

Señora

Alix Carmenza Céspedes de Vergel

Jefe de División de Nuevas Creaciones

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

E. _____ S. _____

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 07-134135- -00001-0000

Fecha: 2008-04-15 16:07:09 Dep. 2020 NUECREACIONE
Tra. 11 PATENTEIYII Eve: 378 FASENACIONALI
Act. 329 CTOINFORMACION Folios: 9

Referencia: Expediente No. 07.134.135

Solicitud de Patente de Invención titulada: "Tigeciclina y métodos para preparar 9-aminominociclina"

Solicitante: Wyeth.

MEMORIAL DE ALCANCE

ÁLVARO CORREA ORDÓÑEZ, mayor de edad y vecino de Bogotá D.C., identificado según aparece al pie de mi firma, en mi condición de apoderado de la sociedad en referencia, manifiesto lo siguiente:

El día 19 de diciembre de 2007, bajo el número de radicación 07.134.135 presenté la solicitud de patente de invención de la referencia, para la cual adjunto informe preliminar internacional sobre patentabilidad, capítulo I del tratado de cooperación en materia de patentes.

Atentamente,

ÁLVARO CORREA ORDÓÑEZ

C.C.No.79.143.366 de Usaquén

T.P.20.281

Anexo: Informe preliminar internacional sobre patentabilidad, capítulo I

PATENT COOPERATION TREATY

PCT/US2006/02053

2

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)

(PCT Rule 44bis.1(c))

To:

RDB/ACT/GYP/AMA

MCDONELL, Leslie, A.
FINNEGAN, HENDERSON, FARABOW, GARRETT &
DUNNER LLP
901 New York Avenue
Washington, DC 20001-4413
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year)

13 December 2007 (13.12.2007)

Applicant's or agent's file reference

1142-381-304

IMPORTANT NOTICE

International application No.

PCT/US2006/020536

International filing date (day/month/year)

25 May 2006 (25.05.2006)

Priority date (day/month/year)

27 May 2005 (27.05.2005)

Applicant

WYETH et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Nora Lindner

JST
1.3.08

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in PCT/IB/326 (January 2004)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 1142-381-304	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2008/020538	International filing date (day/month/year) 25 May 2006 (25.05.2006)	Priority date (day/month/year) 27 May 2005 (27.05.2005)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant WYETH			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(u).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | |
|--|---|
| ☒ Box No. I | Basis of the report |
| ☐ Box No. II | Priority |
| ☐ Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| ☐ Box No. IV | Lack of unity of invention |
| ☒ Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| ☒ Box No. VI | Certain documents cited |
| ☐ Box No. VII | Certain defects in the international application |
| ☐ Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

Date of issuance of this report 30 November 2007 (30.11.2007)	
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Nora Lindner
Facsimile No. +41 22 338 82 70	e-mail: pt02.pct@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)Applicant's or agent's file reference
see form PCT/ISA/220FOR FURTHER ACTION
See paragraph 2 belowInternational application No.
PCT/US2006/020536International filing date (day/month/year)
25.05.2006Priority date (day/month/year)
27.05.2005International Patent Classification (IPC) or both national classification and IPC
INV. C07C231/02 C07C237/26 A61K31/65 A61P31/00Applicant
WYETH

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523856 epmu d
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Date of completion of
this opinionsee form
PCT/ISA/210

Authorized Officer

GRENOUILLAT, N

Telephone No. +49 89 2399-8914



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
PCT/US2006/020536**Box No. 1 Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in electronic form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
PCT/US2006/020536

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-51
	No: Claims	52-60
Inventive step (IS)	Yes: Claims	1-51
	No: Claims	52-60
Industrial applicability (IA)	Yes: Claims	1-60
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

and / or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

see form 210

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/US2006/020536

Reference is made to the following documents:

- D1: Drugs of the Future, 2001, 26, 851-858
D2: US5675030
D3: Journal of Organic Chemistry, 2003, 68, 5838-5851
D4: Journal of Medicinal Chemistry, 1994, 37, 184-188

Re Item V.

**Reasoned statement with regard to novelty, inventive step or industrial
applicability; citations and explanations supporting such statement**

1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 52 to 60 is not new in the sense of Article 33(2) PCT.

The compounds disclosed in this application are already known (see D1), therefore the subject-matter of claims 52 to 54 is not new in the sense of Article 33(2) PCT.

Moreover the use of the compounds disclosed in this application in a composition is also not new in the sense of that these compounds were already known and characterized (see D1 and D2), therefore the subject-matter of claims 55-60 is not new in the sense of Article 33(2) PCT.

2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (see Paragraph "Synthesis" p 851):

A process for the synthesis of tigecycline comprising the steps of:

- nitration of minocycline with KNO_3 and H_2SO_4 to form a 9-nitro derivative,
- reduction of this 9-nitro derivative with H_2 over Pd/C in 2-methoxyethanol/2N H_2SO_4 to provide 9-aminominocycline,
- acylation of 9-aminominocycline either a) with 2-bromoacetyl bromide in N,N-dimethylpropyleneurea (DMPU) to form 9-(2-bromoacetamido)minocycline, followed by reaction with tert-butylamine to yield after purification the attended tigecycline, either b) with N-tert-butylglycyl chloride to form directly the attended tigecycline.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/US2006/020536

The subject-matter of claim 1 differs from D1 in that the nitro-intermediate is not isolated from the reaction mixture and direct involving in the reductive step (the expression "reaction mixture slurry" was considered to relate to a reaction mixture in which no compounds are isolated).

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by this application is to find a process which produce the minocycline derivates in a purer form and more specially contaminated with a less amount of the C4-epimer.

According to comparatives examples 1 and 2 using the method described in D1 (see pages 50-55 of this application), the isolated aminominocycline derivate (4) is contaminated with 1.75% to 3.88% of the C4-epimer. According to example 1 using the method claimed in this application (see page 49 of this application), the isolated aminominocycline derivate (4) is contaminated with 0.9% of the C4-epimer.

None of the documents cited in the search report show or suggest that the non isolation of the nitro-derivatives would allow to higher the purity of the 9-aminominocyclines. Therefore the subject matter of claim 1 appears to be novel and inventive.

Claims 2-51 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

3. Further remarks

- 3.1 Claims 1, 35 and 44 are not supported by the description as required by Article 6 PCT, as their scope is broader than justified by the description and drawings. The reasons therefor are the following:

Claims 1 and 35 claim the formation of an intermediate resulting of reaction of a nitrating agent with a compound of formula 2. According to the description of the complete reaction scheme described in this application, the only intermediate formed seems to be the 9-nitrominocycline derivate (compound 3). Therefore the term "intermediate" using in claims 1 and 35 without precising the nature of this intermediate, renders the scope of the claims broader than justified by the description.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/US2006/020536

Likewise claims 35 and 44 claim the formation of a second intermediate resulting of reaction of a reducing agent with the intermediate of formula 3. According to the description of the complete reaction scheme described in this application, the only intermediate formed seems to be the 9-aminomincycline derivate (compound 4). Therefore the term "intermediate" using in claims 35 and 44 without precisising the nature of this intermediate, renders the scope of the claims broader than justified by the description.

- 3.2 Claims 20, 21, 30-33 do not meet the requirements of Article 6 PCT In that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.
- 3.3 In claim 48 and in the description on page 20 paragraph [079], the second step concerning the acylation is missing.
- 3.4 The units psl employed in claims 11 and 12 and on pages 15, 49 and 54 is not recognlzed in international practice used, contrary to the requirements of Rule 10.1(d) PCT.
- 3.5 Contrary to the requirements of Rule 5.1(a)(ii)PCT, the relevant background art disclosed in D1 and D2 is not mentioned in the description, nor is these documents identified therein.

Re Item VI**Certain documents cited****Certain published documents**

Bioorganic & Medicinal Chemistry Letters, 2006, 16, 400-403
Available online: 21 October 2005

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No.07-134135

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **592** DE

FECHA **30 DE MAYO DE 2008** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **28 DE AGOSTO DEL 2008**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____ NO **X**