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SUPERINTENDENCIA Y COMERCIO
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Referencia Expediente No 02 101 971

Solicitante XY, INC

Asunto Solicitud de patente para POBLACIONES DE
ESPERMA DE ALTA PUREZA QUE CONTIENEN
CROMOSOMA X E Y

Fecha de Presentación 8 de noviembre de 2002

Yo, Emilio FERRERO, obrando como apoderado de la solicitante en el asunto antes identificado, atentamente presento el reporte de examen preliminar de la solicitud de patente internacional PCT/US01/15150, correspondiente a la solicitud de Fase Nacional de la referencia

Atentamente solicito que se continúe con la tramitacion de la solicitud de patente

Bogotá, - 1 ABR 2003
Señora Jefe,



EMILIO FERRERO
T P A No 31 929

COLO 13534 841 001 4

JBP/MRM/

ID 000003/WPC13534

PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To
CRAIG R. MILES
SANTANGELO LAW OFFICES P C
125 SOUTH HOWES
THIRD FLOOR
FORT COLLINS CO 80521

PCT**NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

(PCT Rule 71.1)

Date of Mailing
(day/month/year)

21 FEB 2003

Applicant's or agent's file reference

XYHIGHPURPCT

IMPORTANT NOTIFICATION

International application No

PCT/US01/15150

International filing date (day/month/year)

09 May 2001 (09 05 2001)

Priority date (day/month/year)

09 May 2000 (09 05 2000)

Applicant

XY INC.

- 1 The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes if any, established on the international application.
- 2 A copy of the report and its annexes if any, is being transmitted to the International Bureau for communication to all the elected Offices.
- 3 Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
- 4 REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US

Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No (703)305-3230

Form PCT/IPEA/416 (July 1992)

Authorized officer

Christopher K. Tins
Christopher K. Tins

Telephone No 703-308-0196

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference XYHIGHPURPCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No PCT/US01/15150	International filing date (day/month/year) 09 May 2001 (09 05 2001)	Priority date (day/month/year) 09 May 2000 (09 05 2000)
International Patent Classification (IPC) or national classification and IPC IPC(7) A01N 1/02, C12M 3/00 and US Cl. 435/2, 288 7		
Applicant XY INC		
1 This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36 2 This REPORT consists of a total of <u>6</u> sheets, including this cover sheet ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70 16 and Section 607 of the Administrative Instructions under the PCT) These annexes consist of a total of <u> </u> sheets		
3 This report contains indications relating to the following items I ☒ Basis of the report II ☐ Priority III ☒ Non-establishment of report with regard to novelty inventive step and industrial applicability IV ☒ Lack of unity of invention V ☒ Reasoned statement under Article 35(2) with regard to novelty inventive step or industrial applicability; citations and explanations supporting such statement VI ☐ Certain documents cited VII ☐ Certain defects in the international application VIII ☐ Certain observations on the international application		
Date of submission of the demand 10 December 2001 (10.12 2001)	Date of completion of this report 07 January 2003 (07 01 2003)	
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer  Christopher H. Tate Telephone No. 703-308-0196	

Form PCT/IPEA/409 (cover sheet)(July 1998)

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US01/15150

I Basis of the report

1 With regard to the elements of the international application: *

- ☒ the international application as originally filed
- ☒ the description
pages 1-51 as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the claims
pages 52-91 as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE filed with the demand
pages NONE filed with the letter of _____
- ☒ the drawings:
pages 1-28 as originally filed
pages NONE filed with the demand
pages NONE, filed with the letter of _____
- ☐ the sequence listing part of the description
pages NONE as originally filed
pages NONE filed with the demand
pages NONE, filed with the letter of _____

2 With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23 1(b))
- ☐ the language of publication of the international application (under Rule 48 3(b))
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55 3)

3 With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing

- ☐ contained in the international application in printed form
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4 ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos NONE
- ☐ the drawings, sheets/fig NONE

5 ☐ This report has been established as if (some of) the amendments had not been made since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(e)) **

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No

PCT/US01/15150

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1 The question whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been and will not be examined in respect of

☐ the entire international application,

☒ claims Nos 51-95

because

☐ the said international application, or the said claim Nos _____ relate to the following subject matter which does not require international preliminary examination (*specify*)

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos _____ are so unclear that no meaningful opinion could be formed (*specify*)

☐ the claims, or said claims Nos _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos 51-95

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No
PCT/US01/15150**V Reasoned statement under Rule 66 2(a)(ii) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement****1 STATEMENT**

Novelty (N)	Claims <u>12 23 24 30 and 31</u>	YES
	Claims <u>1 11 13-22 and 25 29</u>	NO
Inventive Step (IS)	Claims <u>23 and 24</u>	YES
	Claims <u>1 22 and 25-31</u>	NO
Industrial Applicability (IA)	Claims <u>1 31</u>	YES
	Claims <u>NONE</u>	NO

2 CITATIONS AND EXPLANATIONS

Claims 1 11 13-22, and 25-29 lack novelty under PCT Article 33(2) as being anticipated by Beyhan et al.

Beyhan et al. reasonably teach a method of isolating X- and Y-chromosome bearing sperm cells from bovine using the claimed steps (see entire document)

Claims 1-22 and 25 31 lack an inventive step under PCT Article 33(3) as being obvious over Beyhan et al

Beyhan et al. reasonably teach a method of isolating X- and Y-chromosome bearing sperm cells from bovine using the claimed steps (see entire document). However, if not expressly taught, the adjustment of conventional working parameters (such as maintaining unstained DNA within the nucleus of spermatozoa and/or substituting other livestock mammals such as ovine or equine from which to isolate X- and Y-chromosome bearing sperm cells) would have been merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan having the cited reference as a guide.

Claims 23 and 24 meet the criteria set out in PCT Article 33(2)-(3) under novelty and inventive step because the prior art does not teach or fairly suggest an overall method of isolating X- and Y-chromosome bearing sperm cells which include the steps recited in claims 23 and 24.

Claims 1 31 meet the criteria set out in PCT Article 33(4) under industrial applicability because the method can be used to efficiently isolate X- and Y-chromosome bearing sperm cells from various mammalian species.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No
PCT/US01/15150

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

IV 3 This Authority considers that the requirement of unity of invention is accordance with Rules 13.1, 13.2 and 13.3 is not complied with for the following reasons

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I claim(s) 1-31 drawn to a method of isolating X and Y sperm cells by determining a sex differentiation characteristic and separating on the basis of that characteristic.

Group II, claim(s) 32-50, drawn to an apparatus to isolate X and Y sperm cells by determining a difference in volume of the sperm heads comprising a beam of electromagnetic radiation, detector, analyzer and sperm cells

Group III claim(s) 96-120, drawn to an apparatus to differentiate particles comprising an asymmetric particle in a fluid stream, an irradiation source, optics, light emission material, detector and analyzer

Group IV claim(s) 121-147 drawn to an apparatus to differentiate particles comprising a nozzle, an oscillator, droplets and sperm cells

Group V claims(s) 148-182, drawn to an apparatus comprising particles, light emission source, a photo-multiplier tube and an analyzer

Group VI claims(s) 183-209 drawn to an apparatus comprising asymmetric particles, an irradiation source, optics, light emission material and detector

The inventions listed as Groups I-VI do not relate to a single general inventive concept under PCT Rule 13.1 because under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons

PCT Rules 13.1 and 13.2 do not provide for multiple methods or apparatuses

The methods of Group I require distinct materials and steps from the method of Group II. For example, the method of Group II requires assessment of the volume of the capsule containing DNA, while the methods of Group I do not require such an assessment.

The methods of Group I do not require the apparatuses of Groups II, V and VI

The apparatuses of Groups II, V and VI all have distinct components and are therefore distinct apparatuses.