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- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: ANIMAL MODEL OF SYNOVIAL SARCOMA

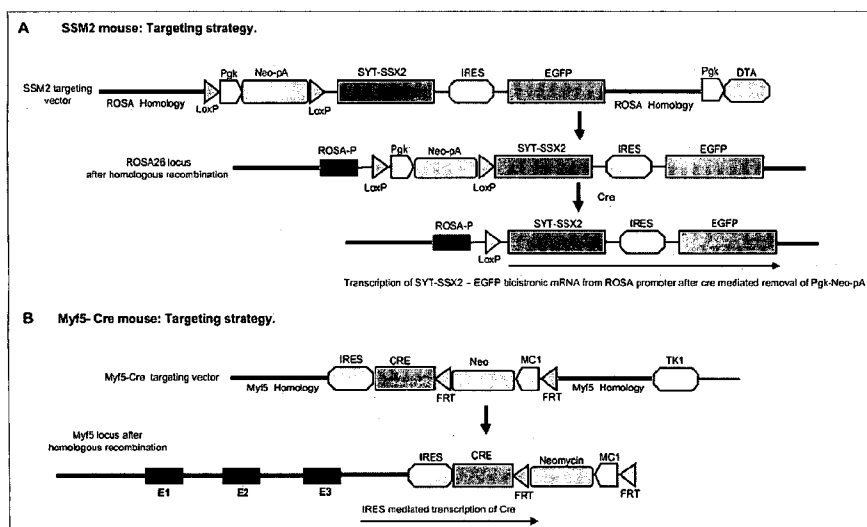


FIG. 1

(57) **Abstract:** Synovial sarcoma is an aggressive soft-tissue malignancy. Disclosed herein is an animal model of synovial sarcoma wherein one or more myogenic cells of the animal express recombinant SYT-SSX fusion polypeptide. Using this model, myoblasts were identified as a source of synovial sarcoma. Remarkably, within the skeletal muscle lineage, while expression of the oncoprotein in immature myoblasts leads to induction of synovial sarcoma with 100% penetrance, its expression in more differentiated cells induces myopathy without tumor induction. In addition, early widespread expression of the disclosed fusion protein disrupts normal embryogenesis, causing lethality.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/0769

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A01K 67/00; A01K 67/033 (2009.01)

USPC - 800/10

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 - 800/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 800/10, 13, 18; 435/69.1, 325, 462

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWest (PGPB, USPT, EPAB, JPAB), Google, Google Patents, GenCore version 6.2.1 - synovial sarcoma, n-terminal domain, qpgy domain, glutamine, proline, syt-ssx, fusion polypeptide

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Haldar et al. "A Conditional Mouse Model of Synovial Sarcoma: Insights into a Myogenic Origin." Publishing in Cancer Cell 11, pages 375-388, April 2007 - Abstract, (pg. 375-376, col. 2, para 1), (pg. 376, col. 1, para 1), (pg. 376, col. 2, para 1-2), (pg. 377 - Fig.1a), (pg. 380, col. 1, para 1), (pg. 384, col. 1, para 3),	1-2, 8, 10-13, and 27
Y		3-7 and 9
Y	WO 2003/087768 A2 (Ghosh et al.) 23 October 2003 (23.10.2003) - (pg. 102, Table 1) and (pg. 8, ln 27)	3 and 6-7
Y	WO 2006/079655 A2 (Frankard) 3 August 2006 (03.08.2006) - (pg.9, para 1) and (pg. 22, para 1)	4-5
Y	WO 1996/002641 A2 (Cooper et al.) 1 February 1996 (01.02.1996) - Fig.4b and pg. 30, ln 20-31	9

☐ Further documents are listed in the continuation of Box C.

* 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 application or patent 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)

"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

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23 January 2009 (22.01.2009)

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/70769

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.: 14-26, 28, and 29
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:
Group I: Claims 1-13 and 27 are directed to either a non-human animal model of synovial sarcoma (1-13) or a non-human mammal (27).

Group II: Claims 30-52 are directed to a cell.

The technical feature that links groups I and II is a cell expressing a SYT-SSX fusion protein. However, this does not represent an improvement over the prior art of US 2006/0223747 A1 to Ito et al. which teaches a cell expressing a SYT-SSX fusion protein (para [0043]).

Accordingly, unity of invention is lacking under PCT Rule 13.2 because the groups do not share a same or corresponding special technical feature providing a contribution over the prior art.

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.: 1-13 and 27

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.