(2006.01),31/407(2006.01);C07H 21/04(2006.01);C12N 5/06(2006.01);C12P 21/02(2006.01)

 USPC: 514/212.07,265.1,266.4,410,418;435/69.1,320.1,325;536/23.1;540/500;544/280,292;548/416,484
 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. : 514/212.07,265.1,266.4,410,418; 435/69.1,320.1,325; 536/23.1; 540/500; 544/280,292; 548/416,484

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SUSA et al, Src inhibitors: drugs for the treatment of osteroporosis, cancer or both?, TiPS, December 2000, vol 21, pp. 489-495. Look throughout the document, especially the Tables 1 and 2 and Figure 1.	4-8, 15-18, 28-30 and 32-33
X	LAIRD et al, Src Family Kinase Activity Is Required for Signal Tranducer and Activator of Transcription 3 and Focal Adhesion Kinase Phosphorylation..., Molecular Cancer Therapeutics, May 2003, 2: 461-469. Throughout the document, Figure 1 and Table 2, see pp. 466-467.	4-8, 15-18, 28-30 and 32-33
X	TIAN et al, Binding of Src to Na+/K+-ATPase Forms a Functional Signaling Complex, Molecular Biology of Cell, January 2006, 17: 317-326. Throughout the document, abstract, pp. 319, 324, Figure 10.	11-14
X	US 2002/0039764 A1 (ROSEN et al), 4 Apr 2002, abstract and throughout the document.	25-27

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

* 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 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 21 August 2008 (21.08.2008)	Date of mailing of the international search report 26 SEP 2008
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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 Julie Ha Telephone No. 571-272-1600
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/23011

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 2004/004785 A1 (ELIXIS Inc), 15 Jan 2004, see SEQ ID NO: 64.	38
X	WO/03/016475 (THE GENERAL HOSPITAL), 27 Feb 2003, See SEQ ID NO: 11151.	41

INTERNATIONAL SEARCH REPORT

International application No.

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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.: 2,3,10,20-23 and 43
because they relate to subject matter not required to be searched by this Authority, namely:
Please See Continuation Sheet

2. Claims Nos.: 1,9,19,24,31,34-36,42 and 43
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:
Please See Continuation Sheet

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 any 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.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/23011

Continuation of Box II Observations where certain claims were found unsearchable 1. because they relate to subject matter not required to be searched by this Authority, namely:

Claim 2 appears to be directed to a non-statutory subject matter, i.e., directed to a receptor that is found in nature. See PCT Rule 67.1.

Claim 3 appears to be directed to a non-statutory subject matter, i.e., directed to a target that is found in nature. See PCT Rule 67.1.

Claim 10 appears to be drawn to a non-statutory subject matter, i.e., a signal transducer that is found in nature. See PCT Rule 67.1.

Claims 20-23 are drawn to a method for treating of the human or animal body by surgery or therapy as well as diagnostic methods, that is not required to be searched under PCT Rule 67.1.

Claim 43 appears to be drawn to a non-statutory subject matter, i.e., alpha1-depleted cells that can be due to natural mutation, therefore found in nature. See PCT Rule 67.1.

Continuation of Box II Reason2:

Claims 1, 9, 19, 31 and 42 are drawn to methods but are missing essential active method steps. Therefore, the claims are too indefinite and no meaningful opinion can be formed. See PCT Rule 6.

Claim 24 is drawn to a composition of matter comprising of a peptide, the peptide comprising a motif selected from the group comprising any of the peptide sequence described herein. However, the claim is an independent claim and no peptide sequences are disclosed or claimed. Therefore, the claim is unclear, and no meaningful opinion can be formed. See PCT Rule 6.

Claims 34-36 are drawn to method claims, but are missing essential active method steps. Therefore, the claims are too indefinite and no meaningful opinion can be formed. See PCT Rule 6.

Claim 43 is drawn to an alpha1-depleted cell. It is unclear what alpha1-depleted cells are, therefore no meaningful opinion can be formed. See PCT Rule 6.