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ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: USE OF NOVEL BIOMARKERS FOR DETECTION OF TESTICULAR CARCINOMA IN SITU AND DERIVED
CANCERS IN HUMAN SAMPLES

(57) Abstract: The present invention relates to methods and kits for identification of testicular carcinoma in situ (CIS), gonadoblas-
toma (a CIS-like pre-cancerous lesion found in dysgenetic gonads) and CIS-derived cancers based on at least one of the biomarkers
included in the invention. It also relates to diagnosis of a subject's status of the testicular carcinoma in situ and the derived cancers
based on the measurement of a relative abundance of one of the biomarkers.



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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER GOIN33/574		
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) GOIN		
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) EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE, Sequence Search		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LOOIJENGA LEENDERT H J ET AL: "POU5F1 (OCT3/4) identifies cells with pluripotent potential in human germ cell tumors." CANCER RESEARCH, vol. 63, no. 9, 1 May 2003 (2003-05-01), pages 2244-2250, XP002343970 ISSN: 0008-5472 abstract page 2245, column 2, paragraph 4 page 2249, column 1, paragraph 2	1-17,20, 23-25
P,X	WO 2004/085654 A (AXORDIA LIMITED; ANDREWS, PETER; GOKHALE, PAUL; WALSH, JIM; MATIN, MAR) 7 October 2004 (2004-10-07) figures 8,13 claims 1-7,17-25 ----- -/--	1-17,20, 23-25
☒ 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 "E" earlier document 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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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 2004/031410 A (ONCOTHERAPY SCIENCE, INC; JAPAN AS REPRESENTED BY THE PRESIDENT OF THE) 15 April 2004 (2004-04-15) page 42, line 18 - line 20; table 3 claims 1-3,6-12,16-35 -----	1-18, 23-25
X	WO 03/051308 A (ISIS PHARMACEUTICALS, INC; COWSERT, LEX, M; FREIER, SUSAN, M) 26 June 2003 (2003-06-26) page 8, line 8 - line 10 page 9, line 2 - line 7 page 12, paragraph 2 - page 13, paragraph 3 page 27, paragraph 2 page 72 - page 73; example 10 page 75 - page 77; example 13 page 78; example 14 -----	25
P,X	HOEI-HANSEN C E ET AL: "A subfertile patient diagnosed with testicular carcinoma in situ by immunocytological staining for AP-2gamma in semen samples: Case report" HUMAN REPRODUCTION (OXFORD), vol. 20, no. 3, March 2005 (2005-03), pages 579-582, XP002365149 ISSN: 0268-1161 the whole document -----	1-18, 23-25
P,X	HOEI-HANSEN CHRISTINA E ET AL: "Transcription factor AP-2gamma is a developmentally regulated marker of testicular carcinoma in situ and germ cell tumors." CLINICAL CANCER RESEARCH : AN OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH. 15 DEC 2004, vol. 10, no. 24, 15 December 2004 (2004-12-15), pages 8521-8530, XP002365150 ISSN: 1078-0432 abstract -----	1-18, 23-25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK2005/000280

Box 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 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:

see additional sheet

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.:
1-17 (partially), 18, 20 and 23-25 (partially)
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.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: invention 1; claims 1-17 (partially), 20, 23-25 (partially)

The use of gene of SEQ.ID.No 1 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

2. claims: invention 2; claims 1-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 2 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

3. claims: invention 19; claims 1-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 19 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

4. claims: invention 20; claims 1-17 (partially), 18, 23-25 (partially)

The use of gene of SEQ.ID.No 20 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

5. claims: invention 21; claims 1-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 21 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

6. claims: invention 22; claims 1-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 22 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

7. claims: invention 23; claims 1-17 (partially), 21, 23-25 (partially)

The use of gene of SEQ.ID.No 23 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

8. claims: invention 24; claims: 1-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 24 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

9. claims: invention 51; claims 1-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 51 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

10. claims: invention 52; claims 1-17 (partially), 19, 23-25 (partially)

The use of gene of SEQ.ID.No 52 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

11. claims: invention 53; claims: 1-16 and 23-25 (all partially).

The use of gene of SEQ.ID.No 53 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

12. claims: invention 69; claims 1-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 69 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

13. claims: invention 70; claims 1-17 (partially), 22, 23-25 (partially)

The use of gene of SEQ.ID.No 70 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

14. claims: invention 71; claims 1-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 71 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

15. claims: invention 157; claims 1-16 and 23-25 (all partially)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

The use of gene of SEQ.ID.No 157 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

16. claims: invention 158; claims 1-2, 4-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 158 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

17. claims: invention 255; claims 1-2, 4-16 and 23-25 (all partially)

The use of gene of SEQ.ID.No 255 as marker for precursors of germ cell tumours for diagnosing, monitoring or screening purposes.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/DK2005/000280

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2004085654 A	07-10-2004	EP 1608754 A2	28-12-2005
WO 2004031410 A	15-04-2004	AU 2003260965 A1	23-04-2004
		CA 2500982 A1	15-04-2004
		CN 1703522 A	30-11-2005
		EP 1546410 A2	29-06-2005
WO 03051308 A	26-06-2003	AU 2002353153 A1	30-06-2003
		US 2003147863 A1	07-08-2003