

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4).

Dated: 13 July 2023

Electronic Signature for Xin Zhang, Ph.D.: /Xin Zhang, Ph.D./

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

PCT/US23/27603

International Application No.

13 July 2023 (13.07.2023)

International Filing Date

PCT INTERNATIONAL

Name of receiving Office and "IPC International Application"

Applicant's or agent's file reference (if desired) (25 characters maximum)

131734-00920

Box No. I TITLE OF INVENTION

TYROSINE KINASE 2 INHIBITORS AND USES THEREOF

Box No. II APPLICANT

☐ This person is also inventor

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

BIOGEN MA INC.
225 Binney Street
Cambridge, Massachusetts 02142
United States of America

E-mail address*

Telephone No.

Facsimile No.

Applicant's registration No. with the Office

* E-mail authorization: Indicating an e-mail address above authorizes the receiving Office, the International Searching Authority, and the International Bureau, if they provide such a service, to send notifications exclusively by e-mail to that address, unless the following box is marked:

☐ notifications are requested to be sent exclusively by postal mail.

State (that is, country) of nationality:

US

State (that is, country) of residence:

US

This person is applicant for the purposes of: ☒ all designated States

☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

ZHANG, Xin
McCarter & English, LLP
265 Franklin Street
Boston, Massachusetts 02110
United States of America

E-mail address*

docket@mccarter.com

Telephone No.

(617) 449-6500

Facsimile No.

(617) 607-9200

Agent's registration No. with the Office

62,139

* E-mail authorization: Indicating an e-mail address above authorizes the receiving Office, the International Searching Authority, and the International Bureau, if they provide such a service, to send notifications exclusively by e-mail to that address, unless the following box is marked:

☐ notifications are requested to be sent exclusively by postal mail.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

VESELS, Jeffrey
c/o Biogen MA Inc.
225 Binney Street
Cambridge, Massachusetts 02142
United States of America

This person is:

- ☐ applicant only
- ☐ applicant and inventor
- ☒ inventor only *(If this check-box is marked, do not fill in below.)*

Applicant's registration No. with the Office

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of: ☐ all designated States

☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

LEVIN, Tamara Halkina
c/o Biogen MA Inc.
225 Binney Street
Cambridge, Massachusetts 02142
United States of America

This person is:

- ☐ applicant only
- ☐ applicant and inventor
- ☒ inventor only *(If this check-box is marked, do not fill in below.)*

Applicant's registration No. with the Office

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of: ☐ all designated States

☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

VANDEVEER, Harold George
c/o Biogen MA Inc.
225 Binney Street
Cambridge, Massachusetts 02142
United States of America

This person is:

- ☐ applicant only
- ☐ applicant and inventor
- ☒ inventor only *(If this check-box is marked, do not fill in below.)*

Applicant's registration No. with the Office

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of: ☐ all designated States

☐ the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

LOPEZ DE TURISO, Felix Gonzalez
c/o Biogen MA Inc.
225 Binney Street
Cambridge, Massachusetts 02142
United States of America

This person is:

- ☐ applicant only
- ☐ applicant and inventor
- ☒ inventor only *(If this check-box is marked, do not fill in below.)*

Applicant's registration No. with the Office

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of: ☐ all designated States

☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
<i>If none of the following sub-boxes is used, this sheet should not be included in the request.</i>	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> XIN, Zhili c/o Biogen MA Inc. 225 Binney Street Cambridge, Massachusetts 02142 United States of America	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only <i>(If this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
This person is applicant for the purposes of: ☐ all designated States ☐ the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> LIN, Edward Yin Shiang c/o Biogen MA Inc. 225 Binney Street Cambridge, Massachusetts 02142 United States of America	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only <i>(If this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
This person is applicant for the purposes of: ☐ all designated States ☐ the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> MAITRA, Soma c/o Biogen MA Inc. 225 Binney Street Cambridge, Massachusetts 02142 United States of America	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only <i>(If this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
This person is applicant for the purposes of: ☐ all designated States ☐ the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> PATTAROPONG, Vatee c/o Biogen MA Inc. 225 Binney Street Cambridge, Massachusetts 02142 United States of America	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only <i>(If this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
This person is applicant for the purposes of: ☐ all designated States ☐ the States indicated in the Supplemental Box	
☒ Further applicants and/or (further) inventors are indicated on another continuation sheet.	

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
<i>If none of the following sub-boxes is used, this sheet should not be included in the request.</i>	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> SCIABOLA, Simone c/o Biogen MA Inc. 225 Binney Street Cambridge, Massachusetts 02142 United States of America	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only <i>(If this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
This person is applicant for the purposes of: ☐ all designated States ☐ the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> HELAL, Christopher c/o Biogen MA Inc. 225 Binney Street Cambridge, Massachusetts 02142 United States of America	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only <i>(If this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
This person is applicant for the purposes of: ☐ all designated States ☐ the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> GUCKIAN, Kevin M. 44 Little Pond Road Northborough, Massachusetts 01532 United States of America	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only <i>(If this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
This person is applicant for the purposes of: ☐ all designated States ☐ the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i>	This person is: ☐ applicant only ☐ applicant and inventor ☐ inventor only <i>(If this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State <i>(that is, country)</i> of nationality:	State <i>(that is, country)</i> of residence:
This person is applicant for the purposes of: ☐ all designated States ☐ the States indicated in the Supplemental Box	
☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.	

Supplemental Box

If the Supplemental Box is not used, this sheet should not be included in the request.

1. If, in any of the Boxes, except Boxes Nos. VIII(i) to (v) for which a special continuation box is provided, **the space is insufficient** to furnish all the information: in such case, write "Continuation of Box No. ..." (indicate the number of the Box) and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient, in particular:
 - (i) **if more than one person is to be indicated as applicant and/or inventor** and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;
 - (ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication **"the States indicated in the Supplemental Box"** is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;
 - (iii) if, in Box No. II or in any of the sub-boxes of Box No. III, **the inventor or the inventor/applicant is not inventor for the purposes of all designated States**: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;
 - (iv) if, in addition to the agent(s) indicated in Box No. IV, there are **further agents**: in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;
 - (v) if, in Box No. VI, there are **more than three earlier applications whose priority is claimed**: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI.
2. If the applicant intends to make an indication of the wish that the international application be treated, in certain designated States, as an application for a patent of addition, certificate of addition, inventor's certificate of addition or utility certificate of addition: in such case, write the name or two-letter code of each designated State concerned and the indication **"patent of addition," "certificate of addition," "inventor's certificate of addition" or "utility certificate of addition,"** the number of the parent application or parent patent or other parent grant and the date of grant of the parent patent or other parent grant or the date of filing of the parent application (Rules 4.11(a)(i) and 49bis.1(a) or (b)).
3. If the applicant intends to make an indication of the wish that the international application be treated, in the United States of America, as a continuation or continuation-in-part of an earlier application: in such case, write "United States of America" or "US" and the indication **"continuation" or "continuation-in-part"** and the number and the filing date of the parent application (Rules 4.11(a)(ii) and 49bis.1(d)).

Continuation of Box No. IV:

James M. Alburger, 77,293; Mei Bai, Ph.D., 64,507; Christopher D. Bayne, 67,909; Coalton Sundiata Bennett, 77,797; George Blazeski, 73,381; Dylan M. Blumenthal, 79,687; Jim Bollinger, 32,555; Anita M. Bowles, Ph.D., 61,189; Ronald E. Brown, 32,200; David R. Burns, 46,590; Linlin Cao, 77,642; Vadim Cherkasov, 65,243; Dave S. Christensen, 40,955; Joseph A. Ciardi, 64,760; Marcie B. Clarke, J.D., Ph.D., 63,723; David G. Conlin, 27,026; John S. Curran, 50,445; Steven G. Davis, Ph.D., 39,652; Michael J. DeGrazia, Ph.D., 68,901; Alexa Marie J. Derkasch, 77,041; Xiaoyuan Ding, 75,354; Tanya S. D'Souza, 56,948; Andrew R. Ehle, 78,384; Kathleen Ehrhard, 55,144; Robert H. Fischer, 30,051; Thomas F. Foley, 76,384; Kia L. Freeman, 47,577; Michael R. Friscia, 33,884; Mark D. Giarratana, 32,615; Eric E. Grondahl, 46,741; Maneesh Gulati, 60,963; Nathan D. Harrison, 73,050; Timothy Homlish, 66,174; Thomas O. Hoover, 32,470; John P. Isacson, 33,715; Daniel R. Jones, 79,497; Stephen L. Keefe, 61,100; David K. Kincaid, 68,336; Alex Korona, 73,842; Basil S. Krikelis, 41,129; Jonathan C. Lovely, 60,821; Yu Lu, Ph.D., 50,306; Beverly W. Lubit, 47,759; Sean R. MacDavitt, 64,527; Jill Ann Mello, Ph.D., 55,450; Basam E. Nabulsi, 31,645; Deborah L. Nagle, Ph.D., 59,978; Mark E. Nikolsky, 48,319; Katarina Overberg, 81,488; Kevin L. Reiner, 43,040; Jeffrey B. Safran, 54,689; Michael A. Sartori, 41,289; David J. Silva, 49,036; Wei Song, 64,320; Jonathan M. Sparks, Ph.D., 53,624; Gina M. Stewart, 76,579; Lisa D. Tyner, 51,619; Ethan J. Ung, 62,603; Matthew R. Van Eman, 58,063; Jin Wang, Esq., 66,467; Zhongyu "Alex" Wang, 71,771; Daniel F. Weston, 72,733; Miao Yu, 79,354; Maria Laccotripe Zacharakis, Ph.D., 56,266; Paul M. Zagar, 52,392; Wei Zhang, 79,164; Xin Zhang, Ph.D., 62,139; and Lingling Zhao, 80,174

Box No. V DESIGNATIONS

The filing of this request **constitutes under Rule 4.9(a) the designation** of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is **not designated** for any kind of national protection
- ☐ JP Japan is **not designated** for any kind of national protection
- ☐ KR Republic of Korea is **not designated** for any kind of national protection

(The check-boxes above may only be used to exclude (irrevocably) the designations concerned if, at the time of filing or subsequently under Rule 26bis.1, the international application contains in Box No. VI a priority claim to an earlier national application filed in the particular State concerned, in order to avoid the ceasing of the effect, under the national law, of this earlier national application.)

Box No. VI PRIORITY CLAIM AND DOCUMENT

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application: regional Office	international application: receiving Office
item (1) 14 July 2022 (14.07.2022)	63/389038	US		
item (2)				
item (3)				

☐ Further priority claims are indicated in the Supplemental Box.

Furnishing the priority document(s):

☒ The **receiving Office** is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) *(only if the earlier application(s) was filed with the receiving Office which, for the purposes of this international application, is the receiving Office)* identified above as:

☒ all items ☐ item (1) ☐ item (2) ☐ item (3) ☐ other, see Supplemental Box

☐ The **International Bureau** is requested to obtain from a digital library a certified copy of the earlier application(s) identified above, using, where applicable, the access code(s) indicated below *(if the earlier application(s) is available to it from a digital library)*:

☐ item (1) ☐ item (2) ☐ item (3) ☐ other, see Supplemental Box

access code _____ access code _____ access code _____

Restore the right of priority: the receiving Office is requested to restore the right of priority for the earlier application(s) identified above or in the Supplemental Box as item(s) (_____). *(See also the Notes to Box No. VI; information **must** be provided to support a request to restore the right of priority.)*

Incorporation by reference: where an element of the international application referred to in Article 11(1)(iii)(d) or (e) or a part of the description, claims or drawings referred to in Rule 20.5(a), or an element or part of the description, claims or drawings referred to in Rule 20.5bis(a) is not otherwise contained in this international application but is completely contained in an earlier application whose priority is claimed on the date on which one or more elements referred to in Article 11(1)(iii) were first received by the receiving Office, that element or part is, subject to confirmation under Rule 20.6, incorporated by reference in this international application for the purposes of Rule 20.6.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) *(if more than one International Searching Authority is competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):*

ISA / EP

Continuation of Box No. VII USE OF EARLIER SEARCH AND CLASSIFICATION RESULTS		
1. Request by the applicant under Rule 4.12		
1.1	☐ The ISA indicated in Box No. VII is requested to take into account the results of the earlier search(es) indicated below (see also Notes to Continuation of Box No. VII, item 1; use of results of more than one earlier search)	
Filing date (day/month/year)	Application Number	Country (or regional Office)
☐ Statement (Rule 4.12(ii)): this international application is the same, or substantially the same, as the application in respect of which the earlier search was carried out except, where applicable, that it is filed in a different language.		
1.2 Submission of the earlier search results, where necessary*		
☐ Availability of documents (Rules 12bis.1(c) and (d) and 12bis.2(b)): the following documents are available to the ISA in a form and a manner acceptable to it, and therefore DO NOT need to be submitted by the applicant to the receiving Office, or to the ISA.		
☐ a copy of the results of the earlier search,		
☐ a copy of the earlier application,		
☐ a translation of the earlier application into a language which is accepted by the ISA,		
☐ a translation of the results of the earlier search into a language which is accepted by the ISA,		
☐ a copy of any document cited in the earlier search results (if known, please indicate below the documents available to the ISA):		
☐ Request from the applicant to the receiving Office to transmit to the ISA a copy of the earlier search results (Rule 12bis.1(b) and (d)): (where the earlier search was not carried out by the ISA indicated in Box No. VII but by the same Office as that which is acting as receiving Office; or where the earlier search results are otherwise available to the receiving Office); the applicant requests the receiving Office to prepare and transmit to the ISA a copy of the earlier search results.		
* The applicant only needs to furnish a copy of the earlier search results to the receiving Office, or the ISA, if none of the scenarios mentioned under item 1 applies. (See item 10 in the check-list and also Notes to Continuation of Box No. VII, item 1).		
☐ Further earlier searches are indicated on a continuation sheet.		
2. Transmission of the earlier search and classification results to the ISA by the receiving Office where the applicant DID NOT make a request under Rule 4.12		
2.1 Where the international application claims priority of an earlier application, subject to Article 30(2)(a) and (3), the receiving Office:		
-- shall transmit a copy of the earlier search and classification results to the ISA (unless such copy is already available to the ISA), where the earlier application was filed with the same Office as that which is acting as the receiving Office and that Office has carried out the earlier search in respect of the earlier application (Rule 23bis.2(a));		
-- may transmit such a copy if the earlier application was filed with a different Office, but where the results of that earlier search and classification are nevertheless available to the receiving Office (Rule 23bis.2(c)).		
However, where the applicant did not request the receiving Office to transmit to the ISA a copy of the earlier search results under Rule 4.12 (see above item 1), in respect of an earlier search carried out on the following earlier application, the priority of which is subsequently claimed in this international application, the applicant may consider (see also Notes to Continuation of Box No. VII, item 2; use of more than one earlier search):		
Filing date (day/month/year)	Application Number	Country (or regional Office)
2.2 Request not to transmit the earlier search results by the receiving Office to the ISA (Rule 23bis.2(b))		
☐ to request that the receiving Office DOES NOT transmit the results of the earlier search to the ISA (Rule 23bis.2(b)) (may only be checked where the international application is filed with the following receiving Offices: DE, FI and SE)		
2.3 Authorization to transmit the earlier search and classification results by the receiving Office to the ISA (Rule 23bis.2(a) and (e))		
☐ to authorize the receiving Office to transmit the results of the earlier search and classification to the ISA (Rule 23bis.2(e)) (may only be checked where the international application is filed with the following receiving Offices: AU, CZ, FI, HU, IL, JP, NO, SE, SG and US)		
☐ to authorize the receiving Office to transmit the results of the earlier international search and classification to the ISA (Rule 23bis.2(a) and Article 30(2)(a) and (3)) (may only be checked where the earlier search concerns an international application, the priority of which is subsequently claimed in this international application and where the earlier international search was carried out by a different ISA than the ISA chosen in Box No. VII)		
☐ Further earlier searches are indicated on a continuation sheet.		
Box No. VIII DECLARATIONS		
The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):		Number of declarations
☐ Box No. VIII (i)	Declaration as to the identity of the inventor	:
☒ Box No. VIII (ii)	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	: 1
☒ Box No. VIII (iii)	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	: 1
☐ Box No. VIII (iv)	Declaration of inventorship (only for the purposes of the designation of the United States of America)	:
☐ Box No. VIII (v)	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	:

Box No. VIII (ii) DECLARATION: ENTITLEMENT TO APPLY FOR AND BE GRANTED A PATENT

The declaration must conform to the standardized wording provided for in Section 212; see Notes to Boxes Nos. VIII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (ii). If this Box is not used, this sheet should not be included in the request.

Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent (Rules 4.17(ii) and 51bis.1(a)(ii)), in a case where the declaration under Rule 4.17(iv) is not appropriate:

in relation to this international application,

BIOGEN MA INC. is entitled to apply for and be granted a patent by virtue of the following:

an assignment from:

Jeffrey VESSELS, Tamara Halkina LEVIN, Felix Gonzalez LOPEZ DE TURISO, Zhili XIN, Soma MAITRA, Vatee PATTAROPONG, Simone SCIABOLA, and Kevin M. GUCKIAN to BIOGEN MA INC., dated 15 July 2022 (15.07.2022)

an assignment from:

Harold George VANDEVEER to BIOGEN MA INC., dated 18 July 2022 (18.07.2022)

an assignment from:

Edward Yin Shiang LIN and Christopher HELAL to BIOGEN MA INC., dated 25 July 2022 (25.07.2022)



This declaration is continued on the following sheet, "Continuation of Box No. VIII (ii)".

Box No. VIII (iii) DECLARATION: ENTITLEMENT TO CLAIM PRIORITY

The declaration must conform to the standardized wording provided for in Section 213; see Notes to Boxes Nos. VIII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (iii). If this Box is not used, this sheet should not be included in the request.

Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51*bis*.1(a)(iii)):

in relation to this international application,

BIOGEN MA INC. is entitled to claim priority of earlier application USSN 63/389038 by virtue of the following:

an assignment from:

Jeffrey VESSELS, Tamara Halkina LEVIN, Felix Gonzalez LOPEZ DE TURISO, Zhili XIN, Soma MAITRA, Vatee PATTAROPONG, Simone SCIABOLA, and Kevin M. GUCKIAN to BIOGEN MA INC., dated 15 July 2022 (15.07.2022)

an assignment from:

Harold George VANDEVEER to BIOGEN MA INC., dated 18 July 2022 (18.07.2022)

an assignment from:

Edward Yin Shiang LIN and Christopher HELAL to BIOGEN MA INC., dated 25 July 2022 (25.07.2022)



This declaration is continued on the following sheet, "Continuation of Box No. VIII (iii)".

Box No. IX CHECK LIST for electronic filing with RO/US – only to be used when filing via the USPTO electronic filing system

This international application contains the following:	Number of sheets	This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):	Number of items
(a) request form PCT/RO/101 (including any declarations and supplemental sheets)	10	1. ☒ fee calculation sheet	1
(b) description	597	2. ☐ original separate power of attorney	
(c) claims	33	3. ☐ original general power of attorney	
(d) abstract	1	4. ☐ copy of general power of attorney; reference number:	
(e) drawings (if any)	0	5. ☐ priority document(s) identified in Box No. VI as item(s)	
Total number of sheets	641	6. ☐ Translation of international application into (language):	
(f) sequence listing part of the description		7. ☐ separate indications concerning deposited microorganism or other biological material	
☐ filed as a WIPO Standard ST.26 XML file		8. ☐ copy of results of earlier search(es) (Rule 12bis.1(a))	
☐ WILL BE filed separately on physical data carrier(s) as a WIPO Standard ST.26 XML file , on the same day		9. ☒ other (specify): Transmittal Letter	1
Indicate type and number of physical data carrier(s)			

Figure of the drawings which should accompany the abstract:

Language of filing of the international application:

English

Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

/Xin Zhang, Ph.D./
 Xin Zhang, Ph.D., Agent for Applicant(s)
 MCCARTER & ENGLISH, LLP

Attorney Reg. No. (when applicable): **62,139**
13 July 2023

For receiving Office use only		2. Drawings: ☐ received: ☐ not received:
1. Date of actual receipt of the purported international application:	13 July 2023 (13.07.2023)	
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent):	ISA / EP	6 ☐ Transmittal of search copy delayed until search fee is paid

Date of receipt of the record copy by the International Bureau: